

Educating Children with Learning Problems in Primary Schools

Resource book for teachers



National Institute for the
Mentally Handicapped



EDUCATING CHILDREN WITH LEARNING PROBLEMS IN PRIMARY SCHOOLS

RESOURCE BOOK FOR TEACHERS

A UNDP Supported Project



National Institute for the Mentally Handicapped

(Government of India, Ministry of Social Justice and Empowerment)

Manovikasnagar, Secunderabad - 500 009. Andhra Pradesh, INDIA

Tel : 040-27751741-45 Fax : 040-27750198

E-mail: dinimh@hd2.vsnl.net.in Website: www.nimhindia.org

Copyright © 2003
NIMH, Secunderabad

Any part of this publication can be reproduced with acknowledgement to NIMH.

ISBN 81 86594 90 6

Designed by : Ch. Venkatramana, Secunderabad. Ph : 040-27539227
Printed by: Sree Ramana Process Pvt. Ltd., Secunderabad. Ph : 040-27811750

Project Team and Authors

- | | | |
|--|---|--|
| Dr.Jayanthi Narayan <i>Special Educator</i> | - | <i>Project Coordinator</i> <i>Head, Dept of Special Education</i> |
| Ms.A.T.Thressia Kutty <i>Special Educator</i> | - | <i>Research Officer</i> |
| Ms.C. Haripriya <i>Special Educator</i> | - | <i>Research Assistant</i> |
| Ms.G.Kavitha Reddy <i>General Educator</i> | - | <i>Research Assistant</i> |
| Ms.Neela Sen <i>Language Pathologist</i> <i>and Audiologist</i> | - | <i>Research Officer</i> |



RAJWANT SANDHU
Joint Secretary & CVO
Tele. No. : Office : 23386220
E-mail : rsandhu.wel@sb.nic.in

FAX NO. : 23384918

भारत सरकार

सामाजिक न्याय और

अधिकारिता मंत्रालय

शास्त्री भवन

नई दिल्ली-110001

**GOVERNMENT OF INDIA
MINISTRY OF SOCIAL JUSTICE
AND EMPOWERMENT
SHASTRI BHAWAN
NEW DELHI-110001**

FOREWORD

The Government has been increasingly concerned with the coverage of all children by education and has taken up several projects, some even funded by the World Bank and other international aid agencies, such as the District Primary Education Programme, Jan Shala, etc. to achieve the objective of maximizing the enrolment and retention of children between 6 to 14 years in the education system. The 86th amendment to the Constitution of India has made it all the more imperative for us to work towards a situation where all children, including those with disabilities, are included in education programmes appropriate for them.

The Ministry of Social Justice & Empowerment entered into an agreement with UNDP to fund a project in 20 blocks (10 each in UP and Karnataka), with an investment of \$1 million, to develop a model for achieving zero rejection of children with disabilities. In the course of deliberations regarding this project, the attention of the Project Steering Committee was drawn to the plight of children with learning problems, especially specific learning disabilities who, it is estimated, constitute 10% of the children in schools.

Learning styles differ from person to person. Some of us process information better when received through the ears rather than eyes. Some of us effectively process the information visually. Some have difficulty learning in a noisy environment, while some prefer an environment that has the least visual distraction (such as too many windows and posters). All the same, we learn what should be learnt successfully. However, some children cannot learn efficiently due to specific break down in the learning process involving listening, thinking, perceiving, memory and expression. Such difficulties are called specific learning disabilities or specific learning difficulty. As this condition may not have visible disability, many such children are considered lazy, unresponsive or uninterested in studies and are subjected to scolding and punishment by teachers and are the butt of teasing by schoolmates. This can lead to the dropping out of the child from school or rejection

by the school itself, that sees such children as disruptive elements. Even the parents despair of them.

Yet another group of children have difficulty in learning as they have below average intelligence. These are children having borderline intelligence and are called slow learners. Many such children can be mildly mentally retarded. Some children due to emotional disturbance or cultural or social disadvantage may also show poor scholastic performance, but many a time, counseling at the right time helps them improve their academic performance. All these conditions lead to learning problems.

When education has become the right of every child, it is important that every child of school going age must receive education in a manner that he can be receptive to. Since it is noticed that teachers in primary schools generally do not have the techniques of teaching such children, this gap must be bridged. This demands the development of appropriate techniques for detection and intervention for such children who face learning problems in regular schools. Imaginative tips that can help the teacher teach and the student learn can be a vital "TLM".

Under the UNDP supported research project, a research team from the National Institute of Mentally Handicapped, led by Dr. Jayanthi Narayan and including Ms. A.T. Thressia Kutty, Ms. Hari Priya, Ms. G. Kavita and Ms. Neela Sen have developed this handbook that provides information on why children fail to learn, how to screen and detect such children, and how to provide remedial instruction for specific learning problems. As the Indian education system is largely dependent on evaluation through written examinations, the book also includes useful inputs for developing examination skills.

I congratulate the researchers on having prepared an excellent handbook in keeping with the high standards set by NIMH in the field of research. I expect that the primary school teachers will find this handbook useful in helping children with learning problems in the schools.

Date : 20.08.2003


(Mrs. Rajwant Sandhu)
Joint Secretary & CVO

डॉ. एल. गोविन्द राव
निदेशक
Dr. L. GOVINDA RAO
Director

राष्ट्रीय मानसिक विकलांग संस्थान
(सामाजिक न्याय और अधिकारिता मंत्रालय, भारत सरकार)
**NATIONAL INSTITUTE FOR THE
MENTALLY HANDICAPPED**
(Ministry of Social Justice & Empowerment,
Government of India)



PREFACE

Children with learning disabilities are at a disadvantaged position when compared with children who can cope with the normal learning system. These children usually tend to drop out from the school system or the system rejects them, causing concern for the parents. The problem is not a new phenomenon and it is there since the evolution of the mankind. A systematic focus was paid on learning disabilities from 60s onwards in the West and some models were developed to take care of the special needs of these children. In UK the Education Act of 1981 highlighted the identification of children with special education needs and to provide them wherever possible education in ordinary schools. Most of the European countries and Australia also have followed similar policy.

In India there is neither legislation nor policy of such nature. Ironically, this subject comes under no man's land resulting in lack of knowledge and education practices for these children who constitute 10% of the school going population. "Education for all" is given special focus by Government of India which is also guaranteed by constitution. In order to make it possible we have an obligation to systematically work for these groups, which otherwise naturally get excluded in the school system due to their special needs.

There is, therefore, a need to develop materials to understand learning difficulties and provide know-how to take care of the special needs of these children. Having realized the difficulties of these children we have developed a screening checklist and also organized orientation programmes for the regular school teachers to identify the children with learning problems and provide them the needed special services.

Though the problem of learning is attributed to varying capabilities of individuals, it is the school system, which has the responsibility to identify and understand specific problems of the students and come out with solutions. Hence, knowing of the process of learning and identifying various stages and linking the same with the problem of student are crucial for providing solutions to the students with learning difficulties. In this direction, we have brought out a resource package, which is the result of our continued endeavours over many years in the past. This book has been published by us under UNDP project on support to children with disabilities, which is based on the concept of zero rejection.

Contd..2

Chapter I covers the over view of education as the fundamental right of every child and various programmes of the Government of India in achieving education for all including the children with disabilities. It also covers the meaning, definitions, and clarifications of learning problems along with the historical perspective. Chapter II covers the learning problems while assessment and remediation is covered in Chapter III. Learning problems have been conceptually presented comparing the computer system which one can understand. The assessment and remediation is based on the experience and feedback knowledge developed at NIMH over a period. Assessment is an essential phase for intervention, as it explains the level and the kind of learning difficulty of a child and also the process requirement of teacher and other resources.

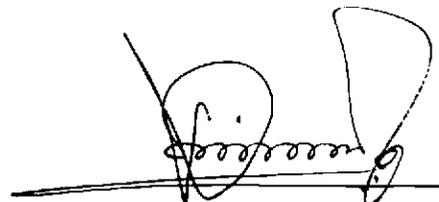
Chapter IV deal with organization of resource room covering all aspects including orientation of the administrators of general schools who are very crucial for making education of the students with learning problems a success.

Subject teaching viz. English, Hindi and Maths is treated logically and graphically in Chapters V, VI and VII which is vital for a teacher to be adaptive and innovative in furthering the subject content and developing teaching and learning materials locally to make it learning friendly. Illustrations given in the book will have refining influence in the learning process. As usual no learning will be complete without providing the mechanism and techniques for evaluation and this has been also provided very systematically for each subject.

The objective of the book is to empower the student with learning difficulties with the necessary skills to overcome learning problems, which is possible if method is clear to enhance the study skills. The Chapter VIII has therefore focused on enhancing study skills, which will be very useful for a teacher in handling a child with learning difficulties. I am confident that the resource book will be useful for the regular schools to cover the students with learning problems.

The research team headed by Dr.Jayanthi Narayan and consisting of Ms.A.T.Theressia Kutty, Ms.Hari Priya, Ms.G.Kavita and Ms.Neela Sen has done a wonderful job in bringing out this unique learning package aiming at "zero rejection" in the regular schools which deserves appreciation and commendation.

I hope that all concerned will take advantage of this book to the maximum in taking care of the special needs of children with learning problems. I welcome suggestions and ideas for further development in this area.



Dr.L.Govinda Rao
Director

Date: 20th August, 2003

ACKNOWLEDGEMENTS

A number of people have contributed their time and efforts to have this handbook printed to be of use to Teachers. As the statement goes "the apples on top of the basket are there because a number of apples are supporting them from inside the basket", the persons who have helped in completing this book have quietly supported. The research team takes pride in placing on record the appreciation and gratitude to all those who have helped - with special mention to the following persons:

- **Dr. L.Govinda Rao**, Director, NIMH, for his encouragement and suggestions through out the project period in completion of the project to enable publication of this handbook.
- **Principal and staff of Kendriya Vidyalaya - Picket, Pallavi Model School, St. John's High School and Chaitanya Vidyalaya** for enabling NIMH to carry out field testing of all the material developed through the project.
- **Cooperation of children who have participated in the field testing** are specially acknowledged here without which, this handbook could not have been validated.
- **Ms.Farida Raj** for helping with the compilation of the relevant Government Orders which are reproduced in this book.
- **Mr.B.Suryaprakasam** for Statistical analysis.
- **Mr.A.Venkateswara Rao** for providing computer support in typing the handbook.
- **Ms. K.Nagarani** for providing computer support in typing the Hindi section of the handbook.
- **Ms. Neeraja** for typing of the Math section of the handbook.
- **Ms. Rama Cousik** for identifying the relevant websites.
- **Ms. Lakshmi Ravindra** for arranging field testing in various schools
- **Ms. Astha Kumari** in developing the Hindi Worksheets
- **Mr. A.K.Sivasankaran** and **Mr.V.Shankar Kumar** for overall coordination and support in correspondence.
- **Mr. V.Rama Mohana Rao, Mr. G.V.Reddy** and **Shri T.Pitchaiah** for their administrative support in printing of the handbook on time.
- **Above all, UNDP** for the financial support for carrying out the project.

The research team places on record with gratitude, its appreciation for the support and help provided by all the persons mentioned above unconditionally which has been responsible for successful completion of this project.

Dr. Jayanthi Narayan

भारत का संविधान प्रस्तावना - Preamble

हम, भारत के लोग, भारत को एक समपूर्ण प्रभुत्व-संपन्न समाजवादी धर्मनिरपेक्ष लोकतन्त्रत्मक गणराज्य बनाने के लिए, तथा उसके समस्त नागरिकों को:

सामाजिक, अर्थिक और राजनैतिक न्याय,
विचार, अभिव्यक्ति, विश्वास, धर्म
और उपासना की स्वतंत्रता,
प्रतिष्ठा और अवसर की समता

प्राप्त कराने के लिए
तथा उन सब में

व्यक्ति की गरिमा और राष्ट्र की एकता और अखंडता
सुनिश्चित करने वाली बंधुता बढ़ाने के लिए

दृढसंकल्प होकर अपनी इस संविधान सभा में आज तारीख 26 नवंबर, 1949 (मिति मार्गशीर्ष शुक्ला सप्तमी संवत् दो हजार छह विक्रमी) को एतद्वारा इस संविधान को अंगीकृत, अधिनियमित और आत्मार्पित करते हैं।

THE CONSTITUTION OF INDIA PREAMBLE

WE, THE PEOPLE OF INDIA, having solemnly resolved to constitute India into a SOVEREIGN SOCIALIST SECULAR DEMOCRATIC REPUBLIC and to secure to all its citizens:

JUSTICE, social, economic and political;

LIBERTY of thought, expression, belief, faith and worship;

EQUALITY of status and of opportunity; and to promote among them all;

FRATERNITY assuring the dignity of the individual and the unity and integrity of the Nation;

IN OUR CONSTITUENT ASSEMBLY this twenty-sixth day of November, 1949, do HEREBY ADOPT, ENACT AND GIVE TO OURSELVES THIS CONSTITUTION.

CONTENTS

CHAPTER

| | | |
|-----|-------------------------------------|-----|
| 1 | Overview | 1 |
| 2 | Learning Problems | 11 |
| 3 | Assessment and Remediation | 21 |
| 4 | Organization of Resource Room | 41 |
| 5 | Teaching English | 51 |
| 6 | Teaching Hindi | 175 |
| 7 | Teaching Mathematics | 245 |
| 8 | Enhancing Study Skills | 355 |
| i | References | 367 |
| ii | Websites | 370 |
| iii | Government Orders | 371 |



CHAPTER-I

OVERVIEW

Education is a fundamental right of every child. Programmes on Universalization of Primary Education are being carried out worldwide. In India, with the initial efforts of District Primary Education Programme (DPEP) followed by Sarva Siksha Abhiyan (SSA), the elementary education has become a priority of the Government.

The number of schools in the country has increased from 2,31,000 in 1950 to 9,30,000 in 1999. The enrollment in primary schools has grown from 19.2 million to 110 million. The gross enrollment ratio has exceeded 100%. Though the scenario is encouraging, out of 200 million children in the age group of 6-14 years, only 141 million attend school. One major reason for drop out is low levels of achievement by the children. Low achievement in children can be due to learning problems in them. Contributing factors to learning problems include, low intelligence, specific learning disabilities or other socio cultural disadvantages.

Sarva Siksha Abhiyan, which is a time-bound integrated programme of Government of India in partnership with the States aims to provide quality education to children in the 6-14 age group by 2010. To achieve this aim, education of children with disabilities need to be given importance. Many children with learning

problems in regular schools must be provided optimal support. This will increase their learning efficiency and reduce the dropout rate.

A large number of children with mild intellectual disabilities (mental retardation), borderline intelligence and specific learning disabilities face difficulties in coping with the academic demands in schools. Such children are large in number and their difficulty is 'invisible', which further compounds the problems. These are children who seem to be functioning like other peers in all aspects except academics. Teachers are puzzled, as these students do not have a visible disability. Such children actually might have a problem in their learning process. If given appropriate support and taught in the way they learn, they can be helped to cope with the academics.

To help such children in learning, it is essential to understand the learning process, how and why learning difficulties occur, and what measures can be taken for correcting such problems. An effort has been made through this book to provide corrective measures for specific learning problems children face in primary schools, with basic focus on teaching English, Hindi and Mathematics. Easy steps in sequence on how to teach concepts in primary schools is described under 'task level

instruction'. This would help teachers to teach the concepts without difficulty. In the section on deficit level instruction, how to correct specific problems (such as reversal, omission) are described.

Primary school teachers will find the tips given in this book very useful for identifying errors students make, analyze errors and correct them. The sample work sheets provided are illustrative and not exhaustive. Teachers can make similar worksheets on their own to teach their students. The intention here is to help teachers to focus on identifying error pattern in a student's performance and correct the error so that he can improve in the specific area of academics.

CHILDREN WITH LEARNING PROBLEMS

Learning styles differ from person to person. Some of us process information better when received through the ears rather than eyes. Some of us effectively process the information visually. Some have difficulty learning in noisy environment, while some prefer an environment that has least visual distraction (such as too many windows and posters). However, we learn what should be learnt successfully. Some children cannot learn efficiently due to specific breakdown in the learning process, involving listening, thinking, perceiving, memory and expression. Such difficulties are called **specific learning disabilities or specific learning difficulty**. Yet another group of children have difficulty in learning as they have below average intelligence. Therefore, their capacity to learn is limited. These are children having **borderline intelligence** and are called **slow learners**. Many may also be mildly mentally retarded. Some children due to **emotional disturbance or cultural or social disadvantage** may also

show poor scholastic performance, but many a time, counseling at the right time helps them improve their academic performance. All the above conditions lead to learning problems.

Criteria for classifying children as having learning problems:

Academic learning problems can arise due to borderline intelligence or mild mental retardation, breakdown in psychological process or due to environmental influences. A number of criteria are used for calling such children as having learning problems. This includes (a) exclusionary clause, (b) discrepancy clause and (c) ability deficit.

Exclusionary clause

This is applied to distinguish children having learning disabilities and other disabilities such as visual impairment, hearing impairment or mental retardation. As per this classification, if a child has learning problem in school, and if it is not due to visual impairment, hearing impairment, mental retardation or cultural, social or economic disadvantage, then, the child will be classified as having specific learning disabilities. However, this is not a foolproof method for defining specific learning disabilities. For instance, technically, children with mental retardation are not learning disabled, but typical symptoms of letter reversals and perception problems are many a time found in them also. In a research study on assessment of primary school children, out of 10 children diagnosed as having specific learning disabilities, 8 children were found to have borderline intelligence on standard intellectual assessment (Narayan and Sivakumar, 2002). Another study by Bender (1995) showed teacher rating of behaviour of children with specific learning disabilities and low achievers did not indicate significant difference.

One way to make decision for education of such children is to respect the 'Right to education' for all children, and, irrespective of diagnostic label, providing them the education they deserve, after considering their strengths and limitations.

Discrepancy clause

To classify a child to be having a need for supportive education, discrepancy between the class placement and achievement level is used. To explain simply, if a child placed at class V happens to function at class II level in reading, he has definite need for support in reading. The studies also indicate that atleast there should be a consistent discrepancy of 2 class levels or more in one or more academic subject areas to call the child as having learning disabilities. Based on the scores received, the profile is also described as functioning at 'independent level', 'instructional level' or 'frustration level' in any given subject at a class level. This helps in deciding on remedial education in resource room.

Ability deficit clause

This is based on the psychological processes involved in learning. Auditory and visual perceptual deficits and subsequently motor, and language disorders lead to ability deficit in the student to learn. In other words, breakdown in the psychological processes are found responsible for poor learning requiring remedial instruction. Academic difficulties as demonstrated in the class work and assessment of psychological process together perhaps will be a better indicator of the student's learning problem for decision making in terms of educational placement.

Whatever is the criteria used, it should be kept in mind that every child who is a low achiever should be the concern of the teacher and must

be provided remedial or resource room support, to provide 'appropriate education' for all children. Remember, 'Education' is a basic Right of all children.

Characteristics of children with learning problems

In a child, the visible and most alarming indicator of learning problem to parents and teachers is the failure in class tests and examinations. When a child consistently shows poor performance in one or more subjects in school, he should be tested to confirm or rule out learning problems. Other characteristics found in such children include deficits in:

- Visual perception
- Auditory perception
- Visual motor activities
- Conceptualization
- Memory
- Attention

A discrepancy between actual performance of the student and the expected performance in class is an indicator of learning problems.

Many children with learning problems are found to be:

- impulsive
- poor in comprehension
- disorganized
- having low self-esteem
- having unpredictable behaviour
- withdrawn
- communicating poorly
- anxious
- moody
- having difficulty in problem solving
- confused
- fidgety

All children with learning problems do not have all the above listed difficulties. Many have some of the characteristics and some have many of the symptoms. However, each child needs to be screened and if he/she is found to have problems, then detailed assessment has to be done so that remedial instruction can be given. Easy screening checklist for use by primary school teachers in English, Hindi and Mathematics are attached in Chapter III of this manual.

Research studies have shown that children with learning problems have most of the following characteristics (Ariel, 1992):

1. Attention and concentration difficulties
2. Socialization difficulties
3. Low frustration tolerance
4. Poor impulse control
5. Perceptual difficulties
6. Poor speech and language development
7. Hyperactivity/Continuous restlessness
8. Poor self concept
9. Poor in studies - reading, spelling, counting, math
10. Poor motor coordination

Historic overview and current status of children with learning problems

Children with learning problems constitute approximately 10% of the children. They are in regular schools along with other non-disabled children. As of now, there is no legislation for slow learners or children with specific learning disabilities.

As recorded by Johnson and Morasky (1980), the major work related to learning disability was done in twentieth century excepting the work of Morgan, an ophthalmologist who referred to this condition as 'word blindness' in 1896. In 1937, the work of Samuel Orton later followed by Birch (1957) led to the

consideration of effect of cerebral dominance on learning. Alfred Strauss and Heinz Werner in early 1940s attempted to study the behaviour of brain injured children. They noted disorders of perception such as figure-ground confusion, perseveration, difficulty in understanding abstract concepts and hyperactive behaviours. The work of Strauss and Werner (1942) and that of Strauss and Lehtinen (1947) formed a firm ground for further research in brain damage in children.

Development of trends in the area of mental retardation has contributed significantly to the field of learning disabilities. In the late 1950s and 1960s, awareness of need for educational programmes for children with learning problems emerged among the professionals. Further, the work of Johnson and Myklebust (1967) focused on the psychoneurological perspective which related academic disorders in terms of problems in processes of learning including sensation, perception, imagery, symbolization and conceptualization. The term minimal brain dysfunction (MBD) was predominantly used in the 1960s. As quoted by Hallahan and Cruickshank (1973), upto 1960 there was paucity of research, limited personnel and no teacher education for learning disabilities (Johnson and Morasky, 1980).

In 1962, first specific definition of learning disability was documented in special education textbook by Kirk. Kirk (1962) introduced a workable, descriptive phrase for the condition and called it Learning Disabilities. This had a quick positive response from the professionals and the Association of children with Learning Disabilities was formed. Though, this term created confusion among laymen and the professionals between LD and learning problems of any kind, the term has been widely

accepted. In 1968, the US National Advisory Committee on handicapped children defined LD, which is currently in use in most parts of the world.

In the UK, the Warnock report (1974) of the education of handicapped children recommended the term 'learning difficulties' for children deserving remedial help in ordinary schools and this term is inclusive of mentally retarded children also. According to this report, the children with "special educational need" included not only children with disabilities but also those children with learning or other difficulties whose needs have hitherto lacked specific recognition (Special Education needs in Scotland, 1980).

In UK, the Education Act of 1981 highlighted the identification of children with special educational needs and to provide them, wherever possible education in ordinary schools. Most of the European countries and Australia tend to have similar policy whereby the child who does not benefit from regular education due to various reasons may be provided suitable special education or remedial education. This includes the children, who have learning problems also.

CHILDREN WITH LEARNING PROBLEMS IN INDIA

About 12.59 million children in school going age in India are disabled (NPE-POA, 1992). With all the efforts of Government of India to Universalize Primary Education, the enrollment of children in school has risen. The enrollment ratios in schools increased in Post Independence India. Yet, specific learning problems do not get detected in many children and they are invisible in the society. Survey on such children has not been done, probably due to the inconspicuous and/or misunderstood nature of the disability. Such

children continue to stay and struggle in the mainstream school without detection. The general education framework has a system of automatic promotion to next class irrespective of the marks obtained by the student. This 'no retention' policy leads the child to a class, which may be much above his ability level thus widening the discrepancy between the actual performance of the child and the expected performance of that class. Further, a 35% marks in each subject is generally adequate for pass in examination, which the child with learning problem manages to get with extra coaching, parental pressure and may be due to lenient correction of paper in some cases. What goes unnoticed is, the trauma the child undergoes in the process. Another limitation of Indian educational system is that the evaluation of a child is based solely on written examination, howsoever good, the child is, with verbal answers. Occasionally, such children do repeat classes due to change of school or parental option, and teachers do get puzzled at the child's problem in academics and try to seek professional assistance. However, due to the pressure of completion of syllabus by the stipulated time and the priority for 100% result in X and XII class of the school, many a time, the children with learning problems lose focus and are removed from rolls of X class. Added to these is the various syllabi system of Central Board, State Boards, ICSE and so on, varied second languages, media of instruction and also a third language to be learnt. With the school/college education having become so competitive in general, children with hidden handicap get nowhere in the educational stream, thus receiving no attention to their hidden talent also.

More number of boys are affected by learning problems than girls.

In recent years, a few voluntary organizations in cities have recognized the problem and started to pay special attention to these children. The scheme of Integrated Education of Disabled Persons (IED) of Ministry of Human Resource Development, Government of India, has also included learning disabilities in the scheme. However, specific detection and educational provision in the mainstream education is yet to evolve. The use of a number of officially recognized languages in respective states, national language Hindi and English in school education add to the problem of evolving a uniform method of detection of difficulty and service provision. However, some steps have found ground and informal intervention procedures are in practice at few places in various parts of the country. Some State Governments and Central board have made educational provision for such children.

Prevalence

Approximately 10% of children are estimated to have learning problems, out of which, 4.6% of school aged students are identified as severely Learning Disabled. The fact that boys far out number girls in incidence of Learning Disability has been linked to possible medical, maturational, sociological and brain organizational factors (Smith, 1991). There is no statistics available regarding the prevalence in India.

There is no exact data on the number of children requiring support in education in India as most of them are accepted in general schools. If teachers are contacted, they would name atleast one or two children in a class of forty children, whom they find poor in studies and not suitable for their class.

Even, if the available data is taken into consideration on the prevalence of disabled

children in school going age, the ones with milder disabling conditions form the largest group. Special needs of a large section of these children are not met in classrooms as general teachers do not possess competencies for it. The time available with them for meeting individual needs is also very limited. These are children who do not require exclusive arrangement of special education. Such children with low level of academic functioning require supportive education, which can be provided through resource room facility in the existing schools.

Orientation and training of teachers of regular classes

Those children who for whatever reason, remain underachievers in their age appropriate classes, require assistance for their education. Therefore, it is the teachers in regular classes who are in a position to identify such children and help them. To enhance easy identification, a simple screening checklist with observable characteristics of such children like the one given in Chapter III of this manual becomes essential. It is good to have a resource room in every school where a trained teacher provides the required extra support to children with learning problems.

It is estimated that about 10% of the population is affected by learning difficulties.

The regular education teachers should be sensitized to the individual differences among children and their learning style. As the children attending resource rooms will be in the classroom of regular educator most of the time, it is important that she works in close coordination with the resource teacher. The programmes in the regular class and in the

resource room should be linked for continuity and generalization.

Where appropriate and feasible, the regular educator must be involved in the follow-up of resource teaching, and should give feedback to the resource teacher.

Resource teaching

The resource teacher, on getting a referral from the regular teacher should thoroughly assess the child for specific problems. This would include, obtaining information on medical and psychological assessment, background information on family history, and other past interventions. The resource teacher would then assess in detail for the grade level functioning in various subject areas such as reading, reading comprehension, writing, spelling, arithmetic computation, arithmetic reasoning, general knowledge and problem solving ability. While assessing, the resource teacher would specifically look for the child's strengths and limitations, style of learning and the ability to reason and relate. She would record the current level of functioning explicitly. The resource teacher would then carefully develop an individualized remedial programme for each child and teach him/her accordingly. Periodic assessment and necessary modifications in the programme based on the progress of the child, is carried out by the resource teacher. The resource teacher would keep the regular class teacher informed of the remedial programme and what needs to be done by him/her as a follow up in the class. This assists in the overall development of the child as he will be eventually in the regular classroom. Thus, the combined effort of both the teachers is an absolute necessity for helping children to overcome learning problems. More details on

organization of resource room is given in Chapter IV.

Educational provisions

As mentioned earlier, there is no legislation to support children with learning problems. However, the project Integrated Education of the Disabled children includes children who are slow learners and learning disabled. Major provisions include additional time for examination, use of a scribe where needed, replacement of third language with courses such as work experience where appropriate and a few other provisions. Such provisions vary from state to state slightly (see appendix for details).

A few regular schools have established resource rooms to assist such children. There are also a few exclusive voluntary organizations in various parts of the country, which provide resource education. Diploma and B.Ed. level courses in special education of learning disabled children are offered by a few organizations and universities. However, considering the magnitude of the problem, the facilities should increase. Regular schools should have resource teachers. Organizing periodic inservice training for the regular teachers on education of such children will have a far reaching effect in including children with learning problems in regular schools. The interface between regular education and special education should ideally lead to acquiring common basic competencies and skills to work together so that the children enjoy the best educational environment.

This resource book aims at assisting teachers in regular primary school to identify learning problems in their students, use remedial methods to correct the problems particularly in Hindi, English and Math. The book also includes details on how to organize a resource room.

LEARNING PROBLEMS

CHAPTER-II

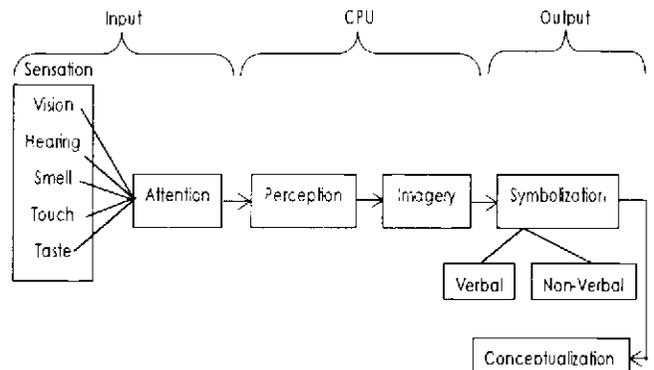
LEARNING PROBLEMS

Learning is an experience a child goes through since birth. He explores his environment and gradually begins to understand the elements around him that satisfy his needs - mother/caregiver, milk, toys..... Though all children go through the developmental stages and acquire tasks appropriate to the given stage, each child is unique with his own physical appearance and characteristics, abilities and talents, personality pattern as well as learning styles. The learner characteristics contribute to their scholastic performances positively or adversely. The teachers must count also the strengths of a learner while correcting or remediating his limitations so that educational planning is done in the right perspective. To do so, a teacher should know how learning occurs and why children fail.

Learning is a multidimensional phenomenon. There tends to be a relationship between the information processing and functioning of the system to enable a child to learn. All children make an effort to learn, but some, due to specific reasons fail to learn effectively.

Why do children fail? To answer this, let us first compare the human being to a computer. A computer has an input (keyboard/mouse), a central processing unit (CPU) and an output (monitor) unit. When all these are intact, the computer works well. In a human being,

consider the five senses as input channels, the brain as CPU and the motor systems (speech, movement, gestures and writing ability) as the output channels. When we say we have learnt something, these systems work in synchrony. A breakdown in any of these will lead to failure in learning.



Learning problems at each stage of sensation, perception, imagery, symbolization and conceptualization must be checked if one has to assist a child in learning. Careful diagnosis is essential for appropriate remediation. Though all the five sensorial inputs contribute to conceptualization, the two modalities most commonly used for academic learning are auditory and visual. Therefore, the processing problems in these two channels must be carefully tested, as briefly seen below.

Sensation: Signs of problem in auditory acuity and visual acuity are to be observed by the class teacher and referred for medical experts' attention. Listening in the class with the ears in an angle (head turned to a side), while teacher dictates, copying from neighbours, seems to look elsewhere when teacher speaks, and copies actively when she writes on the board are some signs that the child needs to be checked by Audiologist/ENT Specialist for **auditory acuity**. Similarly, watering eyes, copying with a lot of errors from the board or copying from the neighbour, attending only when the teacher speaks and not when she writes, shabby handwriting, and ignoring lines are some of the indications for the teacher to refer the child to ophthalmologist to check for **visual acuity**.

Attention: After receiving information through the senses, one should attend to the stimuli to make meaning out of it. To do this, one has to filter the unwanted stimuli and focus only on what is to be absorbed. This is called attention. If the child does not attend enough, the information will not reach the brain and the information received by the senses cannot be understood.

Perception: Perception is basically the ability to discriminate. It makes sensation meaningful. Problems in perception can be very many. It integrates the various sensory stimuli. Perceptual skills is one of the key factors in identifying problems in early academic learning.

The sub-categories of perception are:

- (a) **Discrimination:** Seeing or hearing likenesses and differences in sounds and symbols.
- (b) **Figure ground:** The ability to separate and focus on what one wishes to attend

visually or auditorily from the surrounding environment.

- (c) **Closure:** The ability to synthesize sounds and symbols or recognize whole, from parts.

Imagery: Imagery is essentially memory, where the child is expected to retain that which he had heard, seen or felt and recall when needed. It includes long term and short term memory. Sequential memory is also an essential component of imagery. The language associations of memory involve auditory to auditory, visual to auditory, auditory to visual and visual to visual aspects.

Symbolization: This is otherwise known as language, which can be verbal and nonverbal. This is essential for communication. Problems in receptive, expressive or inner language can lead to problems in learning.

Specific nonverbal learning systems include body image, spatial temporal orientation, and laterality and directionality.

Gross and fine motor efficiency are very essential for learning, as poor balance and coordination, poor body rhythm and eye-hand coordination obviously interfere with learning.

Conceptualization: This is dependent upon the integrity of all the above mentioned stages of learning. It is essential to find out at what conceptual level a child is functioning. The three levels are (1) concrete level, (2) functional level, (3) abstract level.

Example :

Concrete level : Plate is round

Functional level : Plate is used for dining

Abstract level : Plate is a utensil

As a rule, all the teaching should always begin at concrete level and move to abstract level.

Learning problems can be due to difficulty in anyone or more of the above processes of learning by which the student is unable to learn to the optimum. Appropriate educational diagnosis and remedial education will assist in improving his learning process.

Signs of reading disabilities: This is also known as **dyslexia**. The errors in reading at primary level may include the following:

- Omission of letters, syllables, words or word endings (sed for said).
- Addition of sounds, or words in sentences (ischool/school).
- Substitution of words/letters (home/ house, ise cream/icecream).
- Mispronouncing words/letters (Joo/Zoo).
- Reversing whole word/syllable/letters (b/ d, u/n, w/m, now/won, cat/tac).
- Transposing order of words in a sentence (I a bus saw / I saw a bus).
- Ignoring punctuation.

In addition, they can have poorly coordinated motor movements, leading to shabby handwriting or not maintaining lines in their writing. Problems of laterality also can lead to poor right/left orientation in their writing/reading.

Signs of writing disabilities (dysgraphia):

- Slow in writing.
- Improper posture.
- Illegible, shabby handwriting.
- Awkward pencil grip.
- Difficulty in formation of letters.
- Variable letter sizes.
- Poor right/left orientation.
- Inability to maintain line.

- Mixing of capital and small letters.
- Reversal of letters (b/d, m/w, 3/E, 9/6).

Writing problems can be due to visual perceptual difficulty, poor motor coordination and attention deficits.

Signs of problems in mathematics: Also known as **dyscalculia**, these children show following characteristics.

- Difficulty in pointing to small/big, more/less, tall/short when asked.
- Difficulty to show that parts put together make whole.
- Difficulty to demonstrate that adding more objects results in increase in quantity, taking away results in decreasing.
- Difficulty in arranging/grouping objects by size/shape/colour.
- Difficulties in relating number of objects to its symbol, written or verbal.
- Difficulty in pointing to the numeral when named.
- Difficulty in naming numerals.
- Reversal of numbers (45/54, 503/305).
- Difficulty in copying numerals.
- Inability to apply computational skill to daily activity (difficulty in doing "story sums").
- Difficulty in understanding concepts of units/tens/hundreds.
- Difficulty in mathematical judgment and reasoning.

CAUSES

Various causes for learning disabilities may include prenatal, natal, postnatal, genetic, biochemical, and psychological factors (Wallace and McLoughlin).

Prenatal, natal factors: Pasamarick and Knoblock (1960) as quoted by Wallace and McLoughlin (1975) found that a group of children with reading difficulties were products of pregnancies with complications such as toxemia, bleeding and prematurity and low birth weight. Rh-incompatibility, anoxia, maternal endocrine disorders, radiation, maternal age, consumption of drugs, alcohol and tobacco and accidents during pregnancy were also reported to be factors influencing academic achievement in children.

Postnatal factors: Head injury, lead poisoning causing neurological damage, nutritional deficits, deprivation of sensory stimulation and maturational lag of central nervous system are some of the postnatal factors.

Genetic factors: There have been studies indicating occurrence of learning difficulties more frequently in certain families. Studies on twins also have demonstrated evidence in support of this fact. However, Bryant (1972) cautions after an indepth review of literature in this aspect that the presence of familial patterns does not imply that a given case of learning difficulty is a result of genetic factors, but only that genetic factors seem to operate in large number of cases (Wallace and McLoughlin, 1975).

Biochemical factors: Certain metabolic disorders including hypoglycemia, and hypothyroidism are reported to be found in some cases with learning disabilities.

Psychological factors: Children having learning disabilities tend to develop psychological problems as secondary symptoms as they are generally aware of their disabilities.

Certain environmental factors may also contribute to causative factors in children if they are at risk for learning disabilities.

Whatever may be the cause of learning problems in children, the concern of the teacher should be to help the child achieve academically and prevent them from becoming school dropouts.

IDENTIFICATION OF CHILDREN WITH LEARNING PROBLEMS

It is observed that many children with learning problem tend to be hyperactive. Usually teachers or parents complain that the child 'does not complete any activity', 'shifts from one activity to another', 'knowing it is wrong, they still perform certain activities, 'does not listen to instructions in class' or 'always on the move'. Naturally such behaviours will interfere in learning leading to poor academic performance. If the hyperactive child can be made to attend to the activity and receive the information, he can learn successfully.

There are a number of ways to manage hyperactivity. Behaviour management, medical management and specific diet are some of the methods used to reduce hyperactivity. Attention Deficit Disorder (ADD) or Attention Deficit Hyperactive Disorder (ADHD) are commonly used medical vocabulary to refer to children who exhibit (a) inattention, (b) impulsivity, (c) hyperactivity. Those children who do not have extreme attributes of unwanted movements of hyperactivity are classified as ADD. Often times, ADD or ADHD is a clinical judgement by the medical professional (Gearheart, 1986).

Learning problem often is accompanied by disorders of attention or distractibility.

Symptoms of ADHD (DSM IV - 1994)

Diagnostic and Statistical Manual IV of American Psychiatric Association lists the following symptoms:

- I. **ADHD/Inattentive type: At least six of the following symptoms** of inattention **should be presented** for at least six months to a degree that is maladaptive and inconsistent with the developmental level.
 1. Often fails to give close attention to details or makes careless mistakes in school work, work or other activities.
 2. Often has difficulty sustaining attention on tasks or play activities.
 3. Often does not seem to listen to what is being said to him or her.
 4. Often does not follow through on instructions and fails to do school work, chores, duties (not due to oppositional behaviour or failure to understand instructions).
 5. Often has difficulty organizing tasks and activities.
 6. Often avoids or strongly dislikes tasks (school work/home work) that require sustained mental effort.
 7. Often loses things necessary for tasks and activities (school assignment, pencil, books).
 8. Is often easily distracted by extraneous stimuli.
- II. ADHD /Hyperactive - impulsive types: **At least four of the following symptoms** of hyperactivity/impulsivity must have persisted for **at least six months** to a degree that is maladaptive and inconsistent with developmental level.

Hyperactivity

1. Often fidgets with hands or feet or squirms in seat.
2. Leaves seat in classroom or in other situation when remaining seated is expected.
3. Often runs about or climbs excessively in situations where it is inappropriate (in adolescents or adults, may be limited to subjective feeling of restlessness).
4. Often has difficulty planning or engaging in leisure activities quietly.

Impulsivity

1. Often blurts out answers to questions before the questions have been completed.
 2. Often has difficulty waiting in lines or awaiting turns in games or group situations.
- III. **ADHD/Combined subtype:** If criteria for both of the two subtypes are met for at least the past six months, the child may be diagnosed as ADHD combined type.

Hyperkinetic disorders (ICD-10)

A group of disorders characterized by an early onset (usually in the first five years of life), lack of persistence in activities that require cognitive involvement, and a tendency to move from one activity to another without completing anyone, together with disorganized, ill-regulated, and excessive activity. Several other abnormalities may be associated. Hyperkinetic children are often reckless and impulsive, prone to accidents, and find themselves in disciplinary trouble because of unthinking breaches of rules rather than deliberate defiance. Their relationships with adults are often socially disinhibited, with a lack of normal caution and reserve. They are unpopular with other children and may become isolated. Impairment of cognitive functions is common, and specific delays in motor and language development are disproportionately frequent. Secondary complications include dissocial behaviour and low self-esteem.

Excludes : anxiety disorders

Mood (affective) disorders

Pervasive developmental disorders

schizophrenia

Identification in Preschool years

A child with learning disabilities usually gets identified only after he is admitted to school. As his general performance in non-academic areas seem normal, he does not easily get identified in preschool years. Nevertheless, alert observation of the child's age appropriateness for listening, speaking, coordination of motor movements, attention, and concentration on specific activities help in identifying or suspecting problems in preschool children. As noted by Smith (1991) intelligence tests do not prove to be useful for these children as the IQ estimated are highly unreliable estimates of potentials. These scores can vary greatly as the child grows, since preschool development has rapid spurts. However, existing screening measures help in identifying children who have uneven developmental patterns and are at risk for learning disabilities.

Identification in Primary school

This is rather an easy task for the teachers. A child who has adequate sensory, motor abilities and has average intellectual abilities and congenial socio-cultural environment, but is scholastically backward, he can be suspected as having learning difficulty by the teacher. But this alone is not sufficient to call a person learning disabled. To confirm the child's problem, three techniques can be used.

1. Teacher administered checklists
2. Achievement tests
3. Parental reports

The teacher ratings of the child's academic abilities are better predictors than the standard tests, as the teacher has an opportunity to observe the child over a period of time on his processing ability of a given problem. The standard tests many a time, give only the end product of performance. Harnand and Packard (1985) reported after analyzing 58 studies that

correlated kindergarten reading achievement, several years later, the teacher ratings of attention, distractibility and internalizing behaviours proved to be among the best predictors.

To identify children with academic difficulties, there is no substitute to alert observation resulting in an accurate clinical judgement that comes with experience.

Typically, diagnostic information includes, family background, medical history, assessment of intelligence, details of academic achievement and specific test details of academic problems. A variety of diagnostic instruments are used for this purpose.

The educational assessment includes information that assists the teacher in programme planning. This may include norm referenced measures, criterion referenced measures, informal evaluation, techniques or curriculum based assessment strategies. Comprehensive assessment by a multidisciplinary team for the medical, educational, language and emotional aspects of the child will facilitate the student's academic programming.

After various tests are conducted, ideally the multidisciplinary team should meet and discuss, which would enable decision regarding educational placement. As seen earlier, diagnosis varies with the type of problem, discrepancy component, level of academic failure and such details. As the problem is multifaceted, the team becomes necessary for making a diagnosis. Usually, the special educator or educational diagnostician

will be the coordinator of the team. After due consideration of all aspects the diagnosis will be made, which leads to educational placement.

Children with borderline intelligence (slow learners), those with specific learning disabilities, emotional problems or social disadvantage can have learning problem requiring transient or long term support in academics.

The purpose of educational assessment is to collect educationally relevant data on the child's learning behaviour for educational programming. As seen earlier, formal standardized tests as well as informal, criterion referenced tests are used for assessment. Educators prefer the criterion referenced tests as they provide precise current level of functioning of the child and throws light on not only the product but processing of information by the child.

The steps in educational assessment (Lerner, 1971):

1. Measure the child's current achievements in basic skills.
2. Analyze how the child learns.
3. Explore why he is not learning.
4. Gather and interpret data into a diagnostic summary/hypothesis about the child.
5. Develop objectives and plans for teaching.

The educational assessment is not an end in itself but it is a continuous process and is discussed in detail in the Chapter on Assessment and Remediation.

ASSESSMENT AND REMEDIATION

CHAPTER-III

ASSESSMENT AND REMEDIATION

Assessment of children with learning problems is a real challenge as they do not have visible disabilities. In early years, before beginning to attend school, some of the indicators include:

- inability to attend to one activity at a time.
- easily distractible.
- does not show interest in seeing books.
- does not like paper and pencil work.
- clumsy in movement.
- has difficulty in activities such as threading beads.
- delayed speech development.
- does not seem to comprehend what is told.

As the child grows up and starts attending school, the parents get alerted by the complaints from the teachers such as 'does not sit at one place', 'does not complete given tasks', 'not interested in reading and writing' and above all progress report showing poor performance in one or more of the subjects consistently.

Children with learning problems usually have a breakdown in the learning process (specific learning disability) or have borderline level of intelligence (slow learners), because of which

they have a discrepancy between their actual performance and expected performance of their class level. If this discrepancy is found consistently in one or more of the subjects and if the difference exceeds two class levels or more it is a cause of concern. For instance, an eight year old child is expected to be in class III. Despite good teaching and congenial home environment, if his/her performance in one or more subjects is at class 1 level or lower, he needs help.

Screening

Screening is done to shortlist persons with suspected problem. Detailed assessment is done on those children who have been screened and identified for further assessment.

Usually, screening checklists list common symptoms found in children having learning problems in the areas involving visual perception, auditory perception, attention, memory, behaviour, motor aspects, and reading, writing and arithmetic.

The screening checklist found in this handbook, in Hindi, English and Maths at primary level have been validated. A primary level teacher can observe and record the difficulty seen in the child for further assessment and referral.

NIMH Screening checklists for identifying children with learning problems in primary schools:

About 10% of children in schools are estimated to have learning disabilities, out of whom about 6% are with mild problems which if identified early can be corrected by the regular class teachers. To make the task easy for the regular class teacher in screening such children, the Department of Special Education at NIMH has developed screening checklists for problems in English, Hindi and Mathematics. Using these checklists, a primary school teacher can suspect and shortlist children who may have learning problems as well as note the type of problem the student has.

About the checklists

The checklists are developed after compiling the difficulties noticed in children referred with learning problems. As the breakdown in processing in such children occur in visual or auditory channels, the observable difficulties in these areas are noted separately for English and Hindi. Motor and behavioural aspects indicate the difficulties in the output, perhaps due to problems in input and processing and therefore, related aspects in these areas are also noted. In mathematics, the difficulties are noted in order and sequence from lower to higher levels.

Validity

The checklists were used in primary schools having CBSE, ICSE and A.P. State Board syllabus. In order to make the screening checklist useful for identifying primary school children having difficulty in learning, irrespective of the board of school education

they belong to, this exercise was carried out. Content validity was established by comparing with similar checklists for coverage of all aspects of learning problems. Face validity was established by obtaining expert opinion. As the checklist in Hindi was developed for the first time, opinion of teachers who teach Hindi, and that of experts in Hindi was sought and incorporated. The checklists were then administered on large number of children (Hindi - 1832, English - 1951, Maths - 1951). Through the use of the checklists a total of 101 positives (Hindi - 29, English - 34, Maths - 38, same students who have more than one problem is also included) were identified. The teachers agreed that the checklists identified the children who were observed to be having learning problems in schools and that the checklist is easy to administer. Wherever the statements were reported to be ambiguous, were modified and the checklists were finalized as seen in the following pages.

How to use the checklists

As far as possible, the statements of difficulty are made in descriptive and behavioural terms so that a teacher finds it easy to follow and tick at the space given in the margin for those items which are found positive for a student. This also gives her a clue on what **exactly** is the difficulty with the child, many-a-time, leading her to finding a remedial method on her own. Where she finds it difficult to remediate she may take professional help for further assessment, diagnosis and educational support. It is suggested that the checklist is used on those students who show consecutive failures in one or more subjects (Hindi, English or Maths) for more than 3 exams. Occasional failure is not an indicator of learning difficulty.

**NATIONAL INSTITUTE FOR THE MENTALLY HANDICAPPED
Secunderabad**

DEPARTMENT OF SPECIAL EDUCATION

**Project: "Development Of Learning Package for education of children with
learning problems in regular schools"**

Screening Checklist for Primary School Students - English

Name of the student : _____ Date : _____
Age/Sex : _____
Class/Grade : _____
Name of the Class teacher : _____

Please tick only those items which are appropriate :

Indicators of difficulties in visual processing:

- Visually confuses or is slow to read letters or words, which appear similar as ram-ran, far-for.
- Reverses or inverts letters such as p-q, m-w, u-n
- Transposes letters in words such as was-saw, stop-spot
- Art and drawings - immature and lack details
- Prefers auditory activities such as class discussion, or more verbal activities
- Does not do well in activities which require reading instructions
- Confuses identification of right/left on pencil /paper assignments, and/or when moving about the room or a building
- Has difficulty learning order of days of the week, or seasons of the year
- Has inability to read graphs, maps, globes or floor plans
- Has difficulty judging distances
- Has difficulty spacing letters and/or words appropriately
- Omits / substitutes letters in words - dres/dress, foto / photo

Indicators of difficulties in auditory processing:

- Has difficulty understanding spoken directions
- Does not form phrases and/or sentences correctly in spoken language
- Speech not as clear as should be for age level
- Quiet, not talkative

- Has difficulty “finding” words for speech; substitutes words like “thing” for nouns
- Has difficulty or slowness in organizing thoughts for expression
- Uses phrases or single words rather than sentences.
- Has difficulty discriminating consonant sounds; hears-mat for bat, tab for tap.
- Has difficulty discriminating and learning short vowel sounds
- If given a word, has difficulty sounding it out, as in rat is r-a-t
- Has difficulty relating printed letters to these sounds
- Cannot separate sounds which make up blends, as “fl” has sounds of f and l...
- Spells and reads sight words more correctly than phonetic words
- Has difficulty sequencing syllables or letters in speaking and/or reading and oral spelling - iskool for school; ctapillar for caterpillar
- Written spelling slightly superior to oral spelling
- Prefers visual activities (art, sports)
- Has difficulty learning syllabication
- Silent reading is better than oral reading
- Comprehension of reading is below reading ability

Indicators of kinesthetic or motor difficulties

- Poor coordination
- Poor balance
- Does poorly on any pencil/paper task or will not attempt these
- Has inarticulate or mumbled speech
- Cannot remember how to write letters although can remember what they look like
- Poor pencil grip

Behaviours that the student exhibits more often than others in the class

- Upset by changes in routine
- Easily excitable, overreacts
- Behaviour unpredictable from one hour to the next
- Seems more immature than majority of classmates
- Considerable evidence of non cooperative behaviour
- Relates poorly to other students
- Appears generally unhappy

- Easily frustrated in social situations
- Impulsive behaviour, poor self-control
- Day dreams, sometimes seems in another world, withdraws
- Does not seem to be able to perceive thoughts and feelings of others
- Aggressive, irritable then remorseful
- Aggressive, not remorseful, remains angry
- Does not seem to profit from previous experience; repeats same inappropriate behaviour
- Is often unaware that his/her behaviour is annoying to others
- Erratic (some days alert, other days not)
- Seldom completes assignments in the allotted time
- Requires more individual teacher's time than can be offered
- Does not follow directions independently
- Easily upset or frustrated by academic activities
- Unable to sit still, inattentive
- Sluggish, complains of being tired

Name & address of the school with contact phone number :

Problems faced by teachers while teaching English

- 1.
- 2.
- 3.
- 4.

Remarks of the teacher :

- 1.
- 2.
- 3.
- 4.

Signature of the teacher

NATIONAL INSTITUTE FOR THE MENTALLY HANDICAPPED
Secunderabad

DEPARTMENT OF SPECIAL EDUCATION

Project: "Development Of Learning Package for education of children with learning problems in regular schools"

Screening Checklist for Primary School Students - Hindi

विद्यार्थी का नाम : मूल्यांकन की तिथि :
आयु / लिंग :
कक्षा / ग्रेड :
शिक्षक का नाम :

केवल उचित मुद्दों का जाँच करें

दृष्टि प्रक्रिया से संबंधित कठिनाइयों के सूचक

- समान अक्षरों या शब्दों, जैसे आप / आम, आदि को पहचानने में भ्रमित होता है या देरी करता है
- अक्षरों को या शब्दों को उल्टा लिख देता है जैसे प-त, ज/च
- शब्दों में अक्षरों को इधर-उधर लिख देता है, जैसे अनिता, अतीना लड़की-लकड़ी
- कला और चित्र लेखन - अपरिपक्व या विवरणात्मक नहीं होते हैं।
- सुनकर करने वाले कार्य को पसंद करता है, जैसे कक्षा में चर्चा करना, या अन्य मौखिक क्रियाकलाप
- निर्देश पढ़कर करने वाले क्रियाकलापों में अच्छा प्रभाव नहीं दिखाता
- पेन्सिल या पेपर कार्य, तथा / या रूम या भवन में चलते समय दायों / बायों पहचानने में गड़बड़ करता है।
- सप्ताह के दिन या साल के मौसम को क्रमवार याद करने में मुश्किल होता है।
- ग्रॉफ, मैप, ग्लोब और जमीन का नक्शा पढ़ने में असक्षम है।
- दूरी निर्णय करने में कठिनाई होती है।
- लिखते समय अक्षर और / या शब्दों के बीच का स्थान देने में कठिनाई
- शब्दों को लिखते समय एक अक्षर की जगह दूसरा अक्षर लिख देता या किसी अक्षर का लोप होता है, जैसे, सावधान - साबधान, परिचय-परिचय, गरम-गरम, प्रकाश-प्रकाश, अवलोकन-अवलोकन, आदि
- हिन्दी के श, ष, स, ह, क्ष, अक्षरों में अंतर पहचानने में कठिनाई होती है।

सुनने की प्रक्रिया से संबंधित कठिनाइयों के सूचक

- आवाज़ की दिशा को पहचानने में कठिनाई
- बोलचाल की भाषा में वाक्यों का सही प्रयोग नहीं करता जैसे, राम आम खाता है के स्थान पर राम है खाता आम।
- उम्र के अनुसार स्पष्ट बात नहीं करता है।
- बहुत कम बात करता है/ ज्यादातर खामोश रहता है।

- बोलने के लिए शब्दों को ढूँढ़ने में कठिनाई; संज्ञा शब्द की जगह चमतलबछ/ च्यानी च जैसे शब्दों का प्रयोग करता है।
- विचार या भाव को मन में संगठित करके व्यक्त करने में समय लेता है या कठिनाई महसूस करता है
- पूर्ण वाक्य की जगह छोटे-छोटे वाक्य या शब्दों का प्रयोग करना पसंद करता है।
- व्यंजन का ध्वनि में अंतर नहीं कर पाता है। शाम के लिए राम सुनता है, रानी के लिए नानी सुनता है।
- छोटे स्वर ध्वनि को सीखने में या अंतर बताने में कठिनाई होती है, जैसे अ,इ,उ, आदि।
- कोई शब्द पूर्ण रूप से उच्चारण नहीं कर पाता है, एक-एक अक्षर को तोड़कर पढ़ता, जैसे किताब के लिए कि-ता-ब।
- लिखे हुए शब्द के ध्वनि को पहचानने में कठिनाई, जैसे क, कृ, ल्व
- एक दूसरे से जुड़े शब्द या संयुक्ताक्षर को सही ढंग से नहीं बोल पाता, जैसे, सत्य के लिए स त य कह देता।
- ध्वनीय (Phonetic) शब्द की अपेक्षा में लिखे हुए, बार-बार देखे जाने वाले (sight) शब्द को सही पढ़ता है
- क-ख, ग-घ, जैसे अक्षरों के बीच अंतर नहीं बता सकता है।
- अक्षरों को क्रम में सजाकर बोलने, पढ़ने और उच्चारण में कठिनाई होती है, जैसे, रानी-नारी, चम्मच-चमचम, आदि।
- बोले हुए शब्दों को लिखते समय अन्य मात्रा को भी जोड़ देता है या मात्रा नहीं लगाता है।
- दृष्टि संबंधित क्रियाकलाप (खेल-कूद, चित्र लेखन) में अधिक रुचि दिखाता है।
- शब्दों के उच्चारण को सीखने में कठिनाई होती है।
- उच्चरित(Oral) पढ़ने की अपेक्षा में मन में अच्छा पढ़ता है।

स्पर्श या गति संबंधी समस्याओं के सूचक

- कमजोर समन्वयन
- कमजोर संतुलन
- पेपर / पेन्सिल से संबंधित कार्य अच्छा नहीं करता या ऐसे कार्य करता ही नहीं
- अस्पष्ट या बुदबुदाहट वाक्
- अक्षरों की आकृति याद रख सकता है, परन्तु उसे कैसे लिखा जाए, याद नहीं रख सकता है।
- पेन्सिल पकड़ने में कमजोरी
- सुनते समय हिन्दी के श, ष, स, ह, क्ष, अक्षरों में अंतर नहीं मालूम होता है।

ऐसे व्यवहार को चिह्नित करें जिसे छात्र दूसरे छात्रों की अपेक्षा ज्यादा करता है।

- रोजमर्राह में कुछ बदलाव होने पर उदास हो जाता है।
- जल्दी उत्तेजित होता है या अधिक प्रतिक्रिया करता है।
- एक घंटे से दूसरे घंटे के दौरान व्यवहार का अंदाज़ नहीं लगा सकते हैं।
- दूसरे सहपाठियों की अपेक्षा अपरिपक्व है।
- सहयोग नहीं देने की व्यवहार प्रस्तुत करता है।

- स्वयं को दूसरों की तुलना में उपेक्षित पाता है।
- ज्यादातर उदास रहता है।
- सामाजिक परिवेश में जल्द ही कुंठित हो जाता है।
- विच्छिन्न व्यवहार, स्वयं पर पूर्ण नियंत्रण नहीं होता है।
- दिन में सपने देखता है, ज्यादातर दूसरी दुनिया में खोया रहता है।
- दूसरों के विचार और भावनाओं को समझने में सक्षम नहीं लगता है।
- कक्षा के नियमों का पालन नहीं करता है।
- लड़ाई करने का व्यवहार करता, चिड़चिड़ा रहता है फिर बाद में पछताता है।
- लड़ाई करने की व्यवहार करता, पछताता नहीं और क्रोध में ही रहता है।
- पिछले अनुभव से सीख न लेकर पुनः वही गलती करता है।
- अक्सर यह नहीं समझता कि अपने व्यवहार से दूसरे तंग हो रहे हैं।
- चंचल (एक दिन कार्य पर ध्यान रखता, दूसरे दिन नहीं)
- हिन्दी लिखते समय और/ या बोलते समय लिंग के प्रयोग में गड़बड़ कर देता है।
- किसी कार्य को दिए गए समय में पूरा कभी-कभी करता है।
- शिक्षक के व्यक्तिगत ध्यान का अपेक्षित समय से अधिक ज़रूरत होती है।
- निर्देशों का अनुपालन स्वतंत्र रूप से नहीं कर सकता है।
- पढ़ने /लिखने के कार्यों में जल्द ही उदास या चिड़ जाता है।
- एक जगह बैठकर कर कार्य नहीं कर पाता, किसी कार्य पर ध्यान नहीं देता।
- सुस्त रहता है और हमेशा थक जाने की शिकायत करता है।

विद्यालय का नाम, पता और फोन नंबर:

_____ (विद्यार्थी के नाम) को हिन्दी पढ़ाने में शिक्षक की समस्याएँ।

- 1.
- 2.
- 3.
- 4.

शिक्षक के टिप्पणी:

- 1.
- 2.
- 3.
- 4.

शिक्षक के हस्ताक्षर

**NATIONAL INSTITUTE FOR THE MENTALLY HANDICAPPED
Secunderabad**

DEPARTMENT OF SPECIAL EDUCATION

**Project: "Development Of Learning Package for education of children with
learning problems in regular schools"**

Screening Checklist for Primary School Students - Maths

Name of the student : _____ Date : _____
Age/Sex : _____
Class/Grade : _____
Name of the Class teacher : _____

- Has difficulty in differentiating concepts such as big/small, long/tall short, thick - thin, far - near, more - less, heavy - light.
- Has difficulty in differentiating shapes such as square, circle, triangle and rectangle.
- Has difficulty in demonstrating when asked to count numbers in a sequence.
- Reads incorrectly when the numbers are written at random.
Eg:- 29 as 92, 32 as 23; 29 as two - nine, etc; any other).
- Writes incorrectly when numbers are dictated at random.
- Makes errors in calling out the days of the week and months of the year in a sequence or when asked at random.
Eg:- what comes after Thursday/what comes before June
- Has difficulty in finding out a particular month, day and date from a calendar.
- Gives incorrectly when asked to give a required number of objects from a group of objects.
- Has difficulty in converting numerals into number words and vice versa.
- While writing reverses/inverts numerals such as 7, 3, 9.
- Writes numerals as they are pronounced.
Eg:- 34 (304).
- Confuses between the signs of less than (<) and greater than (>).
- Exhibits difficulty in arranging numbers in ascending and descending order.
- Exhibits delay to respond when simple questions are asked ($4+2=?$; which number comes after 29 —).
- Always counts fingers/draws lines to add/subtract
- Has difficulty in finding out the place value of a particular digit in a given number.
Eg:- place value of 8 in 4382 or 0 in 3056.

- Aligns towards left during computation.

Eg;-
$$\begin{array}{r} 322 \\ 42 \\ + 204 \end{array}$$

- Confuses between the arithmetic signs (+, -, \times , \div).
- Confuses with the place value of 0 in computation (+, -, \times , \div).
- In addition, does not carryover/carries over to the wrong place -(any other - specify).
- Has difficulty in subtraction with and without borrowing.
Eg: borrows from the wrong digit, ignores 0/forgets to reduce from the borrowed digit.
- In multiplication, exhibits difficulty in long multiplication (wrong alignment).
- In division, ignores/confuses with quotient and remainder.
- Has difficulty in demonstrating when asked to identify the coins and currency notes.
- Has difficulty in reading time by hour, half hour, quarter hour and 5 minutes.
- Has difficulty in calculating the duration of time.
Eg:- 9 a.m to 3 p.m - how many hours/concept of 10 min/20 min for a given time.
- Has difficulty in finding out a particular month, day and date from a calendar.
- Always complains of having difficulty in maths.
- Distracted/inactive or does not show interest during math class.
- Copies from other students in the math class or finds excuses to avoid math.
- Recites the tables, but does not apply when needed, such as in the statement sums.
- Has difficulty in selecting the correct computations in the statement sums.
- Needs assistance to comprehend the statement sums.
- Has difficulty in mental computation, whispered counting is present.
- Selects the incorrect algorithm. (subtracts the smaller number from the bigger number).
- Difficulty to do 2 to 3 step computation in statement sums.
- Exhibits difficulty in understanding the concept of profit and loss when solving statement sums.
- Is careless in computation.
Eg:- While copying from rough to fair.
- Has difficulty in understanding fractions as in, sums involving LCM.
Eg:- full, $1/2$, $1/3$, $1/4$ and so on).
- Confuses in identifying the numerator and denominator in a fraction.

- Exhibits problems while computing fractions.
Eg:- $1/2 + 3/8$, $3/4 - 1/2$ so on..
- Exhibits difficulty to comprehend abstract concepts in geometry while using the geometrical instruments.(degrees).
Eg:- 60o, 90 o, 180 o.
- Exhibits difficulty in differentiating the radius, diameter and chord of a circle.
- Confuses between the concepts of acute, right and obtuse angles.

Name & address of the school with contact phone number :

Problems faced by teachers while teaching English

- 1.
- 2.
- 3.
- 4.

Remarks of the teacher :

- 1.
- 2.
- 3.
- 4.

Signature of the teacher

Remedial tips

Frequency count of the difficulties as noted by the teachers on the checklist were compiled separately for Hindi, English and Maths and were rank ordered. Tips and techniques for correction were compiled and/or developed for various frequently found learning difficulties. After having been tried out on children and proven effective, these techniques are included in this handbook under the section on “Deficit level instruction” in the respective chapters of teaching Hindi, English and Mathematics.

Assessment

Assessment is the process of eliciting information through various methods to confirm or negate a condition as well as to find out the current level of functioning including strengths and limitations.

To assess a child, two major types of testing are done - (a) Norm Referenced Testing (NRT) and (b) Criterion Referenced Testing (CRT).

NRT are usually standardized tests, which help to compare a child with other children and establish his/her status in relation to others. For example, class tests and ranking children, IQ testing (intellectual assessment) measuring heights and weights are all NRTS, as they compare the measurement of each child with the norms. NRTs also lead to diagnostic labels. Some of the western achievement tests used for children with learning problems include:

- Peabody Individual Achievement Test (PIAT).
- Wide Range Achievement Test (WRAT).
- Kaufman Assessment Battery for Children (K-ABC).
- Brigance Diagnostic Inventories.

- Bender Visual Motor Gestalt Test.
- Wepman Auditory Discrimination Test.
- Developmental Test of Visual Motor Integration.
- Peabody Picture Vocabulary Test.
- Woodcock Johnson Psychoeducational Battery.

These tests are standardized on western population and hence more appropriate for them.

Some of the suitable screening and assessment tests for use by teachers developed in India include:

- Diagnostic Test of Learning Disabilities (S.Swarup & D.Mehta).
- Behavioural checklist for screening the learning disabled (Swarup & Mehta).
- Grade Level Assessment Device for children with learning problems in primary schools (J.Narayan).
- Arithmetic and Diagnostic test for primary school children (Ramaa, S.).

CRTs are used for finding out current level of functioning. They are also known as informal tests, as they are constructed by the teacher. The teacher sets a criteria and tests the child to find out if he/she achieves the criteria. For instance, ‘ability to do 2 digit 3 line addition with carry over’ can be a criterion and the teacher can give a number of sums involving this operation and find out the ability level, error pattern if any and so on. Therefore, CRT helps in finding out strengths and needs of a students to plan educational programme suitably. For a student suspected to have learning problems, both NRT and CRT are essential. A well trained teacher will use the assessment information for effective planning of instruction.

Tests can be in the form of checklists, rating scales, objective type or paragraph responses to questions, observations, interviews and formal timed tests by qualified practitioners.

An example of CRT

Criteria: When given exercises to fill the blanks with appropriate pronouns, the student will write correctly.

Exercise:

Fill in the blank with suitable pronoun:

1. Seeta is a girl. _____ is studying in II Class.
2. My parents are not at home. _____ have gone to Mumbai.
3. Mother gave me a pen. Now, it is _____ pen.
4. There is a coconut tree in the park. _____ is a tall tree.
5. Ramu did not go to school. _____ is not well.

Similar tests should be constructed for each criterion and the result should be used for appropriate programme planning.

Terminology

Generally, the terms testing, assessment, evaluation and measurement are found to be interchangeably used. The terms, however, have subtle differences and specific purpose.

Assessment is a process of obtaining information through various modes to assign value (Grade, Diagnosis) to the performance and to plan educational programme.

Evaluation is done after implementing the educational programme (class tests and exams) to find the efficacy of teaching. It includes processes involving testing and measurement.

Testing is a process of using a set of questions to be answered written or verbal, through varied devices (interviews, written tests, rating scales, projects, checklist, observation) to obtain information with a predetermined goal.

Measurement is the process of assigning numerical index to the data obtained through testing/assessment/evaluation, which helps in quantifying data. This helps in comparing the performance of one student with another, or compare one's own performance to his earlier performance.

In essence, assessment is done in the beginning to find out the diagnosis, strengths and needs of a student, while evaluation is done periodically to find out the efficacy of teaching. For both, assessment and evaluation, the process involves testing and measurement.

In early years, education followed a medical model leading to usage of terms such as 'remedial education', 'clinical teaching', 'diagnostic prescriptive teaching' and so on. However, with its own identity, educational terminology has evolved, and currently resource education or resource room teaching has become popular. The qualified teachers teaching such children with learning problem are known as resource teachers.

The educational assessment process:

1. Check the child's hearing, vision, motor abilities and refer for assistance if needed.
2. Gather data on emotional, cultural, environmental aspects.
3. Assess behaviour: Some of the associated characteristics of such children are one or more of the following: hyperactivity, perceptual-motor impairment, attention disorders, impulsivity, disorders of memory, problems in orientation to time

and place, disorders of thinking and disorders in speech in addition to poor performance in scholastic areas.

4. Assessment of current level of achievement: As per the age and exposure to school the child may be attending a class while his achievement level in one or more subjects is below the expected level. Hence, the teacher should assess his achievement in reading, reading comprehension, writing, spelling, arithmetic computation and arithmetic reasoning. Comparing the results with the expected level of achievement will provide the extent of discrepancy in the child's learning.

This information is important for the teacher as it provides the platform for further planning of educational intervention.

As pointed rightly by Wallace and McLoughlin (1975) the trend in assessment is to be preventive rather than totally remedial, more predictive than demonstrative and more developmental than crisis intervention. Therefore, early identification, diagnosis and educational intervention is very crucial for children with learning problems.

Teacher competency in resource education

Effective resource teaching depends largely on teacher competency in areas including:

- carrying out objective assessment.
- ability to interpret assessment information for instructional planning.
- selection of variety of activities to meet the instructional objectives.
- development of suitable teaching learning material (TLM).

- awareness of learner readiness level, motivation and learning style.
- structuring learning environment.
- use of appropriate strategies for one to one instruction, small group and large group instruction.
- continuous monitoring of student's performance.
- use of effective evaluation methods.
- coordination with parents, regular class teachers in planning, executing and evaluating the programme.
- preparation of peer group for activities like peer-tutoring and cooperative learning.
- using assessment information for resource teaching.

Assessment information gathered include general and specific information. **General information** consists of details about the students elicited from school records, parental observation, psychological assessment and teacher's report. **Specific information** refers to the information on educational assessment reflecting his strengths and limitation that will help directly in planning educational programme.

While general information is necessary to get an insight into the overall profile of the student, the resource teacher will largely use the findings of the specific educational tests for remedial planning. A justified blending of general and specific information will help in individualized programme planning of the student. This programme is popularly called IEP - Individualized Educational Programme.

Steps in planning individualized instructional plan

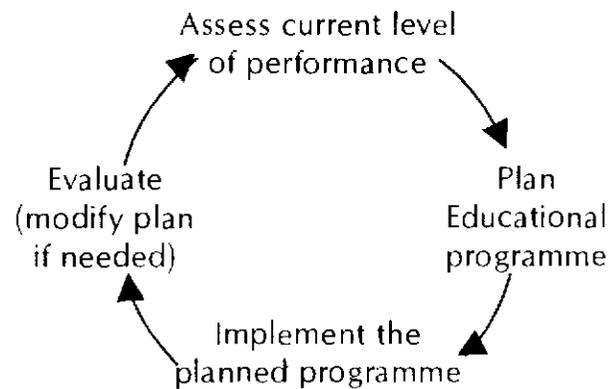
- Carefully go through the general and specific assessment information.

- Select information relevant for teaching learning situation.
- If the child is suspected to have hearing, vision motor or intellectual deficits or emotional problems, refer to appropriate specialist.
- Observe the student over a period of time to identify his learning style.
- Based on the gathered information select priority goals for teaching in the subjects showing poor performance.
- Convert priority goals into specific objectives, which will clearly indicate:
 - a) under what circumstances,
 - b) what the student will learn,
 - c) to what level of performance,
 - d) after teaching for how long

For example :

- a) when given a paragraph in English of Class III level
 - b) the student will read and write answers to questions given below the passage
 - c) with 80% accuracy
 - d) after teaching for one month
- Identify procedure and activities to teach the student.
 - Teach the student sequentially after breaking down each task into smaller steps, using appropriate teaching learning material.
 - Carry out systematic periodic monitoring - note errors, analyze and find the error pattern and remediate.
 - Evaluate and quantify progress, isolate areas that have not shown progress, analyze possible reasons and modify teaching method.
 - This will lead to new teaching plans.

Resource teaching or remedial teaching is a continuous process with testing and teaching linked to form a cycle as shown below. This was also known as clinical teaching cycle earlier.



Management of secondary problems arising due to poor academic achievement in students with learning problems

Teachers often find almost all children with learning problems exhibiting certain specific behaviours, which are not desirable (See screening checklist). These behaviour problems add to the difficulty in correcting academic deficits. Teachers are at a loss to help such children and seek help from specialists. Such behaviour may include 'inability to sit at one place/complete tasks', 'act out in class to get attention', 'tell lies/steal to get peer group approval', or be withdrawn, lack self confidence or be a revolt and perform activities which will embarrass parents or teachers.

There are a variety of techniques which can be applied in classroom by a competent teacher to correct the problem behaviour. Most of the techniques are derived from the principles of operant conditioning (Skinner, 1953). Simply, behaviour management refers to **any systematic arrangement of events for the student with the intention to produce desired behaviour in him.**

Encourage students to set their own goals.

In recent years, cognitive behaviour modification has gained importance, which gives importance to thoughts and feelings of the students, as well as enhances thinking skills in him.

While attempting to help the student in modifying undesirable behaviour, remember:

- not to modify all problem behaviours at one time. Start with one or two very critical ones.
- Identify a desirable behaviour to substitute the undesirable one. By this, you will use less 'don'ts' and more appreciation for the 'do's' that he has newly learnt.
- Reward the student immediately for the performance of desired behaviour. To give a reward, know what pleases each child - ranging from smile or pat on the back to his favourite music. Use your wisdom in selection and delivery of the reward.
- Let the student know what the consequence will be if he exhibits undesirable behaviour and with his consent execute the plan. It is good to have written contract with the student which will help him to consciously reduce undesirable behaviour, as well as increase desirable ones.
- Do not use expression like 'you are a bad boy'. Instead, say what was bad. For example say, 'you have littered on the floor', 'your handwriting is shabby' or 'you are late'. In other words, let him know that he is not disliked/bad but his act is.
- If a student is evading academic work, enter into contract with him so that he is made responsible. Pin it up in class so that he is aware of consequences of his behaviour.

Remember to reward successful task completion.

Sample contract form

Name of the student: K. Ramanan

Date: 6-8-03

Class: III

Subject: English

Time: 10:00 AM

Teacher: Ms Sudha

I will complete the following tasks:

1. Read the passage teacher gives me and write answers to questions.
2. write dictation with less than three errors.
- If I complete these & successfully I get extra time ^(30 mins) to play carrom.
- If I complete one only, I should complete the other with extra exercise.
- If I make a lot of mistakes (passage more than 6, dictation more than 3)
- I will have to do the tasks 2 times again.

agreed
Sudha
Signature of the student

Ramanan
Signature of the teacher

Guidelines for correcting problems in academics

As mentioned earlier, at task level and deficit level, teaching strategies are elaborately given in the respective chapters of teaching Hindi, English and Mathematics. A few general guidelines, which are common for all the subject areas are described here.

- Begin teaching at a level, where the child is competent and therefore, at the end of the first teaching learning session, he will experience a sense of success. This will motivate him to learn further and will also establish rapport between the resource teacher and the student.

- Simplify the teaching by starting with **concrete** activities later move **to abstract** concept learning.
- Break the task into smaller steps. Teach starting from simple steps and slowly move to complex tasks. This is called **task analysis**.
- Allow him time to **think** and respond. Do not hurriedly provide solution to the problems. Let him work out and find solutions.
- Reward him for achieving every new step, that is, one step towards achieving the overall goal. This is called 'shaping' - reinforcement of successive approximations.
- Develop the **contract** for tasks (see sample) with the student. Allow him to set rules where possible, do not impose rules, which may demotivate him.
- **Structure** the classes with careful planning. Have the lessons and teaching learning material ready before the class starts. Expose one material at a time to avoid distractions.
- Give opportunities to other students in class in rotation to help the child having learning problems. Studies have shown that **peertutoring** is a very effective method to help children learn. Clearly delineate the role of the peertutor, train the tutor and supervise until the tutor-tutee interaction is satisfactory. Reward both of them for successful completion of tasks.
- Another way of involving other children in the class is through the technique called **cooperative learning**. By this arrangement the class group is divided into small groups

with each group having a combination of high achievers, average achievers and low achievers. Together they have to work to complete the given task. This helps the child with learning problem to not only improve academically but also improve his social skills. The regular class teachers can effectively involve all her students by this method.

Tips for management of attention deficits and hyperactivity:

- Keep external distractions as minimum as possible. Let the student sit facing the inside of the classroom and **not** the windows or door.
- Experience shows that darker coloured background such as gray, dark blue or dark green on which if the task or information is presented in contrast colour, the students with ADHD attend better and longer.
- Maintain eye contact with the student while giving instruction.
- Give instructions clearly and telegraphically rather than in long sentences.
- While teaching, highlight important points to be attended to verbally by using cues such as 'Remember the four points are....', 'Take a note of,', 'the key point here is,.' And so on. Simultaneously, help the student to highlight in the notebook by underlining, starring or by use of highlight markers.
- When there are distractions, ask the student himself what needs to be attended to.
- Begin with activities of his interest, when attention is sustained longer, gradually introduce, activities **you** want him to learn.

Approaches for correcting learning problems in children

As learning problems are also known as 'hidden disability' a number of approaches are tried out with the view to help the children learn better. A few popular ones include perceptual motor training, behavioural approach, multisensory approach and cognitive approach.

Perceptual motor training

Historically, the learning problems in children were attributed predominantly to perceptual motor deficits. The contribution of Kephart (1971), Getman, Ayres (1971) and Cratty (1971) as noted by Gearheart (1986) that training to improve perceptual motor functions, will help the child in matching perceptual information he receives to the earlier motor information. To improve the perceptual motor functions the activities suggested include, use of balance board and walking board, fine motor activities, auditory-motor match, rhythmic activities and symbol recognition. Laterality, directionality and body image are important areas dealt within this approach. Also, this approach suggests that modifying learning environment to reduce distraction improves learning.

Multisensory approach

This is a widely used approach among children with learning problems. Historically, this approach was used by Madam Montessori on children with mental retardation. But today, we find the approach popular for teaching children in regular schools. As the name implies this approach involves training through more than one sense. VAKT approach introduced by Grace Fernald is a popular method that uses more than one sense of the

children to learn.

Visual Auditory Kinesthetic Tactile (VAKT) approach of Fernald (1921) involves the following steps.

- Establish rapport with the child through positive reconditioning - that is, not embarrass the student by focusing on his deficiency while talking.
- Allow him to select a word, may it be any word.
- Let him trace with fingers the whole word, which is written in cursive writing, saying the word loudly. 'Feeling' the word with the finger tip is important.
- Let him then write with pen/pencil.
- Add more words in similar manner.
- When a number of words are thus learnt, let him write a story using these words.
- Type the story and allow him to read the story. By this, he sees, says, hears and feels the word. Therefore, it is called VAKT.

Motivation level will stay high in the student, as he has chosen the words. This also increases the vocabulary.

Behavioural approach has already been discussed and cognitive approach is discussed in detail under study skills.

A good teacher will use a combination of approaches, taking the essence of each approach. It is also essential that she matches her selection of approach to the learning style of the student. Thus, it may vary for different students. A systematic, well planned class by a competent, updated teacher will make a world of difference in the learning of her student.

ORGANIZATION OF RESOURCE ROOM

CHAPTER-IV

ORGANIZATION OF RESOURCE ROOM

Children with specific learning problems will continue to study in regular schools along with other children. However, the fact remains that they need supportive educational services. This can be provided, by organizing resource rooms in regular school. The resource room ideally should have a trained teacher for educating low achievers and should have suitable materials and competencies to teach them. She should not only train the children in need, but also coordinate with the regular class teacher in educating these children. Such resource rooms are of importance because:

- They help in meeting the objective of including children in regular school and achieving the goal of 'Education for all'.
- Better academic achievement by low achievers.
- Acceptable social behaviours and improved self-esteem, among the children, who have learning problems.
- Individualizing instruction as well as integration with larger group becomes a possibility.
- A large number of children who are school dropouts can be brought back to school thus taking one step towards achieving the goal of Sarva Sikha Abhiyan.

A resource room is a class set up in a general school that provides a student with special assistance or coaching in those areas in which academically he is 'weak' and faces learning problem.

Educational facilities

| Type | Facility | Suitability |
|---|--|--|
| Residential Institution (Not recommended unless absolutely essential) | Total Care 24 Hours Segregated set-up | When special or integrated education facilities are not within reach |
| Special School | Day Care Segregated set-up | Mild, Moderate and Severe MR |
| Special Class in Regular School | Day Care Partially integrated for non academic programmes | Mild and Moderate MR |
| General School with Resource Room | Integrated in regular class and partially segregated for specific academic programmes | Slow learners Specific learning disabilities |
| Itinerant teacher | Regular school/ Home set-up - the special teacher goes to school/ home to train regular teacher/ parent to train the child | In places where there are no special or integrated education facilities available |
| Home based training | Parents are trained through demonstration to manage their children at home | Early intervention Profound retardation Immobile, non ambulatory children Where special education facilities are not within reach |

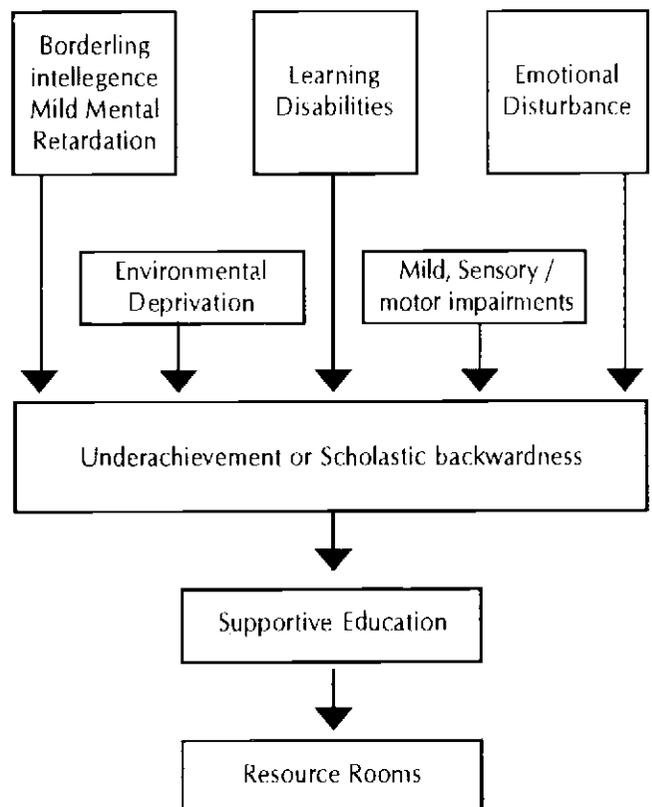
A resource room is staffed with a special/ supportive teacher who is professionally qualified to assess and prepare educational programmes for children who are referred to her. After identifying their strengths and limitations she will have specific educational methods and materials to educate the children who come to her.

A child who requires education in a resource room will typically have problems in specific subjects. During those classes, he/she would go to the resource room and benefit from the supportive education programme given there. During the rest of the time, he would attend classes with other children of his class.

Advantages of resource room

- Children with special needs are not totally segregated from the mainstream of education.
- The specific educational needs of the children are met by resource rooms.
- It is easier to set up a resource room in primary schools.
- Organization and maintenance of a resource room is less expensive than that of special schools or special classes.
- Resource rooms can cater to a large number of children with educational problems.
- Resource rooms, when appropriately established and staffed, can suitably meet the needs of those children who find it difficult to cope with academic work in regular classes.
- The load on regular class teacher is reduced.

Children requiring resource room facilities would include, those with borderline and sometimes mild mental retardation, mild sensory impairments, specific learning disabilities, emotional disturbance and oftentimes those with social and/or cultural deprivation. Children with sensory impairments such as visual impairment or hearing impairment may also benefit from the resource room for certain classes. For example, it is the practice in some schools, to use visual aids such as maps in the geography class. A child with visual impairment, can attend geography class in a resource room where the resource teacher would teach him using embossed maps. For the other subjects he may attend regular classes.



Suitable conditions for education in resource room

Functions of resource room

The duration of the need for resource room education is not uniform for all children. This largely depends on the specific learning problem the child encounters. Some children may require it all through their schooling period for specific subjects, while some may require it only for a short while. The latter is true of children with cultural deprivation i.e., when the child moves from one city to another and is admitted to a new school, the medium of instruction or style of teaching and such other factors might influence the child's learning ability, showing him to be an underachiever. Supplementary or supportive education in the resource room by an efficient resource teacher will help such a child to overcome the learning difficulty relatively early and put him back in the regular class for 100% of the time to learn like other children. On the other hand, a child who is a slow learner, for instance, with problems in arithmetic, might need assistance from resource room for a prolonged period.

In elementary schools, where the lessons are simpler and concrete the child with a problem in learning may seem to cope with the load. If he fails, the ridiculing comments by the peers and sometimes the teachers and parents may lead to the development of an inferiority complex and poor self-esteem in the child, leading to secondary psychological problems. In spite of these, if he is allowed to continue in the regular educational stream and promoted to higher classes, he is bound to face frustration due to his inability to cope in the class. He would not benefit from the school but may turn out to be a school drop out or a problem to the family.

If, on the other hand, the learning problem is identified early in his life and appropriate supportive education given, he might be able to receive the right kind of education leading to a successful future.

Organization of a resource room

In most of the developed countries the school systems have provision for resource rooms. The university education has teacher training programmes for resource teachers. The law also provides for appropriate education for all children and therefore, once identified, the children are thoroughly assessed and programmed accordingly for their suitable education.

In India, in recent years, special education, integrated education and inclusive education are in focus, and resource rooms are now slowly gaining importance. Due to lack of trained staff and other resources, such a facility has not been established widely. Efforts are being made by voluntary organisations and the government to set up resource room facilities in the school system to cater to the needs of the target population.

There are certain steps involved in organizing resource rooms.

- Sensitization of the Principal and others in charge of administration in general school, regarding the need and implications of a resource room.
- Identification a resource teacher.
- Orientation of the teachers of the school regarding the establishment of resource rooms.
- Establishment of the resource room.

- Coordination of the functioning of resource room and regular classes.
- Assessment, recording and programming for children requiring resource room education, and periodic monitoring.

Orienting administrators of the general school

All general schools follow an educational system required by the Central Board or State Board of school education.

This, to a great extent has established a uniformity thus enabling students to opt for higher education in the university, no matter in which school they have studied. The school system also tends to follow a rigid pattern to meet the requirements of the Board and any proposal for the introduction of anything new in the existing system would initially face resistance from the authorities. The fear that the new programme might hamper the regular programme is the major cause for this reluctance. Therefore, the first step towards establishing a resource room is to orient the administrators and convince them regarding the need for a resource room.

The points to be highlighted while briefing the administrators should be the physical arrangements, the equipment needed, the human resource to run the resource room, available government aid if any, and the extent of involvement of regular school teachers and children if a resource room is established. The financial implications is an important aspect of concern for the administrators and that needs to be clearly explained.

Identifying resource teachers

A resource teacher should be qualified in special education preferably with emphasis on dealing with learning problems/difficulties.

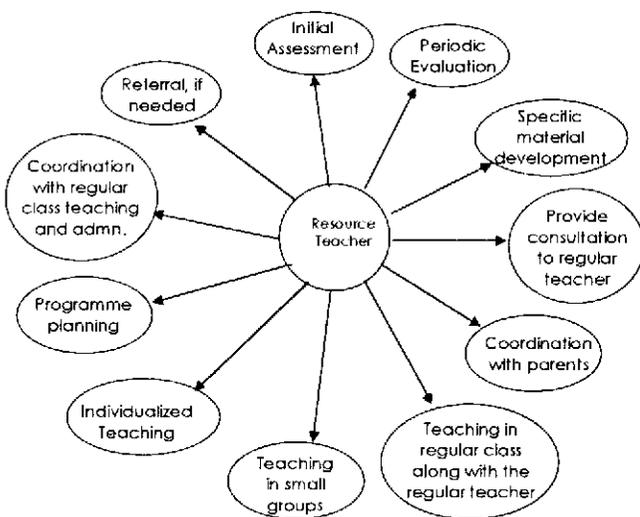
Most of the special education courses offered in India stress teaching children with a single disability. Training in multicategory special education is an experiment being tried out. In such a situation it is appropriate to select a qualified and competent special educator and orient him/her for resource room teaching. As the individual would already have a background in educating exceptional children, with initial assistance from master teachers in special education functioning as a resource teacher, will be possible. B.Ed. programme in learning disabilities and mental retardation cover various learning problems.

Role of Resource Teachers

1. Organisation of resource room.
2. Equipping the resource room with the necessary material for assessment and educational programmes. It is appropriate that she pools items for creating awareness regarding children requiring help and the possible services for them. This would enable her to educate parents, teachers, school authorities, peers and the general public regarding resource teaching. This is essential in a country like India where the concept of resource room is still new.
3. Assessment of children referred by regular educators.
4. Programming for the identified children in consultation with regular educator, parents, administrator and wherever needed, other professionals.
5. In addition to resource room teaching, it is her responsibility to team-teach with the general teacher. By this, the resource teacher becomes a peer coach to the general teacher and trains her to help the child with learning problems in the general

class room. For successful implementation of resource room teaching, coordination between general teacher and resource teacher is of utmost importance.

6. Maintaining records on supportive programme and periodic assessment, and communicating this to the persons concerned is an important role of resource teacher.
7. As a child receiving supportive education will be usually aware of his problem, he might have developed a poor self esteem. It is important that the resource teacher is sensitive to the feelings of these children and provides them appropriate guidance which would help them develop a positive attitude towards themselves.
8. The resource teacher has the responsibility of preparing peers in the regular classes in such a way to bring about desirable interaction among children.
9. Keeping himself/herself abreast of the trends and developments in resource education and apply the knowledge gained suitably is an essential part of a resource teacher's responsibility.



Role of resource teacher

Infrastructure

Every primary school should, ideally, have one resource room. It is not expensive to establish a resource room. A room of the size of a classroom - 15' x 20' will be suitable. If the school does not have enough space to have a resource room, space at the end of a corridor or corners which are not used daily can be converted into resource rooms with suitable partitions built as required. A built-in cupboard or an almirah will be suitable as storage space for teaching learning materials. The resource teacher will have to teach 5-6 children at a time and the furniture arrangement should be such that the teacher's desk and the black board are the focal points. There should be provision for children who disturb others, to be isolated. Individual study corners are suitable for this purpose.

The same corners can be used for visually impaired children to use their tape recorders without disturbing others. It is preferred to have individual desks and chairs so that the arrangement can be altered as and when needed for individualised instructions and group activities.

Resource Room

A table in one corner of the room with a few chairs or a mat which would allow children to relax and play a game or browse through a picture book of their choice, as a reward for having met the criteria is a necessity in the resource room. Schools which have funds can even provide music corners with headphones, to reward children.

Points to remember while organizing a resource room

- Good lighting and ventilation - no glare from the blackboard

- flexible furniture to arrange the room for various kinds of individual and group learning activities
- easy access of teacher to all students
- ample teaching learning material to use multisensory approach in teaching
- use of magnifying facilities where needed
- exhibition of progress record chart in the room so that the child can see his progress. Mark progress atleast once a week.
- use of teacher-made, relevant innovative games to enhance the academic learning.
- provision of reward corners to reinforce the child. Include games in the reward corner that can be played by a single child, two children or a number of them. Story books and picture books suitable for the children, puzzles and if possible music facility with headphone will be highly beneficial.
- provision of bulletin boards where the children themselves can exhibit pictures and writeups of various concepts taught.

The list of materials needed for the resource room are given at end of this book.

Instructional approaches in Resource Room

Resource rooms adopt instructional method using various approaches. Bender (1995) has listed four approaches namely, 1. Basic skills remediation, 2. Tutorial subject matter, 3. Functional skills, 4. Learning strategies.

Basic skills remediation: This approach places emphasis on basic skills, using material and methods to teach English and Maths, irrespective of the content structure as per the class. The intention is to correct the error the student tends to commit.

Tutorial method: A system popularly used by many teachers, where the remedial instructor teaches the subject area to the student as per the syllabus in addition to the teaching of the regular class teacher.

Functional skills: This is predominantly used with slow learners or children with mild mental retardation particularly focusing on essential survival skills.

Learning strategies: This method focuses on developing cognitive strategies and helping the student to recognize his strengths and needs and to organize self and learn. This is a good method for students with specific learning disabilities but requires teachers to have special training. Some tips are given in Chapter VIII.

Orientation and Training of Teachers of Regular Classes

As mentioned earlier, those children who for varied reasons, remain underachievers in their age appropriate classes, require assistance from resource rooms for their education. Therefore, it is the teachers in regular classes who are in a position to identify such children and refer them to specialists. To enhance their easy identification and referral to resource room teacher, a simple checklist with observable characteristics of such children becomes essential. This has been developed by NIMH, validated and is given in this manual for Hindi, English and Maths in Chapter III.

The regular education teachers should be sensitized to the individual differences among children and their learning style. As the children attending resource rooms will be in the class room of regular educator most of the time, it is important that she works in close coordination with the resource teacher and the programmes in the regular class and in the resource room are linked for continuity and generalization.

Where appropriate and feasible, the regular educator must be involved in the follow-up of resource teaching, and give feedback to the resource teacher.

Programming in the resource room

The resource teacher on getting a referral from the regular teacher should thoroughly assess the child for specific problems. This would include, obtaining information on medical and psychological evaluations, data on background information on family history, and other past interventions. The resource teacher would then assess in detail for the grade level functioning in various subject areas such as reading, reading comprehension, writing, spelling, arithmetic computation, arithmetic reasoning, general knowledge and problem solving ability. For this purpose tests as mentioned earlier (NRT and CRT) can be used, depending on the child. While assessing, the resource teacher would specifically look for the child's strengths and weaknesses, style of learning and the ability to reason and relate. Then she would record the current level of functioning explicitly.

After finding out the profile of the student, the resource teacher would carefully develop an individualized remedial programme and teach him/her accordingly. Periodic assessment is necessary for modifications in the programme based on the progress of the child. The resource teacher would keep the regular class teacher informed of the remedial programme and what needs to be done by him/her as a follow up in the class. As he is eventually in the regular classroom combined efforts of both the teachers are important.

Equipment

The materials needed in the resource room largely depend on the children utilizing the resource room. Whatever is the disabling condition the one most essential material is the prescribed books of various class levels. It is appropriate to have additional worksheets and exercises developed by the teacher for the lessons in the books to suit the various learning problems. She should also develop a number of aids for playway and project methods to teach concepts to them, as concrete learning experiences have proved to be more effective than abstract learning.

Use of systematic and appropriate reward and reinforcement is a definite need while educating these children with learning problems, and therefore materials for reward should also be maintained by the teacher. Following is a set of minimum materials needed for a resource room.

- Books of all classes from LKG onwards pertaining to all subjects namely English, Language, arithmetic, Science and Social Studies.
- A mini library consisting of books with pictures in various subject areas and relating to environmental studies and general knowledge. Constant updating of the library is a must.
- Models such as sense organs, mountain, globe, moon, sun and so on to give demonstration while teaching concepts through multisensorial input.
- Maps of all relevant items pertaining to the lessons including contour maps.

- Commercial and teacher made charts.
- Arithmetic aids - abacus, numerical rods, montessori, commercial and teacher made.
- Materials for drawing, painting, clay modelling and art and craft.
- Flannel boards.
- Story aids.
- Slide, overhead projectors and tape recorder.
- A computer is an added advantage.
- puzzles, individual and group games, story books suitable for various levels, picture books and magazines, comics.
- Wall clock and time pieces.
- Balance board.
- Out door games.
- Simulated shop with items like stationery and chocolates, sold - money of all denominations.
- Material and stationery for teacher-made aids.

As it can be seen, the setting up of a resource room in a general school is a relatively simple exercise when the utility of it is considered with regard to the number of children who would benefit from it. Many children who would be otherwise shunned and labelled 'dull' and 'fit for nothing' will turn out to be quite efficient. The world famous Albert Einstein and Thomas Alva Edison were once turned down as unfit for learning by the school system. But the individual efforts of the family members and the concerned people brought out their worth and thus we are now enjoying their contribution to the world. By setting up resource rooms many such bright children's worth can be realised. Isn't this a worthwhile effort?

TEACHING ENGLISH

CHAPTER-V

TEACHING ENGLISH

The nature and acquisition of language

Language has been as one of the greatest human achievements. Language is unique to human beings. It provides a means of communicating and socializing with other human beings.

Language exists in several forms – oral language (listening and speaking), reading and writing. All are linked and integrated through an underlying language system. Early experiences in listening, talking and learning about the world provide the foundation for reading. Through experience in oral language, children learn to expand their vocabulary.

By becoming familiar with the sounds of language, children develop a language base for reading. Poor readers who lack the knowledge of phonological sounds need specific practice with oral language.

Hence, it is important to consider language as a whole system. As the child grows, language plays an important part in the development of thinking processes and the ability to grasp abstract concepts.

Meeting the special needs of children – discrepancy between intellectual ability and actual performance :

Experienced teachers will be able to recognize children and adolescents who seem bright but who fail to do well in a particular skill even after repeated exposure to training.

For instance, if the skill is reading, the child may read aloud quite well but may have great difficulty with comprehension during silent reading. Another child may become confused when directions are given orally but shows comparative superiority in reading and writing.

Some children show differences in their intellectual ability and their performance. These problems involve understanding and use of spoken or written language and are seen as difficulty in listening, talking, reading, writing and spelling. These problems range from mild to intense. However, these difficulties are found in mild degree in individuals who are otherwise "normal".

Hence, an educational program must be prepared by a teacher depending on the

individual child's educational needs and behaviors.

English language

It is estimated that there are 300 million native speakers of English and 300 million who use English as a second language and a further 100 million use it as a foreign language. It is the language of science, aviation, computing, diplomacy and tourism. It is listed as the official or co official language of over 45 countries and is spoken extensively in other countries where it has no official status. English plays an important part in the cultural, political and economic life of countries including Australia, Canada, India, Ireland, Jamaica, New Zealand, South Africa, United Kingdom and United States of America.

Half of all the business deals in the world are conducted in English, two thirds of all scientific papers are written in English, over 70% of all post / mail is written and addressed in English and most international tourism and aviation is conducted in English.

The history of the language can be traced back to the arrival of three Germanic tribes to the British Isles during the 5th century AD. Angels, Saxons and Jutes crossed the North Sea from what is the present day Denmark and northern Germany. The inhabitants of Britain previously spoke a Celtic language. This was quickly displaced. Later the Angel were named Engle, their land of origin. Their language was called Englisc from which the word, English has been derived.

During the next few centuries four dialects of English developed:

- Northumbrian in Northumbria, north of Humber
- Mercian in the Kingdom of Mercia

- West Saxon in the Kingdom of Wessex
- Kentish in Kent.

During the 7th and 8th centuries, Northumbria's culture and language dominated Britain. The Viking invasions of the 9th Century brought this domination to an end. By the 10th century, the West Saxon dialect became the official language of Britain. Written Old English is mainly known from this period. It was written in an alphabet called Runic, derived from the Scandinavian languages.

At this time, the vocabulary of Old English consisted of an Anglo Saxon base with borrowed words from the Scandinavian languages and Latin. Latin gave English words like street, kitchen, kettle, cup, cheese, wine, angle, bishop, martyr and candle. The Vikings added many words like sky, egg, cake, skin, leg, window, husband, fellow, skill, anger, flat, odd, ugly, get, give, take, raise, call, die, they, their and them.

In 1066 the Normans conquered Britain. French became the language of the Norman aristocracy and added more vocabulary to English.

| French | English |
|--------|---------|
| Close | shut |
| Reply | answer |
| Odour | smell |
| Annual | yearly |
| demand | ask |
| desire | wish |
| power | might |

***Among all languages,
English has the largest vocabulary.***

However, in the 14th century, English became dominant in Britain again. By the end of the 14th century, the dialect of London had emerged as the standard dialect of what we now call Middle English.

Since the 16th century, because of the contact that the British had with many people from around the world, and the Renaissance of Classical learning, many words have entered the language either directly or indirectly. New words were created at an increasing rate. Shakespeare coined over 1600 words.

Even with all these borrowing, the heart of the language remains the Anglo – Saxon of Old English. Only about 5000 or so words from this period have remained unchanged but they include the basic building blocks of the language - household words, parts of the body, common animals, natural elements, most pronouns, prepositions, conjunctions and auxiliary verbs. Grafted into this basic stock was a wealth of contributions to produce, what many people believe, is the richest of the world's languages.

Note to teacher

To stimulate and sustain interest of the students, tell them the origin of English language and its current status. Encourage them to find more information about the language and share with the class. Use project mode to ensure involvement of all students.

Introduction to language

Why do we need language? It is the means through which we communicate – give and receive information/signals. It is through language that we relate ourselves to the world. Hence, every teacher should have a basic understanding of language so that she is in a

position to impart language skills to the students meaningfully. Therefore, brief information on language is included here.

Language - Language is the main vehicle for communication. Language is a set of arbitrary symbols used by a group of people for the purpose of communication.

Symbol - is a code that stands for or represents an object, an action or a person. Language has three major components.

Form - deals with the structure of language, how to form words and sentences grammatically.

Content - deals with the meaning part of language – what to say or the content of the message.

Use - deals with the usage of language – where, when, with, whom and for what purpose language is used.

Phonology

Phonology studies the range of speech sounds a native speaker uses while speaking and how they are produced and how an individual produces them.

The functions of sounds are, however, examined by another linguistic discipline, namely phonology.

Introduction to English Language

The modern alphabet does not suffice to transcribe all sounds on a one-to-one basis. There are many instances when we need an internationally comprehensible code for the detailed transcription of sounds, such as in

DO YOU KNOW ?
English language has 43 speech sounds.

linguistic research, as well as in foreign language teaching. A special alphabet devised by the International Phonetic Association (IPA) is then used.

Speech sounds can be further sub-divided into vowels and consonants depending on their nature and production.

Vowels

Vowels are produced by allowing the vocal folds to vibrate as the air-flow moves through the mouth which is held in an open and fixed position.

Eg. /a/ /i/ /u/ /e/ /o/

Consonants

Consonants are produced by narrowing one or more parts of the mouth to complete or near closure thus causing disturbance to the flow of air or redirection of air-flow.

Eg. /k/ /g/ /p/ /b/ etc.

The basic difference between production of vowels and consonants is the obstruction of air stream. During vowel production the outgoing air stream is relatively unobstructed, whereas, consonants are the result of obstructions to the outgoing air stream during breathing.

Diphthongs

Diphthongs consist of two vowels blended together to make one phonetic unit. Eg. To produce the diphthong in the word /eye/, the tongue has to move quickly and smoothly from approximately the /ah/ to the /ee/ position.

DO YOU KNOW ?

Number of vowels and consonants varies from language to language

Cluster

Combination of two consonants are known as clusters. Eg. /tr/ cl/sh/. It is also known as digraphs.

Syllable

Any sound produced by push of the breath is called syllable. Combination of consonants and vowels forms syllable. Eg. /ka/ /pa/.

We do not speak using individual sounds. Speech is a combination or a chain of individual sounds or words. Formation of such chains of sounds and words are governed by rules of that particular language.

Depending on **manner of production**, sounds can be classified into seven types:

- Stops - airflow is completely obstructed and suddenly released as in /p/.
- Fricatives - air flow through a narrow passage as in /s/.
- Affricates - Combination of a plosive followed by a fricative as in /ph/.
- Nasals - These sounds have resonance sound of nasal cavity as in /m/.
- Laterals - air stream is obstructed in centre of the mouth and is diverted to pass through the gap present in sides as in /l/.
- Aspirate - These are stops having more air when air is suddenly released as in ph/.
- Trill - is an example of retroflex as in /r/.

Speech sound acquisition

Children acquire speech sound production gradually over a period of time. Certain sounds appear before others in the child's early words. Most vowels are acquired before consonants and by the age of three years.

The speech sounds (consonants) can be described based on place, manner and voicing characteristics.

- The place of articulation is the place where the construction of airflow occurs.
- The manner is the way air flows out during production.

All the consonants are not voiced i.e., all the consonants do not need vocal fold vibration for their production. In voiced consonants vocal fold vibration takes place. Whereas in voiceless consonants, vocal folds vibration does not take place. Consonants can be divided into voiced and voiceless as shown in the following table :

| | | |
|---------------|----|----|
| Bilabial | B | P |
| Alveolar | D | T |
| Retroflex | d | t |
| Velar | g | k |
| Palatal | j | c |
| Post-alveolar | z | s |
| Labiodental | v | f |
| Dental | dh | th |

ACTIVITIES FOR DEVELOPING SPEECH SOUNDS

Tips for teachers

Consonants should be considered mainly as ways of releasing, arresting and interrupting vowels. Only when they are co-articulated with vowels and other consonants do they truly become a part of the stream of sound that is speech.

When a child can detect a target consonant, and discriminate it and most others, informal rather than formal strategies should initially be chosen to develop its production.

Plosives – bilabial

The plosives /b/ and /p/ :

The easiest consonant for children to produce is /b/ and its unvoiced counterpart /p/. A simple feedback provided for production of /b/ and /p/ is the sudden release of air through mouth. This can be made felt by the child by keeping his hand near his mouth and feeling the sudden release of air through the mouth opening.

The nasal /m/ /n/

The /m/ is a nasal sound. It is created simply by vocalizing while the lips are closed and at the same time, expelling the breath through the nose as in regular breathing. Vibration can be felt on the nasal ridge while producing nasal sounds, which can be felt by placing finger on nose.

DO YOU KNOW ?
"EDUCATION" and "BEHAVIOUR" are two words with all five vowels.

Depending on **place** of production, sounds can be classified into eight types:

- Bilabial - /p/ as in /pat/
- Labiodental - /v/ as in /van/
- Dental - /t/ as in /thin/
- Alveolar - /t/ as in /tap/
- Palatal - /ch/ as in chair
- Velar - /k/ as in /kit/
- Glottal - /h/ as in /hair/
- Retroflex - /r/ as in /run/

The fricatives /F/ /V/ :

The prerequisites for /F/ /V/ are the abilities to adjust the jaw and retract the lower lip. During the production of these sounds, a turbulent air flow passes from the retracted lower lip and upper teeth. This can be provided as feedback along with visual feedback.

After developing the target speech sound, carry over should be made to production in words and in sentences and in day-to-day speech.

The Dental plosive /t/ & /d/ :

This requires the ability to place the tip of the tongue between the teeth. The most easy feedback available for these sounds is the visual feedback.

The retroflex plosives /t/ /d/ :

The production of retroflex sounds require the ability of curling the tongue back and touching the inner edge alveolar ridge. The feedback available in teaching this sort of sounds is visual and the tactile feedback when air is released.

The palatal plosives /t/ /d/ :

The production of palatal plosives require the ability of obstructing the air stream at palatal region. The air gushing from oral cavity can

be used as a tactile feedback while teaching this sound.

The velar plosives /k/ /g/ :

The most difficult sounds to be provided with feedback are velar plosives. If the child has already acquired either of these sounds, teaching its counterpart is easy.

The production of velar plosives require the ability of obstructing the air-stream at velar region. The back of tongue raising and closing the airway as the way /k/ or /g/ is produced.

The trill /r/ :

The /r/ can be made by retroflexing (trimming back) the tip of the tongue or by raising the back of the tongue. Informal learning of the /r/ can be encouraged in many play situations. This sound can be shown as tongue tip going and touching the gum ridge quickly and repeatedly.

The lateral /l/ :

The production of this sound requires obstruction at the point of /l/ production and escape of air through the sides. This can be shown to the child and a feedback provided by showing himself producing /l/ in mirror will help.

Vocabulary

Around 8 to 10 months, the child has in his vocabulary, a rich variety of sounds. By 1 to 1 ½ years of age most of the children say their first words. By 18 months of age, they learn to combine words. Thus, with increase in age, the child develops vocabulary.

If the teacher is sensitive to the way sound is produced and if she relates it to the symbol of the sound, teaching spelling rules become relatively easy for her.

Assessment of difficulties in language learning

Assessment is very essential because it is a means to gather information about a child so that appropriate teaching strategies may be recommended.

Selection of assessment tools depend on the severity of each child's specific learning difficulty. In many cases, teachers can plan strategies to teach based on observation and use of informal, teacher – made tests. The main purpose of assessment is –

- To group children in a particular classroom.
- To provide suitable remedial instruction.
- To analyze the outcome of instruction.

Formal and informal tests

We can use both formal and informal tests (teacher made tests) for assessing a child. Formal tests are the standardized tests used in educational settings. In formal tests, we have the general achievement tests and the diagnostic tests. General achievement tests are used to test in groups of children and the results are useful for comparing performances among students.

Diagnostic tests are used to test specific skills. To test reading, for instance, there are specific sub-tests like knowledge of letter sounds, ability to blend words and syllabication. The results of these tests give detailed information about the child's strengths and limitations.

However, a draw back with many of the standardized tests is that it does not give specific information, which can be used for planning educational programmes.

Informal tests

Most informal tests are administered by teachers in the classroom. The teacher-made tests are very specific and used to assess one particular skill (for example, sounds of alphabets, spellings, based on set criteria.

Informal tests are :

- Specific to a student.
- The teacher herself can administer.
- Easy to construct.
- Covers a broad section of the child's behaviour.

To construct an informal test :

- The directions must be very clear.
- Questions on unimportant aspects should not be included.
- Simple language should be used.
- Items that have one correct answer, should be chosen.
- Criteria set must be student-specific.
- Adequate experience and competency in testing should be present in the teacher.

Informal teacher-made tests should begin with simple tasks.

DO YOU KNOW ?

We speak during exhalation, not during inhalation.

Sample teacher made test :

Test on auditory discrimination

I. Read the pairs of words and ask the student to tell if the pairs of words are same or different.

- (a) pen - pen
- (b) sit - pit
- (c) cat - mat
- (d) bell - bell
- (e) book - look
- (f) map - map
- (g) run - run

Test on prefixes

Instruct the child to circle all the prefixes in the following words -

- (1) reuse
- (2) unhappy
- (3) unfair
- (4) regain
- (5) undress
- (6) disagree

Visual discrimination of initial consonants

I. Circle the words in each row that begins with the same letter as the first word on the left.

- (a) tree - leaf, owl, star, tea
- (b) bench - much, bed, doll, toy
- (c) foot - look, book, fork, took
- (d) jeep - weep, seep, jar, leap

DO YOU KNOW ?

All words in English language have vowels.

Antonyms

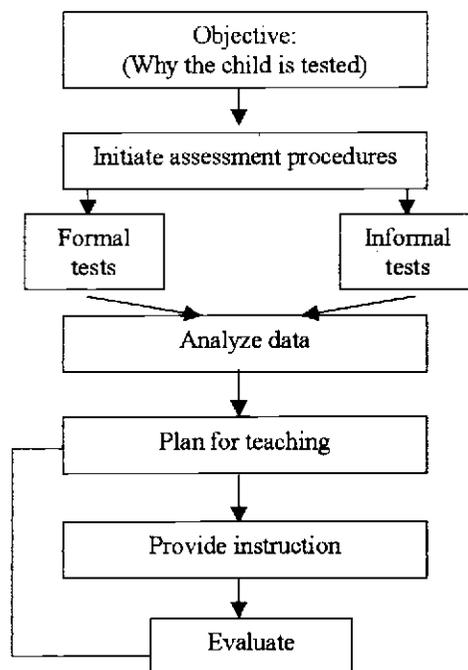
Circle the word in each row that means the opposite of the first word on the left.

- (a) up - go, bring, down, come
- (b) small - tiny, big, far, start
- (c) hot - warm, run, cry, cold
- (d) new - old, dress, stop, happy
- (e) dry - cold, wet, water, open

In the end, it is important to remember that flexibility is the most important aspect of assessment. The various techniques used helps the teacher to gather as much as information possible.

Both standardized and informal tests may be used together to provide with information.

Steps in assessment



Assessment for Reading

It is estimated that about 10% of the general school population experiences difficulty in reading. It has been suggested that reading difficulties are the main cause of failure in school. Reading experiences strongly influence a student's self-image and failure in

reading can lead to anxiety and lack of motivation.

Reading is a complex task. It involves visual-auditory processing and obtaining meaning from symbols (letters and words). Reading includes two basic processes – decoding process and comprehension. Decoding helps the learner to pronounce words correctly. Comprehension helps the learner to understand the meaning of words in isolation and in context.

Students with learning problems have difficulty with oral reading and silent reading for comprehension. Some of the difficulties that students with reading problems show include omission of words, incorrect pronunciation of words, reversals (reads 'saw' for 'was'), additions, distortion of words or long hesitation prior to reading unknown word and lack of comprehension of material that was previously read.

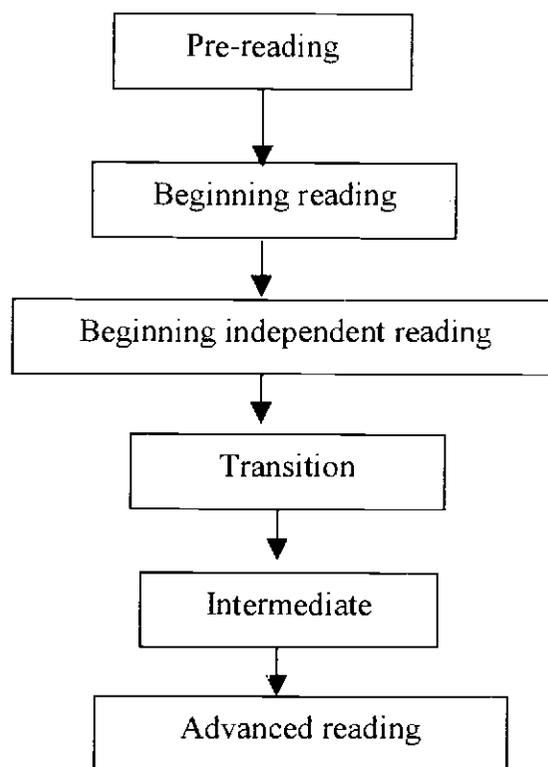
1. *Pre-reading stage* :
This stage occurs from birth to age 6. The type of language that a child hears from his environment helps in reading at a later stage.
2. *Beginning reading stage* :
This includes kindergarten to 2nd grade. The student learns sound-symbol relationships and decoding of words.
3. *Beginning independent reading stage* - 2nd - 3rd grades.
At this stage, the child analyzes a lot of unknown words.
4. *Transition stage* :
This stage covers grade 3rd to 5th.
5. *Intermediate stage* includes 5th to 7th grades.
This involves advanced comprehension skills.

6. *Advanced reading stage* ranges from 6th to 8th grades.

The student would have learnt word-identification, comprehension and study skills.

As you see, the stages overlap but follow a sequence.

Stages of reading



WRITING

Competent writing requires many abilities such as the ability to read, skills in spelling, legible writing and verbal expression.

Children who are learning disabled often lack many of the writing related abilities and tend to have severe problems communicating through writing. Their writing includes errors in spelling, punctuation, capitalization, handwriting and lack neat appearance. Their written work tends to be short and poorly organized.

Problems in writing appear when the student is required to use the various language components in written composition, because writing depends on listening, talking, handwriting and spelling.

Since children who are learning disabled experience writing difficulties, it is necessary that the correction of these difficulties be done in a systematic manner that requires teachers at all levels to give time for writing and correct the written material.

Assessment of writing

When determining a child's capability in written expression, teachers should carefully make an outline of the main objectives of the assessment. Those aspects must be focused for assessment that creates difficulty to the child. Careful observation of the child's written work is very essential before any assessment is done. The task of observation becomes easier when interviews are done with people at school who are in contact with that particular child. Careful analysis of class work, home work and test papers will reveal pattern of errors and the difficulties student faces. Such information will clarify problems and give direction to choose the techniques needed for helping the child. Thereafter, the teacher can use standardized and informal techniques to assess the problem further and provide a suitable remedial instruction. We can assess written expression through standardized tests or through informal assessment techniques.

Informal assessment techniques

Children should be able to express their thoughts properly in order to write well. However, when children who are unable to do this, it becomes clear that they have problems with written expression and

therefore an informal assessment is needed to outline the specific problems. For this, a sample of the student's written work is essential. This gives us an idea of the quality of handwriting, vocabulary, structure, spacing of letters and words, sequencing of ideas, spelling and the content. These help the teacher to isolate the problem that a student shows.

Also, it is important to note the usage of grammar. A sample of the wrong usage of grammar is given to help get an idea of the kind of errors usually made by children having learning problems. With the help of such charts, the teacher will be able to isolate the specific problems and plan for suitable remediation.

Sample chart of errors students make

| Grammar | Kind of errors |
|--|---|
| Tenses | We seen it We was there |
| Articles (confusion to place a, an, the) | I am going to an market |
| Prepositions (confusion for of/off) | Turn of the light |
| Degrees of comparison | She is the taller of all Mangoes are sweetest than apples |
| Adjectives/adverbs | She ran fastly |
| Pronouns | It is him book Her told me |
| Additions | She is the pretty |
| Omissions | Give the book her |
| Plurals | The girl are dancing The childs are crying |

Other major errors seen in writing include :

- not maintaining left to right orientation in writing.
- mixing of capital and small letters.
- micro or macro sized letters.
- shabby and scribbled handwriting.
- too light or too strong hold of pen/pencil leading to light or dark (with impressions of writing seen in following pages) written words.
- punctuation not maintained.

As you teach, to check progress in writing, use the progress record form given here. Periodically (once a week) keep noting progress as he achieves the skill. This will help you to plan and sequence your teaching.

Introduction to spelling

Spelling is the forming of words through the arrangement of letters. Children move through stages of spelling in which different types of spelling strategies are used. The ability to spell is important because it allows one to read the written words correctly.

The English language has in many instances inconsistent relationships between phonemes (speech sounds) and graphemes (written symbols). Thus, we see differences existing

between the spelling of various words and the way the words are pronounced. Many children with learning problems therefore, have difficulty in learning spelling.

Children who have trouble with reading usually have poor spelling skills as well. However, some children read words but do not spell correctly. Thus, spelling a word is a difficult task. While reading is a decoding process, spelling is an encoding process where the child must respond without the help of a complete visual stimulus with less clues. Spelling requires concentration on each letter of every word, while in reading it is not necessary to know the exact spelling of words or to attend to every letter.

To spell, the child must be able to read the word, apply phonics, visualize the word and then to write the word. Spelling difficulties may arise from problems in visual memory, auditory memory, auditory and visual discrimination or motor skills.

Informal spelling assessment

This involves the use of teacher-made tests. These tests give information about a student's level. The informal assessment should include the skills a student has and has not mastered, make a list of the errors and plan for remediation.

One method of assessment of spelling errors is through observation. It is important to observe –

- The child's writing.
- The spacing between words, size of the words and formation of letters.
- Difference in oral and written spelling.
- Spelling the word letter by letter or by syllables.
- Ability to blend.

A quick screening can be done using the NIMH checklists given in Chapter-III in this book for learning problems.

A smart teacher can develop her own tests for reading, writing and spelling and find out precisely the difficulty faced by the student.

A comprehensive test developed for use by primary school teachers which helps in identifying learning problems as well as the processing difficulties by the student is "Grade level assessment device for children with learning problems in schools" (Narayan, 1999) available at NIMH. This test is validated for use in Indian primary schools and suitable for testing Hindi, English and Math at primary level.

Teaching Pre-reading and prewriting skills

The preparation for reading and writing can be fun. The foundation for developing interest in reading and writing among children lies in the activities they carry out at this stage.

Pre-reading simply means readiness to read. Following tasks can be a sequence of pre-reading activities :

1. **Matching picture** : Give pairs of familiar pictures and let the child match (tree, bus, aeroplane, dog.....)
2. **Grouping** : Give a number of pictures, have the children group as per classification – fruits, animals, transports, film stars, cartoon characters.....
3. **Naming** : Show the picture with its name written below it. Show another word card with the same name written. Let the child match and name the object. Write the word in small letters. Do not use capital letters. It can be taught later.

Capitals are used only for beginning a sentence, first letter of a proper noun and for highlighting.

Before letters of the alphabet are introduced, if whole word with picture and word cards are used, the child learns to read by sight. It also gives him an idea of how letters are put together to form words. When the alphabet is taught later he learns the letters with meaning and purpose.

Remember the sequence :

Picture → picture → word → letters

Pre-writing can be taught around the same time when the child learns pre-reading skills.

Remember Reading is a sensory input activity while writing is a motor output activity.

Best way to begin pre-writing skills is through colouring.

- First, allow the child to have experiences of hand painting, finger painting and such activities that he enjoys.

- Then introduce chalk board and chalk and/or paper and crayon and allow free hand drawing. Let him use any colour and draw anything he wants. At this stage, check to see that he holds the chalk/crayon correctly.
- Next step is to have colouring within lines. Give pictures to colour. There are a number of colouring books available in the market.

Instead of teaching the routine 'standing line - | | | | |', 'sleeping line - - - - -', 'slanting line / / / / /' and curved line as  done in schools, make it interesting. Let the child colour one picture with vertical strokes, another with horizontal strokes, another with slanting strokes and one more with curved line. This will not only sustain interest, but leave him with a sense of achievement after having coloured each picture.

Stages in writing

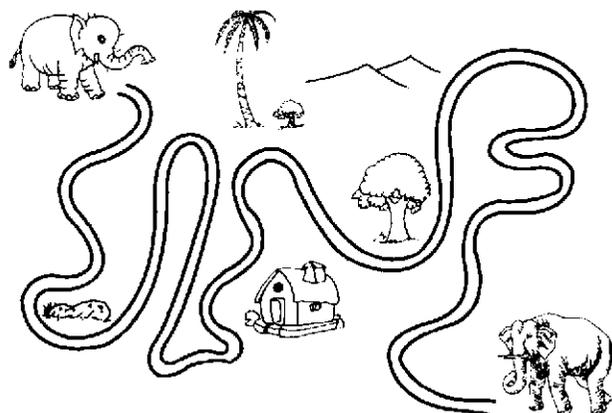
- Free hand scribbling
- Colouring within line
- Tracing
- Joining dotted lines
- Copying near point
 Far point (blank-board)
- Independent writing

Make sure that the wrist rests on the desk while colouring and the holding of the colour pencil is correct.

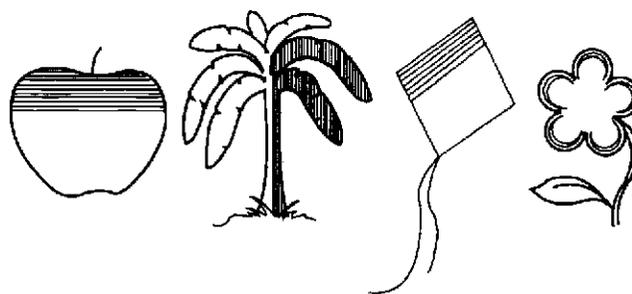
- Gradually provide activities requiring more pencil control.

Example :

Take baby elephant to its mother by drawing a line on the road to reach the mother.



Draw lines as shown to complete picture



- ✓ Tracing lines and joining dots to complete the pictures can be some more activities before you begin with words or letters of alphabets.

Whenever possible, maintain beginning paper pencil work on the left hand top corner and moving towards right. This will later help in maintaining correct writing habits.

LISTENING

Listening is one of the first steps in any learning. It is the process by which spoken language is converted to meaning in the mind. Listening requires that a person attend to the message, select the main idea and recall and relate one idea to another. Some of the factors that affect

listening are intelligence, attention, age, auditory discrimination and speed of presentation.

Intelligence and listening go together, that is, the higher the intelligence, the better the listener. Auditory discrimination is the ability to tell the difference in sounds. Attention involves concentrating on the message being received. Listening improves with age. The three common types of listening are appreciative, attentive and critical.

Appreciative listening is the ability to listen for enjoyment (music). Attentive listening is the ability to listen for information (listening in classroom). In attentive listening, the student must focus on main ideas, details and sequencing. With this type of listening (attentive) student can respond to teacher's instruction.

Critical listening is very complex. It requires both understanding and evaluation. It also requires comparing information with previous knowledge, drawing conclusions and modifying what is heard.

Children with learning problems often have difficulty in listening.

Try this to improve listening skills in children with learning problems

- Try to get the attention of student by maintaining eye contact.
- Highlight sentences such as "These are the important points" or "the first step is" or "look here carefully" which will help the poor listener to attend.
- Children with learning problems understand better when the speed of presentation is slow.

- Give to children (poor listeners) when sentences with adjectives, and adverbs are used.
- Use short sentences of not more than 5 to 7 words. Also the new and unfamiliar words presented in a lesson should be explained.
- Begin training in listening skills at a basic level with simple commands and gradually introduce multiple commands.

Simple commands :

- Put your bag in the shelf.
- Shut the door behind you.
- Put all your books in your bag.
- Give me your note book.

Multiple commands :

- Put your pencil and eraser inside your pencil box.
- Collect all the chalk-pieces and put them in the box.
- Keep your English textbook to the left on your desk and open the math textbook.

Once the child is able to carry out simple and multiple commands like the above mentioned ones, it becomes clear that he has acquired listening skills and therefore, can be trained to listen to short tales, prose and simple poems.

Getting the child to listen to tales/prose TALE

Tell stories by involving students to enact the various characters. At the end ask simple questions to those children who were audience and elicit response. Give children who have difficulty in listening, a role in the dramatization so that their attention is sustained. Gradually, make him part of audience.

PROSE (a sample exercise)

(Read the passage with proper intonation observing punctuation. Look at the children and give eye contact as you read as far as possible.)

Children! Listen carefully. We will read about mangoes today !

Mango is a fruit. It is also known as the "King of fruits". We get mangoes only in summer. We get it in the month of March, April and May. Raw mangoes are green in colour and ripe mangoes are yellow. We make pickles with raw mangoes and fruit juices with ripe mangoes. Mangoes are of different varieties. There is only one seed in a mango. We find mango trees in many houses. They are huge trees and they give shade. Do you like mangoes?

Questions :

1. Mangoes are also known as _____.
2. In which season do we get mangoes?
3. What is the colour of ripe mango?
4. What do we do with raw mangoes?

Give them clues if they struggle to answer. Do not discourage efforts!

POEMS

Poems demand more attention from the children. Not only auditory but also visual attention (with a number of colourful pictures depicting the poem) is required for the child to listen to poems and to answer questions orally.

Sample :

Teacher activity

Let us learn a poem today! Look at the pictures and listen carefully. The poem is about "Sun"

When the Sun goes up and down

When the Sun comes up

"Dawn" is the time!

When the Sun shines bright,

"Morning" is the time!

When the Sun is high in the sky,

"Noon" is the time!

When the Sun begins to set,

"Evening" is the time!

When the Sun is not seen in the sky,

"Night" is the time!

Questions :

1. What is the time when the Sun shines bright?
2. When does the Sun come up?
3. When does the Sun set?
4. What is the time when the Sun is high in the sky?
5. What is the time when the Sun is not seen in the sky?

Add more rhymes and poems that involve action. This will improve listening skills, as it gives a multisensory input.

The next step is to train the child to listen to tales, prose and poems which are unfamiliar. Also, the children are expected to listen, reason (to certain extent), understand and answer the questions orally in a sentence or two.



Listen to the poem carefully.

The squirrel

Hop, skip and jump,

The squirrels have fun.

Up and down the tree they run,

Chasing each other in the sun.

Three stripes small,

The squirrel has on his back.

What he loves most of all

Is a big nut to crack.



Questions :

1. How do the squirrels have fun?
2. What do the squirrels do in the sun?
3. How many stripes does a squirrel have? Where?
4. What does the squirrel love the most?

Apart from tales, prose, rhymes and poem – both familiar and unfamiliar, a few examples of narrations, descriptions, word-play and, conversations have been discussed below.

Narration

Here, a child in the class can be asked to narrate his/her experience on any event he/she likes. This would hold the attention of the children in class. A few questions may be asked by other children when she finishes narration.



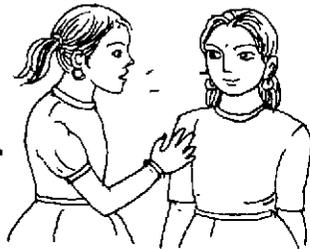
"I am Rahul. I had been to Tirupathi this summer with my family. We all went by train which left Hyderabad at 6.00 p.m. and reached Tirupathi at 6.00 a.m. in the morning. My father had arranged for a car which come to the station to pick us all up. We then went to Tirumala – where the temple of Lord Venkateswara is situated. We took 45 minutes to go by car. The road was not straight. It had many curves and bends because of the mountains. We reached Tirumala, went to a guest house, took bath and went to the temple. There was a big line outside the temple and we had to wait for more than an hour. By the time we had darshan it was noon. Tirumala was not very hot. It was pleasant and we also went for sight seeing. We were there for two days and got back to Hyderabad".

Questions :

1. With whom did Rahul go to Tirupathi?
2. From Tirupathi station where did Rahul go by car and why?
3. Did Rahul and family stay at Tirumala?
4. Why did it take more than an hour for Rahul and family to have darshan?
5. Why were the roads to Tirumala curved?
6. Where is Tirupathi situated?

Conversation

For a conversation to take place in the classroom, give a topic to two children and ask them to carry on a conversation for a period of five minutes or so. Children can listen to the conversation and answer questions.



Example :

Two girls meeting for the first time.

Divya : Hello, my name is Divya. What is your name?

Nikita : Hello, My name is Nikita.

Divya : In which class are you studying?

Nikita : I am in the IV Standard. How about you?

Divya : I am in III Standard.

Nikita : What are your hobbies?

Divya : I like playing indoor and outdoor games and watch cartoons on TV.

Nikita : What indoor games do you like the best?

Divya : I like to play ludo, snakes and ladders and carron. And your hobbies?

Nikita : I collect stamps and I like singing.

Divya : Do you sing?

Nikita : Yes. I go for my music classes twice a week.

Divya : That's really good. I like singing too.

Nikita : Why don't you come to my house this Sunday? We can play. I have a lot of games at home.

Divya : That's great. I will come in the morning. We can play there.

Divya : Where do you live?

Nikita : Plot No.8, Flat NO.20, Boat's Club Road, Hyderabad.

Nikita : Bye. See you on Sunday.

Divya : Bye. See you.

Questions :

1. What are Nikita's hobbies?
2. What indoor games does Divya like?
3. Who goes for music classes twice a week?
4. Who do you think is older. Nikita or Divya?
5. What did Nikita say when she invited Divya on Sunday?

Another activity for listening can be asking the children to answer the questions in "yes or no" form. Frame the questions in such a way that a child is able to listen, comprehend, reason and answer.

Example :

1. Do hens give us eggs? Yes / No
2. Do we brush our teeth everyday? Yes / No
3. Do you come to school in the night? Yes / No
4. Can elephants fly? Yes / No
5. Is milk white in colour? Yes / No
6. Do we write with a chalk in books? Yes / No

The foundation laid at this stage through enhancing listening skills strengthens the learning of student at higher level. If the attention is sustained through listening to what is being taught the child finds it easier to learn abstract concepts. Use all possible opportunities to improve listening skills.

Reading and writing

Introduction

Reading and writing requires attention and focus. It involves looking, saying and writing the words or sentences. Also a through practise with the capital and small letters, punctuation and formation of sentences places children in a comfortable position to learn and retain what has been taught which in turn lays a strong foundation for writing.

Children should be taught to organize their thoughts during writing. It is important to teach a child to read and write with a positive attitude so that he or she is motivated towards the task. This will gradually help the child gain confidence and express himself freely. This can also be done by encouraging the students to share their ideas and later put them in a written form.

Teaching a child to read and write is a major task, which needs to be done in a gradual manner. Therefore, it is easier to follow a hierarchy of increasing difficulty so that a strong foundation is laid for both reading and writing. Reading and writing go parallelly together because reading is an input activity while writing is the output activity.

Use the worksheets given for improving reading and writing. Prepare more such worksheets.

We have discussed about vowels and consonants, their definitions and their

differences. We have also learnt about the sounds of all the five vowels and consonants. Let us now look at words having vowels and consonants in different combinations.

We will first learn about ---

CVC and CVVC words

CVC stands for Consonant - Vowel - Consonant

Eg. c a t
 (C V C)

CVVC stands for

Consonant - Vowel - Vowel - Consonant

Eg. b o o k
 (C V V C)

Most children are ready for formal spelling programme, when they finish their pre-primary level and can read simple CVC words.

When the CVC words are first introduced, let the students analyze them and then put them together using letter tiles. Do not insist on writing if they do not like paper pencil work. Allow him to read and understand and make more words in play way methods. The worksheets in following pages are some samples.

SPELLING

Reading, writing and spelling

Spelling is a skill which develops with reading. However, a good reader does not necessarily mean that he is a good speller. But in most cases, poor readers tend to be poor spellers. Spelling requires a complete recall of the letters to be spelt in the **correct** order. It is important to note that during reading, the student does not have to look at each letter of the word. The context provides understanding and the student will be able to read the word using

few letters. Spelling on the other hand involves **attention** to all the letters in a **proper sequence**.

To improve spelling, check for the following :

- Ability to apply spelling generalizations to unknown words.
- Basic spelling vocabulary.
- Knowledge of the meaning of the word spelt (one, won).
- New words – ability to say and write.
- Ability to analyze the word structurally for spelling.

To learn spelling fluently, student must remember the sounds of letters and also how to blend the letters into words. Once the students have mastered this, teach rules.

- Teach the students to ask for the spelling of words when they write. Parents and teachers should write the word instead of spelling them orally. This helps the student to see the word and copy.
- Since each student moves at his or her own pace, using informal spelling tests and error analysis helps to improve spellings in children. It must be noted that students must not be overloaded with spellings. Each week a few words can be taught. The teacher may start with five words, and increase the number of words depending on how well the student is able to learn.

By this time, the student will be familiar with the vowels and consonants and accordingly will be able to relate to the sounds of the letters.

Try this for teaching spellings !

- Say the word, spell it, and then say it again. Now, let the student say the word and spell it. Repeat the process and have the student repeat it before writing the word from memory.
- Show the student the word on a flash card and say the word. Let the student look at it and spell it. Then, ask the student to spell it without seeing the flash card. After spelling it 2 to 3 times, let the student write the word and check the word on the flash card.

To make the task of learning spellings easier, the method of syllabication must be used.

Syllables are parts of words containing a **vowel** or **vowel sound**. It is also described as a "push of breath".

Syllabication is the process of dividing a word into its component parts. Each syllable contains a vowel sound.

Rules for syllabication

- Rule-1** Every syllable has one vowel sound.
As in 'apple'.
- Rule-2** The number of vowel sounds in a word equals the number of syllables.
Home - 1
sub/ject - 2
fur/ni/ture - 3
- Rule-3** A one syllable word is never divided.
well
book
stop

Rule-4 Consonant blends are never separated.

drum
crab
bread

Rule-5 When a word has ck or x in it, the word is usually divided after ck or x.

boxes - box/es
track/ing

| Six kinds of syllables : | |
|--------------------------|------------------|
| open | (he, tomato) |
| closed | (habit, bed) |
| silent e | (time, fate) |
| consonant - le | (bangle, simple) |
| vowel pair | (boot, lead) |
| R - controlled | (short, dark) |

Rule-6 When two or more consonants come between two vowels in a word, it is usually divided between the first two consonants.

Sis/ter
but/ter

Rule-7 When a single consonant comes between two vowels in a word it is divided after the consonant if the vowel is short.

Hab/it
cab/in

Some basic rules :

- After a short vowel in one syllable word
- 1. Use ck for k sound (pick, lick, duck)
- 2. Use tch for ch sound (patch, match, pitch)
- 3. Use dge for j sound (budge, ridge, dodge)
- A silent 'e' at the end of a word causes the previous vowel to be long (its name).
- Most words form plural by adding 's'. Nouns ending in s, x, ch, sh or z form plurals by adding 'es' (sixes, churches, washes, buzzes).
- w and x are never doubled.
- s never follows x.
- Q is always followed by a.

While teaching combinations of vowels and consonants, explaining certain rules will be helpful to the student. For instance, the rule on silent 'e'. In CVCE combinations the final 'e' is usually silent. The first vowel gets its sound as in the original alphabet sound - kite, cute, name, rope, jute..... Explain the rule and have children make as many words as possible. Give a CVC word and let them add 'e' to make new words.

RULES FOR TEACHING PHONICS

CONSONANTS :

1. C followed by e, i, or y – sounds s (race, city, fancy).
2. g followed by e, i or y – sounds j (gem, clergy, ginger).
3. c and h next to each other make only one sound.
4. ch mostly sounds as in kitchen and less frequently like 'sh' as in machine.
5. ck endings in a word sound k.
6. two consonants together make one sound (butter).

VOWELS :

1. When y follows a consonant in a word, it sounds long i (cry, by).
2. r controls the preceding vowel giving it neither short nor long sound. – car, far, fur, fir. Letters l and w have a similar effect.

Blends and digraphs

Once four letter words involving CVVC, CCVC, CVCC, CVCe are learnt, blends and digraphs can be introduced. Here again, introduce rules – **blends** are words where two consonants together produce a sound and both sounds are heard – as in

| | |
|---------------|----------------|
| <u>c</u> raft | s <u>p</u> eak |
| <u>b</u> low | <u>c</u> lap |
| s <u>e</u> nd | <u>d</u> rama |
| <u>t</u> rap | <u>s</u> teal |
| s <u>o</u> ft | <u>d</u> ump |

Digraphs are found in words where two consonants together produce a new sound as in

Wheel
Shut
Chop
With
Graph
Song

Let them make as many words as possible with blends and digraphs involving CCVC or CVCC or CCVCC using letter tiles (like in scrabble) and having group games in word building will sustain interest in the students. Use the worksheet given in this book. Make more such worksheets to enhance reading and spelling skills involving blends and digraphs. **Silent letters** can be introduced as a next step. Explain rules as in 'w' in the end of the word, 'k' before 'n' in the beginning of the word, as in –

| Silent 'w' | Silent 'k' |
|------------|------------|
| blow | know |
| flew | knife |
| follow | knit |
| slow | knee |

The rule is generally consistent for most of the common words and children learn without much difficulty.

Silent letters in the middle of the words normally result in omission as in

answer, duck, lock, fight, night

When a consonant repeats, children tend to omit one of them as in

rabbbit, scissssors, runnning

SEQUENCE FOR TEACHING PHONICS

1. SIMPLE CONSONANTS

b, p, m, w, h, d, t, n, hard g (as in gas), k, hard c (k), y (yet), f (for).

2. MORE DIFFICULT CONSONANTS

v, l, y, s, r, c, q (kw), x (ks), j, g (engine), s (as).

3. CONSONANT BLENDS AND DIGRAPHS

ck, ng, th (the), sh, th (thin), wh, ch

4. SIMPLE CONSONANT BLENDS

l, r, p, t, bl, pl, br, sp, st, tr, thr, str

5. SHORT VOWELS

a (hat), e (get), i (sit), o (top), u (cup), y (happy)

6. LONG VOWELS

a (cake), e (be), i (five), o (old), u (mule), y (cry).

7. SILENT LETTERS

k (knife), w (write), l (talk), t (catch), g (gnaw), c (black), h (hour).

Training in syllabication will help to a great extent in correcting these errors (See highlight boxes for some of the basic rules). In a word in which the consonant repeats, syllabication is done as seen below.

Rab/bit

Suc/cess

Run/ning

Thus, while saying the syllable, the student will know that the letter repeats. Thus, error will reduce. Worksheets on syllabication will help in training the student to spell and read correctly.

Nouns – Verbs – Pronouns

As the vocabulary of the student increases, understanding of nouns, verbs and pronouns become essential. Sentence construction and meaningful conversation is possible only when basics of language is learnt.

NOUNS

Teacher can begin the class like this –

All of you look here. I have a bag with me. Now, one by one I will pull out a few things from this bag. It can be objects, or pictures. All you have to do is name each object or picture that I take out from the bag. Can one of you write the words on the board?

Let us start.

T. What is this?

S. Book.

T. And this one?

S. Ball.

T. Who is this?

S. Sachin Tendulkar.

T. Which animal is this?

S. Elephant.

T. What is this picture?

S. Tree.

T. Which country is this?

S. India.

T. Who is this?

S. Shah Rukh Khan.

T. What is this?

S. Pencil box.

Good. Now, let us all read the words written on the black board.

Book

Ball

Tendulkar

Elephant

Tree

India

Shah Rukh Khan

Pencil box

These words are names of persons, things, animals and places. We give a name to all these words. We call them Nouns.

Domino game

At this point domino game can be introduced. Dominoes can be pictures or words depending upon the age and level of children.

How to make a domino

Have a number of cards in the size of perhaps, playing cards. In each card, draw or write two details as shown below.

| | |
|-----|------|
| bud | tree |
|-----|------|

| | |
|--------|------|
| flower | rain |
|--------|------|

| | |
|------|-----|
| rain | bud |
|------|-----|

Make at least 50 such cards. Each word should repeat once in another card.

Nouns refers to the name of a person, place or a thing.

Deal the cards to children after shuffling to let them have equal numbers. Place the first card on the table. Whoever has the matching card will place the next one adjacent to the word.

| | | | |
|--------|------|-----|------|
| flower | rain | | |
| | rain | | |
| | bud | bud | tree |

The game continues until someone finishes with all the cards. One who finishes first wins. The rest play until all cards are over.

Ensure each child reads the words in the cards before he places it on the table/floor.

The words can be any thing – animals, birds, numbers, etc.

Nouns are easy to introduce as they can be shown in the form of real object, model or picture. Provide as much opportunities as possible for the child to gather nouns and categorize. Worksheet on 'person, place, animal, thing' is a fun exercise children will enjoy.

Verbs

When nouns are used with action words, meaningful sentences are formed. These action words called 'verbs' can be introduced to children through classroom activities. Here is a sample activity.....

Call children one by one to the front of the class and ask them to enact doing something. Let other children guess. Write the word on the board. When 10 to 12 such words have been collected, read them and explain that they are all actions and action words are called

verbs. Let the children add new words. Ask them to list all that they do since they wake up in the morning till they go to bed. Let all children write the verbs in their notebook.

Pronouns

When nouns and verbs are mastered, small sentences can be made. At this point, instead of repeating the nouns introduce **pronouns**. This can happen spontaneously without much difficulty. Provide worksheets to strengthen the skill. To teach masculine (he, him, him), feminine (she, her), neutral (it), collective (our, their, they, them) and first and second person pronouns (I, you, we, your), use the children in class and create situations whereby, they have to use the correct pronouns. In addition to reading and writing, conversation skills will also improve through these activities.

Past tense – present tense – future tense

In every language using appropriate tense in a sentence is essential to give meaning to the sentence. Teachers may introduce this through classroom activities, by enacting as well as having students to carry out a task and ask others to describe. For instance,

Teacher may say "Latha, come here and write on the board....."

As Latha starts to come towards the board she may ask other children "What is Latha doing"

"She is going towards the board" – (teacher writes 'is going' – present continuous tense).

She also rewords – 'Latha goes towards the board' (present tense).

"She **will write** on the board" (future tense).

While she writes, highlight "she writes on the board" (present tense).

After she finishes, "what did Latha do?"

"She **wrote** on the board" (past tense).

Write – present tense; wrote – past tense; will write – future tense.

Teacher may carry out a number of such activities involving all children in class and have them write the correct tense.

In the process, introduction of rules for present to past tense such as addition of 'ed' (call – called) can first be taught. Other words which are different (run-ran) and words which do not undergo change in both present and past tenses (shut – shut) can follow.

Change in tense with usage of 'has, have, had' (as in 'train has arrived', 'she has come to see the baby') can then be introduced.

A few sample worksheets are provided in this handbook. Teachers may develop more such interesting worksheets to sustain interest of the students.

Degrees of comparison

This again is a concept that can be taught through simple classroom activities. For instance, call three students to the front – the tallest, one with average height and shortest in class. Introduce – tallest, taller than and shortest to the class showing the three children. Encourage them to share such examples using chalk pieces, pencils, notebooks, lunch boxes. Write all the words with degree of comparison on the board. Introduce the terms positive – comparative – superlative. Encourage the children to say as many examples as possible and write them on the board.

When they have mastered, introduce rules: superlative degree is preceded by 'the' – 'Qutab minar is the tallest tower'. Comparative degree always will have a comparison of more

than one with the usage of 'than' - 'Iron is heavier than brass'.

Now, introduce worksheets to reinforce the concepts. A few worksheet samples are provided in the handbook.

Homophones

The teacher can introduce homophones to children by playing a game in the classroom.

Here, the teacher can divide the classroom into 2 teams - team A and team B and ask the children of each team to give a word. As and when the children say words, they can be written on the board. When a word having a homonym is written on the board, the teacher can stop there and ask the children of that team or the opposite team to give a word sounding the same but different in its meaning and spelling. Later, the teacher can explain the concept of homonyms by giving a few more examples.

Supposing the children do not come up with any of the words having a homonym, the teacher herself can write the word on the board, explain the meaning of homonym and proceed with a few more examples. And the team that gets the maximum number of homonyms get more points and win the game.

"These are some of the homonyms given by you"

| | | |
|-------|---|------|
| son | - | sun |
| whole | - | hole |
| knew | - | new |
| eyes | - | ice |

"Here you can see that the spelling of the word is entirely different. Also the meaning. But when we pronounce these words, they have the same kind of pronunciation. Therefore, homophones are words that have the same pronunciation but different in meaning and

spelling. We have to derive or understand its meaning depending on the context or situation.

CONJUNCTIONS

Tell the children to make a mental picture of a train (or show them picture of a train). Ask them, "can you tell me how these bogies are connected? Yes, you are right. There is a hook which links one bogie to the other. Now, let's see how we can link sentences together with word - hooks".

For example, I like mangoes. I like apples.

We can link these two sentences together like this -

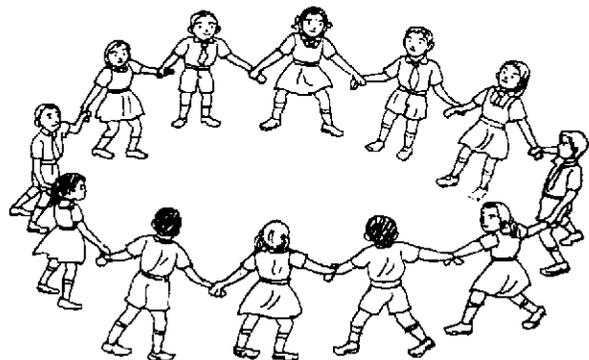
I like mangoes and apples.

Now, the little 'word-hook' **and** is used to join two sentences as joining two bogies of a train. This little word **and** is called a "**conjunction**".

You may similarly give more such concrete examples to help them understand conjunctions. Try the following activity to introduce the other conjunctions.

Activity

Ask a few children to stand in front of the class (one beside the other). Let them all hold hands and then explain that they have joined themselves by holding hands and similarly we have words in English to join sentences.



Look at this sentence.

Eg. The dog barked and the thief ran away.

Here, the sentence "The dog barked" is joined to the sentence "The thief ran away" by the conjunction '**and**'.

Let us look at a few more examples.

Example :

1. My brother is well, **but** my mother is ill.
2. You must hurry **or** you will miss the bus.
3. Three **and** three make six.

In the first two examples, conjunctions 'but', 'or' have been used to join two sentences. In the third example, the conjunction 'and' joins two words only.

Hence, for example, instead of saying, 'Ram is a good bowler' and 'Vijay is a good bowler', we can say – 'Ram and Vijay are good bowlers'.

Therefore, 'and', 'or', 'but' are little words called conjunctions. We use them to join sentences or words.

Provide as many examples as possible and make the class time a fun time!

Comprehension

This is an activity that begins at the stage of listening, as seen in earlier pages. Reading comprehension requires reading of sentence and paragraphs and desire meaning. As a rule, move from simple, concrete sentences to complex, abstract sentences. This will sustain interest of the student.

Sentence construction

By now, the students have learnt to form short sentences and write on their own. Provide opportunities to write as much as possible on their own. Provide a picture or a theme. Initially form sentences together with the

students. Write on the board. Later, allow them to do on their own. Give a topic, say 'sun rise' – tell them to describe and say as much as possible on 'sun rise'. Use suitable conjunctions. With the help of students, punctuate the passage. Now tell them to read with correct intonations, observing punctuation. It has been a class work. Now give them themes to write the details, which can be a small group work – using the concept of cooperative learning. Finally, let them choose a topic and write. Inform in advance that spelling, grammar, punctuation, content all will have separate weightage. Make it a fun class for them, and for you too!

Sample :

Sun rise

What a beautiful morning! A misty dawn with dewdrops on the grass. It feels a bit cold. I sit on a rock and rub my hands to feel warm. As I watch, the sky turns crimson red. Is it reflecting on me? Am I looking red? I wonder! Gradually, a red ball comes up in front of me in the east! A huge red ball! As I watch it comes up – a perfect circle. Hey! It is turning yellow as it comes up in the sky! Birds fly happily chirping as though welcoming the red ball – The Sun! I look down and oh! What happened to the dew drops? They are gone! I was feeling cold then, but now I feel hot – the Sun is up and is warm. I hear my mother calling me to get ready to go to school. I get up from the rock and go into the house telling the Sun, "I will see you again rising tomorrow".

You may encourage the student to write such paragraphs. Help him with use of simile/ metaphors, adjectives, conjunctions and punctuation. This will improve his language skills.



Prepositions

Sentences are meaningful with prepositions in the right place. In English, as the word preposition indicates it is a 'pre-position'. It indicates the position of a noun by appearing 'before' the noun.

The fruits are **on** the table. Introduce prepositions by carrying out certain tasks like putting objects in, on, under, above, below, beside..... Objects/people and let the children tell the position by using the correct preposition.

Provide as many worksheets as possible to enhance and strengthen.

Adjectives and adverbs

As the language skill improves forming of descriptive sentences and creative writing should be encouraged. At this point, introduce adjectives and adverbs through classroom conversation and use of worksheets.

Interjections

Interjections can be easily taught because they involve the expression of emotions. Children with learning difficulties have limited emotional expression and may require extra efforts from the teacher. Worksheets can be of help to the children. Narration of stories with suitable expression and intonations will improve use of interjection.

Synonyms and antonyms

Word games in the classroom such as 'tell me another word that means the same as silent' can help in introducing synonyms. As children say, write them on the board.

| | | |
|--------|---|---------|
| Say | - | tell |
| Sad | - | unhappy |
| Hurry! | - | quick! |
| See | - | look |
| Finish | - | end |

Use worksheets. As they master the skill, give them exercises in sentence construction. Provide a sentence with a word and let them rewrite with a synonym.

Balu **told** his father to pick him up from the school.

Balu **said** to his father to pick him up from the school.

Once synonyms are introduced, it is easy to give the opposites - antonyms. Use the worksheets in the following pages. Be creative and make more worksheets.

PARAGRAPH WRITING

Usually we come across chapters, essay, prose, compositions and letters which are broken up into paragraphs to make reading easier. paragraphs need to be properly sequenced divided so that the flow of the matter remains intact.

Paragraph writing requires imagination, good vocabulary and creativity. It is better to explain the rules in paragraph writing and what it means so that the entire concept remains clear.

To start with, children may look at pictures and write a few lines describing it. As a next step, they can be asked to select a topic and write a few lines. Thereafter, one can slowly proceed to words. Here, words & short sentences can be given as a guide or clue and the children can be asked to write a paragraph using the given words & giving it a title in the end.

Once, these skills are developed, it becomes easier for the child to write on any given topic with ease.

There are certain basic rules in paragraph writing which helps the child to write better.

Remember : Paragraph writing is different from essay writing.

Rule-I

Just as a sentence deals with one thought, paragraph also must be based on one topic. It is easier to write and gives clarity when every head and every sub-head has its own paragraph while writing an essay. Whichever topic is chosen, it is better to explain it in the first sentence itself.

Remember : Paragraphs are different different for poems and prose.

Rule-II

Paragraph and the sentences in the paragraph needs to be arranged in a proper sequence.

Points to be remembered for effective paragraph writing :

- Study the topic closely and think of possible content to be covered.
- Write the first sentence in an impressive manner to arouse the interest in the reader.
- Be precise while writing and avoid drifting away from the topic.
- The paragraph must be based on a single idea.
- End with a good concluding, thought provoking sentence.
- Make sure that spacing, punctuation and capitalization are in order and the handwriting is neat and legible.

Note (Wren & Martin): A good practice is to read a chapter in a book, and give a short heading or title to each paragraph, which will express in a word or brief phrase the subject of the paragraph.

PUNCTUATION

Children with learning problems find reading a tough task, one of the reasons being not paying attention to punctuation. As they read, draw their attention to the punctuation marks in each sentence. Use the right intonation like pausing for comma, stopping at a statement (full stop), questioning and expressing excitement (exclamatory mark), to help them overcome this difficulty. Also try the sample activities given and make more of your own.

Did You Know?

The word punctuation comes from the Latin word 'punctum' which means a point.

INTERROGATIONS

Since the concept of punctuation is already introduced, help the children understand the use of question mark. Consider the following sentences –

Do you have a pen?

Who are you?

Whom do you want to see?

Whose box is this?

Which book do you want to read?

What is it about?

When did it take place?

How is your health?

Are you on a holiday?

Give practice in using interrogative words such as what, where, when, who, why, when, whose, which, do, how, will, is, are through the sample worksheets attached.

Some rules for interrogations :

Rule-I

Who – this is used for persons only.

Eg. : Who said?

Who opened the gate?

Here, in the above example, we expect the name of the person in the response.

Remember: Interrogations are used in the beginning or middle of a sentence but never at the end.

Rule-II

Which – this is used for both person and things.

Eg. : Which one is your coat?

Which one is your friend?

Rule-III

What – this is used for things only.

Eg. : What is it made of?

What did you say?

Give exercises on converting statements into questions.

Eg. : 1. Suresh went to a movie.

Where did suresh go?

2. I gave the bag to the gate keeper.

To whom did you give the bag? or

Did you give the bag to the gate keeper?

Make it a verbal exercise in groups first and then give the students written exercises.

PRECIS WRITING

Precis writing is a task involving condensing a passage to one third without distorting the main idea. Precis involves comprehension of the passage, grasping of important ideas and expressing in a simple manner. Children with

learning problems may have difficulty in getting the main idea and writing in a condensed manner.

Rules for précis writing :

- Read through the passage carefully and try to grasp the meaning as a whole.
- Count the number of words in the passage and note it down.
- Think of a title for the passage.
- Make a list of important ideas conveyed in the passage.
- Sequence the points.
- The précis should not contain ideas that are not found in the passage.
- Omit repetitions, examples, quotations or any other irrelevant points.
- Make a rough draft in points.
- Make a fair draft, write the title and copy the points into a paragraph.

To see whether you have condensed to one third, follow the steps given below.

Eg. (i) The number of words in the passage – 120.

(ii) The number of words I should get – $120/3 = 40$.

(iii) The number of words I have got = 45.

IDIOMS

Idioms enrich the language because they can be quite humorous. However, since their meaning is not literal, children with learning problems face difficulty in understanding the hidden or inferred meaning of idioms. Providing many opportunities for practice after telling them what each idiom means is very essential.

Idioms, analogies and similes add beauty to expression. Encourage children to use them. Create occasions and opportunities for using these expressions verbally and in writing.

Make hay when the sun shines!

DEFICIT LEVEL INSTRUCTION - ENGLISH

So far, sequentially teaching of an academic task was discussed. As seen earlier, deficit level instruction refers to a specific difficulty noted in a child and remedial measures taken for correction of the difficulty. Based on the findings of the NIMH screening checklist, some of the most frequently noticed difficulties by the teachers are analyzed and remedial tips which are tested and proven to be successful are given in the following pages. Remember, these are only illustrative and not exhaustive. A smart teacher in the primary school will find more creative ways in remediating the difficulties once she gains competencies in analyzing error and error patterns in the academic learning among children.

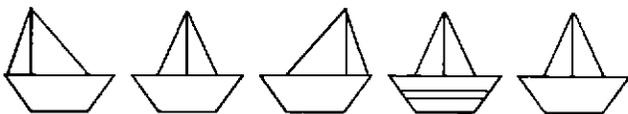
Difficulty noted :

? **Visually confuses similar looking words like 'ram' and 'ran'.**

✓ **Try this :**

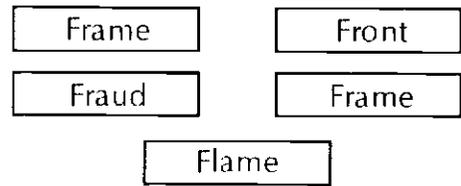
Provide the student with a variety of experiences that involve comparisons. You may begin with gross differences in size or shape such as 'ball' and 'stop' and gradually reduce the differences seen visually such as doll-ball, bat-bad and so on. Give word cards and ask him to match the same ones and separate the different ones.

Children who have difficulty in directions may also visually confuse similar looking words. To begin with, provide worksheets with differences in diagrams as seen below, so that they get sensitized.



Identify the 2 boats that look exactly the same.

Gradually move to words.



Pick the 2 word cards that have the same word.

A few exercises like this will train the student to visually discriminate whole words as well as parts. Finally remember to let him write the words he has picked correctly.

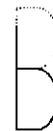
Difficulty noted:

? **Reverses or inverts letters as in d – b, m – w, u – n.**

✓ **Try this:**

Each combination of the reversal or inversion needs to be considered individually and small stories built about it to help the student. This will also sustain his interest.

For instance, b and d reversal can be corrected by telling the student, 'while writing b, start like capital 'B'. After the line, draw the top half circle without the pen touching the paper. Then draw the bottom half circle. If needed hold the student's hand and help.



When 'b' is perfected, 'd' will not cause confusion.

Another way is to tell the child to make fists of both hands with thumb erect and folded fingers facing him. Tell him to put the fisted hands on the table. He will find 'd' in right hand (d for daya (daayan) i.e., right in Hindi)

Difficulty noted :

? Spacing between words or letters is incorrect. Letters do not maintain size as they should.

✓ Try this :

Initially provide him with four rules notebook for guided writing. Sensitize him to the fact that all capital letters are of the same size, while the small letters have three levels in their size – the top, the middle and the bottom. You may draw an analogy of a conventional house as seen below :



Give him opportunities to write the letters on four lines by saying for instance – "m starts at the door and ends at the door, 'g' starts at the door and goes down the steps and comes back to the door. Letter 'h' starts at the roof and comes to the door" and so on.

Repeated exercises on all the letters will give him the idea of the letter size and direction. Once he has mastered writing this, let him write words in similar manner with guided lines.

After words lead him to write sentences. As a rule, always begin at left hand top corner to write. Cue him by a coloured dot/mark indicating begin here. After each word, let him keep the little finger of left hand – then place the pen on paper next to the finger to write the next word. Once the pen tip touches the paper, let him remove the left hand little finger and continue writing. Thus the spacing will be perfect. As he practices, use of left hand little finger will not be required.

Difficulty noted :

? Omits letter while writing. Does not find the missing letter when asked to fill in the blank.

✓ Try this :

Though both the statements above are two different problems, following strategies may help solve the problem.

When he has omitted a letter while writing read it the way it sounds. For example, if he writes 'brusing' for 'brushing', you read it to sound 'brusing', instead of saying 'you are wrong – correct it'. This will not only be amusing to him, but help him in locating the omission that has led to the pronunciation of 'brusing'. If he cannot manage give him examples of other 'sh' words like 'shut', 'dish', 'fish' and so on, pronouncing them with and without 'h'. Give him time to understand and then correct the word 'brushing' by himself. **Self correction** leads to less chances of the error repeating. Similar exercises will help in exercises on fill the blanks also.

Difficulty noted :

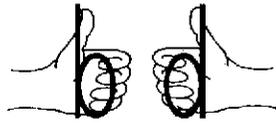
? Substitutes letters or words – k for c, f for ph, lite for light, diktashan/dictation.

Such children are usually auditory learners and therefore, spell like they hear. This will lead to not only substitution but also to omission such as anser for answer, lern for learn, teacher for teacher and so on.

✓ Try this :

One good way of helping such children is to provide intensive training in **syllabication** as mentioned earlier. This will help in preventing error as well as breaking the word in the correct place for spelling. Syllabication rules

and b in left hand (b for bayan i.e., left in Hindi)!



'u' and 'n' reversal

This can be corrected by telling the child 'u' means 'you'. You have a chin - like this  remember this. This will help him bring the 'curve' of 'u' down.

'm' and 'w' - Similarly 'm' for mountain and 'm' has peaks reminding mountains is one way of preventing m/w error. 

For various such reversals, the teacher can think of a suitable story to maintain the student's interest as well as correcting the error.

Difficulty noted :

? Transposes letters in words - 'stop - spot', 'was - saw', 'split - spilt'.

✓ Try this :

For three letter words - CVC - words sensitize the child to the sound of the first letter and its symbol. Use word tiles like in scrabble for this purpose. Let him identify the letter responsible for the first sound, pick it up and place on the board. The rest of it will naturally follow correctly.

Give a number of exercises with CVC words.

Say

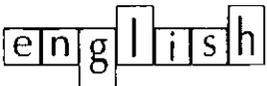
| CVC | Pick letter | Fill rest of the word |
|-------|-------------|-----------------------|
| s a w | s | saw |
| w a s | w | was |
| p o t | p | |
| t o p | t | |
| p i t | p | |
| t i p | t | |

For 4 or 5 letter words, sensitize the child to letter blends in words.

| | complete the word |
|--------------------|-------------------|
| split pick sp | |
| step pick st | |
| crab pick cr | |

When the initial letter/letters are correct, the rest will be easy.

To improve spelling:

- Fill in the blank - rec__ __v __ (e, e, i).
- Word pools to form sentences.
- Colour codes for vowels and consonants.
- Configuration ("look of the word") 
english
- Proof reading.
- Structural analysis - syllabication.
- Use of rhythm - guided by teacher.
- Word games - scrabble, boggle, word search. Jigsaw puzzle
- Spelling tricks - to remember the spelling of 'assassination', once a student told 'After the ass one more ass, then I (me) then nation!' ass-ass-i-nation. This way, confusion on number of s's which is normally a problem in such words can be eliminated.
- Acronyms - teach acronyms for difficult spellings - "a rat in the house might eat the ice cream" is an acronym for arithmetic!! (arithmetic is one word frequently spelt wrongly).

like, "when a consonant repeats, break between the two consonants as in 'run/ning', 'stop/ped', 'suc/cess' and so on are easy to follow and will reduce error (see worksheets)".

For c/k, substitution errors, phonetic rules need to be taught – c followed by a, o and u will have k sound and if followed i, e and y, will have 's' sound. Example:

| c with 'k' sound | c with 's' sound |
|------------------|-------------------|
| <u>c</u> ater | <u>c</u> ycle |
| <u>c</u> ube | <u>c</u> ertain |
| <u>c</u> one | exerc <u>is</u> e |

A number of opportunities with examples need to be given.

Similarly, words having 'ph' for 'f' sound can be taught using word building games asking the children to enlist as many words as possible.

Tell the student that you would dictate a list of words that will all be starting with 'f'. Then follow it by 'ph' words – to begin with as initial sounds, and later middle and ending sounds.

| | |
|-----------|------------|
| full | phone |
| finish | phrase |
| fat | tom |
| fit | photograph |
| furniture | physics |
| follow | |
| feast | |

When you are sure that he writes these words without error, give combination of 'f' and 'ph' words for dictation. Practising through dictation, word building and word games will improve the learning and retention of right spelling.

As a rule, while teaching English, teach 'Every rule has an exception in English'. For each

lesson, after he masters the rule, ask him to find the exception. In this case, other letter combinations giving 'f' sound – such as enough, tough, rough, laugh. Allow the student to build on more words. Explain if it can be in order. The above sounds are all ending sounds of 'gh' and not beginning sounds. Now, move to comparing ending 'gh', 'ph' and 'f' sounds – laugh, graph and staff.

Another commonly found difficulty is confusing 'ite' and 'ight' words. As in 'f' and 'ph' provide word building or dictation – first only with 'ight' words, then 'ite' words and finally on mastering the combination of words. Give rule of silent 'gh' and ending 'e' for easy understanding.

| | |
|----------|---------|
| sight | invite |
| night | site |
| light | rite |
| fight | white |
| eight | bite |
| straight | cite |
| insight | granite |
| right | kite |

When there are words sounding the same with both 'ight' and 'ite' combinations such as right/rite, might/mite, sight/site, tell the word, form a sentence meaningfully with it and say the word again, so that the student understands which word you are referring to. For instance,

Right - His teacher said that he was right – right.

or

Rite - He performed the last rites of his father – rite.

Giving opportunities through narrating instances and asking the student to pick the right word will also help in correcting the error.

Eg. To celebrate Idd, Raheem had to _____ the moon (site/sight).

The trick is to teach one rule at a time, let the student master it, and then teach the related next rule. When both are learnt, give exercises combining both rules and let him choose and use the correct one.

When combination of different letters tend to produce similar sound, the best way to learn the correct spelling is by learning to visually remember the spelling. Sample worksheets are given here. Such worksheets can be prepared. Repeated drill and practice will improve spelling of such seemingly difficult words.

Sample Worksheet

Group the words as shown below :

I. 'f' sound

| -gh | -ph | -f |
|---------|---------|--------|
| 1 laugh | 1 graph | 1 fall |
| 2 | 2 | 2 |
| 3 | 3 | 3 |
| 4 | 4 | 4 |
| 5 | 5 | 5 |

II. silent 'w'

| -o | -ow |
|-----------|----------|
| 1 buffalo | 1 follow |
| 2 | 2 |
| 3 | 3 |
| 4 | 4 |
| 5 | 5 |

III. 'j' sound

| ge- | je- |
|-----------|-------|
| 1 general | 1 jet |
| 2 | 2 |
| 3 | 3 |
| 4 | 4 |
| 5 | 5 |

Skill : Visual discrimination and spelling.

Sample Worksheet

In each list of words, circle the same word as in the box.

| | | |
|---|---|---|
| house | comet | lengthy |
| hose | come | long |
| horse | closet | longing |
| house | clown | lengthy |
| home | comet | lecture |

| | | |
|--|---|--|
| tortoise | respect | pledge |
| torture | rupture | plate |
| tortoise | radish | plane |
| technique | respect | planet |
| trouble | reward | pledge |

| | | |
|--|---|--|
| engine | queue | multiply |
| engage | queen | market |
| engine | quote | muscle |
| enough | squint | mercury |
| enjoy | queue | multiply |

Skill : Visual discrimination, spelling.

Sample Worksheet

Group the words as shown below :

| | |
|-------------|-----------|
| I. -tion | -sion |
| 1 attention | 1 tension |
| 2 | 2 |
| 3 | 3 |
| 4 | 4 |
| 5 | 5 |

| | |
|-----------|--------|
| II. -ight | -ite |
| 1 light | 1 kite |
| 2 | 2 |
| 3 | 3 |
| 4 | 4 |
| 5 | 5 |

| | |
|--------------|----------|
| III. ph- | f- |
| 1 photograph | 1 forest |
| 2 | 2 |
| 3 | 3 |
| 4 | 4 |
| 5 | 5 |

Skill : Visual discrimination

Difficulty noted :

? **Comprehension of what is read, is poorer than reading ability.**

✓ **Try this :**

Allow the student to read a para consisting of 3-4 lines with sequential events. Ask him to say in his own words what he read. Initially you may ask questions leading to correct response. Gradually reduce support.

Make sure the reading material is interesting – like a story, initially. Direct his attention to finer details through your questions. If the paragraph says 'Lata was sitting under a tree which was filled with leaves, flowers and fruits. As she was wearing a green saree no one who passed by noticed her', ask questions such as 'why no one saw Lata?', 'Where was she?' and so on. This will help in improving 'thinking skills' in the student in addition to comprehending the material read by him.

Allow loud reading initially and once he has begun to comprehend, gradually encourage silent reading. Many auditory learners like to 'hear' themselves for processing information and will tend to read aloud. It is perfectly acceptable in the initial stages, but has to be checked, gradually as it will be a disturbance in the class later.

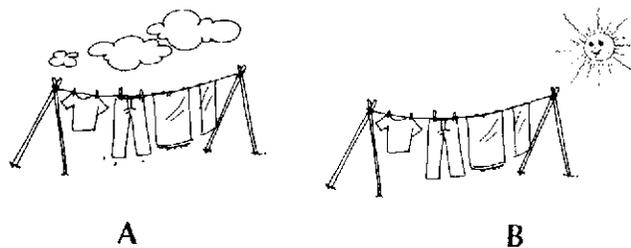
Difficulty noted :

? **Does not seem to understand what is taught.**

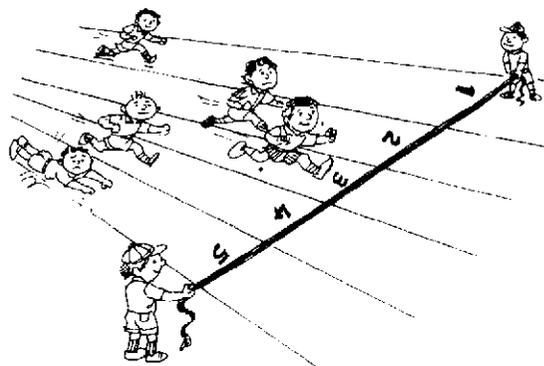
✓ **Try this :**

This is a conceptual deficit. It needs intensive training in thinking skills. Develop a number of exercises that need analytical thinking. For children in preprimary class give exercises as below.

Which of these will dry faster? A or B



Who will win?



As the student gains mastery give written work as seen below:

Follow example and write :

Object/person purpose

- Eg. 1. Mirror Reflects figures in front
2. Plate
3. Mango
4. Car
5. TV
6. Father
7. Watchman
8. House
9. Mountain
10. River

Encourage him to think on his own and respond. Do not provide answer from textbooks. Based on his responses, ask questions for self-correction of errors or arriving at new responses. Once thinking skills improve understanding of various concepts will also improve.

Difficulty noted :

? While writing, usually omits ending 'e' (as in crate, pile), silent letters (as in through, fought, knife, duck) or consonant that repeats (as in dress, command, butter, rabbit).

This kind of problem is usually found in auditory learners, who spell the way a word is pronounced. Therefore, those letters present in the word without their sounds heard are omitted by the student.

Another reason for this error can be the lack of synchrony in the student's thinking and writing. That is, he may be thinking faster than his writing speed. Suppose he has to write 'Ramu is a brave boy', by the time he writes Ramu his thought process will be in the next word. To catch up he may tend to drop letters or words thus resulting in sentences like this – 'Ram is brav boy', 'Ramu a brav by' and so on.

Therefore, first find out why error occurs, is it due to being an auditory learner and therefore, phonetic spelling or due to mismatch of thinking and writing speed.

✓ Try this :

If the student is an auditory learner, a number of exercises on syllabication, identifying root words and word building games will help.

If the problem is related to speed of thinking and writing, allow the student to say clearly each word and write. When he says loudly, thinking speed will slow down and he will tend to say the next word only on completion of writing the previous word thus preventing omission. When the errors have reduced, tell him to say the words silently while writing.

Difficulty noted :

? Difficulty in auditory discrimination as in 'mat for bat', 'pin for tin', 'lamp for lamb', 'var or war'.

✓ Try this :

Many a time such problems can be due to mispronunciation by the teacher. If the child is taught the pronunciation of a letter symbol by drawing his attention to the organs in the mouth (lips, tongue, teeth) and let him feel pronouncing a letter, the error will be minimized (see section on sound production). For instance, the sound of 'v' is produced by having the lower lip touching the upper teeth while sound of 'w' is produced by rounding the lips and saying the sound. If this message is got across to the child at the early learning stage the discrimination of the sounds of 'v' and 'w' will not be a problem. The teacher may model initially and the children will imitate. Later the teacher may say the word and children can decode spelling.

For discrimination of 'pa' and 'ta' or 'ma' and 'na' sounds, encourage the child to watch you initially when you say and then spell the word. First give him pairs of words that sound differently and ask him to say whether you said the same word or different words. A list of such words can be :

- | | |
|----------------------|--------------------|
| 1. lame – same | 2. good – good |
| 3. fight – sight | 4. blame – flame |
| 5. swallow – shallow | 6. toy – toy |
| 7. got – fought | 8. double – bubble |

When he masters this exercise, move to next level – let him not look at you when you say the pairs of words and let him try to respond – same or different.

Follow it with writing exercises.

Difficulty noted :

? Confuses with words that sound the same but spelt differently as in site-sight, grown-groan, sum-some, right-write, ear-year, here-hear.

✓ Try this :

When words and spellings are taught in context, this problem can be avoided. When these words are introduced, build a sentence with it. If it is first of the two words, explain the word. Say - grown,

grown - you are a grown up boy.

The plants here grown tall.

The **root word** is grow.

Can you build sentences?

Strengthen with such exercises.

When the second word 'groan' is introduced first ask,

'Do you know another word that sounds the same? What does it mean? How do you spell? Can you say a sentence with it?'

When this is done, introduce 'groan'.

groan - Watch the difference in spelling. Can you tell me the difference? Good.

This means, a sound made when one is in discomfort uncomfortable or in pain.

'What sounds do you make when you are in pain?'

Listen to them and point to the ones that represent a groan and say '_____ is groaning'. '_____ too is groaning'. Thus they get the meaning. Let them form sentences.

While dictating such words that have more than one spelling and meaning always follow the steps as given below.

1. Say the word clearly.
2. Form a sentence in context with it.

3. Say the word again.

Example, bare - bear.

1. bear.
2. Polar bear is found in the north pole.

3. bear

or

1. bare
2. He walked with bare feet.

3. bare

This will help the child learn the words correctly in context and reduce error.

Difficulty noted :

? Does poorly on paper and pencil tasks. Dislikes writing.

✓ Try this :

Provide reading material suitable for his age and interest to motivate him.

Let each reading be followed by writing involving interesting exercises such as:

- Find the words that start with 'd' and write.
- Find the words that end with 't' and write.
- Locate and write all nouns in the passage and so on.

These are usually easy and he will be successful. This will motivate him to write further.

Now, give writing exercises with same passage such as :

- Find a noun and write a new sentence.
- Convert the first sentence into past tense.
- Change the names of key characters and rewrite the passage.

By doing so, gradually you are improving his writing from words to sentences allowing partial scope for copying and partly being original. Use the worksheets given in this manual.

All the way through, remind him of basic rules:

1. Start writing on the left side maintaining the line.
 2. Capitalization – proper noun, beginning of sentence and during highlighting.
 3. Letter size.
 4. Spacing and
 5. Punctuation.
- Do not mark errors on the paper.
 - Prompt him to locate error by himself – by leading questions.
 - After he corrects reward him.

Children do not like negative markings by the teacher on their written work.

You may also give a stimulus picture and related vocabulary word pool and ask the student to write a few lines about the picture taking the help of the words provided.

Difficulty noted :

? Has very limited attention. Does not complete the given task. Does not sit at a place for required time.

✓ Try this :

- Seat him in a place with less distraction (not facing or nearer to window).
- Seat him at a distance where frequent eye contact with the teacher is possible.
- For concentrated work seat him in a corner facing the wall.
- Doing home work should not be requiring beyond 30 minutes. If longer, advise parents to give him a break of 15 minutes and then continue with the rest of the home work.
- While giving instruction get his eye contact. Give short telegraphic instructions. Tell him to repeat what you said before he starts to carry out instruction.
- Discourage doing more than one activity at a time such as doing home work and watching TV.
- Inculcate the habit of regular playing or nonstressful exercises.
- Provide opportunities for solo work such as gardening or painting.
- If he is found to be too stressed, allow sleep or rest for a while to calm him.

To remember the nine planets easily in order remember the following :

"My Very Educated Mother Just Showed Us Nine Planets"

First letter of each word represents the planet beginning with Mercury.

ERROR ANALYSIS

Teachers have to be sensitive to the errors students commit. Usually when dictation exercises are given, the focus is on the correct words to arrive at scores. If the teacher is tuned to focus on the wrong words, she will find some clues to her students problems. Look at the example below.

Dictation

| Given word | Written by student | |
|-------------|--------------------|---|
| grapes | grapes | ✓ |
| mountain | mountan | ✗ |
| below | belo | ✗ |
| expensive | expensiv | ✗ |
| exact | exat | ✗ |
| tender | tender | ✓ |
| biscuit | biscut | ✗ |
| redicule | redicul | ✗ |
| honest | honest | ✓ |
| temperature | temperatur | ✗ |

3/10

This is typically how a teacher marks errors.

Now, let us analyze the errors.

1. Watch the correct words. They are definite sounds and can be syllabicated easily.
2. Note the type of error in the wrong ones. The following is revealed.

- a) All words have omissions.
- b) Out of 7 words 5 omissions are vowels.
- c) Out of 5 omitted vowels, 3 are ending e, showing silent e rule is not followed.
- d) The other two vowels omitted namely 'i' in mountain and 'i' in biscuit can be due to either mispronunciation by the person dictating or the child not having mastered 'ai', 'ui' words.
- e) Out of the 2 consonants omitted one is silent ending (w) and the other is not stressed in pronunciation ('c' in exact).

By this, you can infer that the student has a **single** difficulty – omission. If we classify the omission, it falls into 2 categories – (1) ending 'e' and silent letters, (2) lack of awareness on use of vowel diphthongs of 'ai', 'ui'. Therefore, teacher here has to just focus on correction of omission with stress on ending 'e', silent letters and 'ai', 'ui'.

Seven errors out of ten are infact due to **one** root cause – omission. Such error analysis by the teacher will certainly help in pinpointing to exact problem in the student and eliminating it totally.

Therefore, analyze errors! Do not make the students write the word 10 times like a punishment. Instead, find the cause, analyze and correct the error. See the box for some more tips in error correction.

Error analysis and correction

| Given word | Written word | May be due to | Correction |
|------------|--------------|---|---|
| 1. might | mite | <ul style="list-style-type: none"> • Not aware of 'ight' rule. | <ul style="list-style-type: none"> • Exercises on 'ite', 'ight' words. |
| 2. shop | chop | <ul style="list-style-type: none"> • Auditory discrimination. • Not aware of digraph rules. | <ul style="list-style-type: none"> • Exercise on 'sh', 'ch' words – 'sh' first then 'ch' and finally combination. |
| 3. casual | causal | <ul style="list-style-type: none"> • Sequential memory deficit. | <ul style="list-style-type: none"> • Syllabication exercises. |
| 4. Saw | was | <ul style="list-style-type: none"> • Reversal. | <ul style="list-style-type: none"> • Stress and focus on first letter sound and symbol. |
| 5. wonder | monder | <ul style="list-style-type: none"> • m/w reversal | <ul style="list-style-type: none"> • Writing exercises for m/w with direction of starting indication or colour code. |
| 6. gate | gat | <ul style="list-style-type: none"> • Not aware of silent 'e' rule. | <ul style="list-style-type: none"> • Drill and practice on silent 'e' rule. |
| 7. cool | kool | <ul style="list-style-type: none"> • Visual memory deficit. | <ul style="list-style-type: none"> • Ample visual exposure of 'c/k' words and writing exercises. |
| 8. willing | wiling | <ul style="list-style-type: none"> • Omission of repeating consonant | <ul style="list-style-type: none"> • Syllabication (to break between 'l' and 'l'). |

Difficulty noted :

? **Makes mistakes when two vowels are together in a word.**

• **Try this :**

C V V C - Consonant - Vowel - Vowel - Consonant is one of the most frequently used combination in words. Some combinations are:

| | | | |
|------|------|------|------|
| ea | oa | ou | ai |
| read | roam | soul | rain |
| lean | boat | noun | bail |
| beat | goal | tour | main |
| seat | soar | sour | mail |
| neat | loan | four | fail |

'ea' and 'oa' words generally will have the first vowel as a long vowel while the second vowel is silent, as seen above. To have the children remember this, write on the blackboard:

"When two vowels go walking,
first one does the talking".



Drawing little figures of first vowel with open mouth and next vowel with closed mouth will help children visually remember the cue. The two line rhyme will help as an auditory cue when you read out.

When the child masters this, teach the variations.

CVVC

real

dear

near

'r' and 'l' are loud vowels. Therefore, some times when they are at the place of last consonant, it influences the quiet vowel. When quiet vowel speaks, the first vowel becomes a short vowel!

This way, the child will remember the rule well.

Lastly, teach vowel blends becoming **digraph** - a **digraph** is a new sound produced by blending two sounds as in bear, bread and so on. Tell the student to find words that are exception to rule, if any.

'ou', 'ai' are easy to spell as they usually indicate combination of vowels by their sounds. Practice in such words help in improving spelling.

In CVVC combinations, when vowels repeat it becomes a long vowel as in boot, fool, teen, tool, but watch out for the following.

Look at the lists below :

| | | |
|-------|------|-------|
| loot | book | floor |
| moon | look | door |
| room | took | |
| shoot | food | |
| nook | foot | |
| noon | | |
| boot | | |

You notice that 'oo' can be a short vowel sound, a long vowel sound or long 'o' sound.

As is the rule 'every rule has an exception!'.

Whenever, such exceptions are to be taught, first make sure that the student masters the rule, then introduce the exception!



Circle the one that is the same as the one in the box

| | |
|--|--|
| | |
| | |
| | |
| | |
| | |
| | |

Skill : Directionality.



Tell the position of the milkplate and the cat.
Write the name of the cat correctly in the statement below :



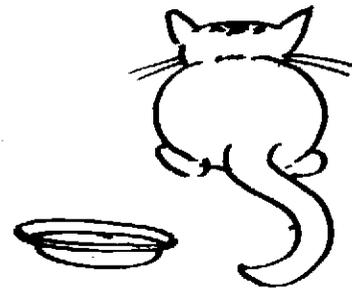
Rosy



Tommy



Kitty



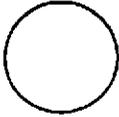
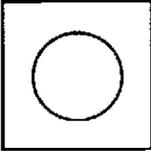
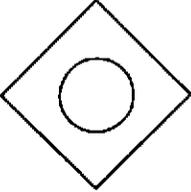
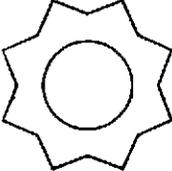
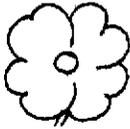
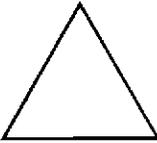
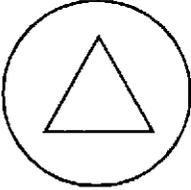
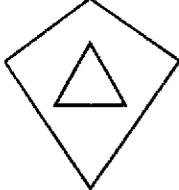
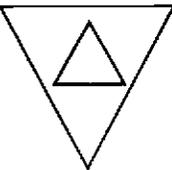
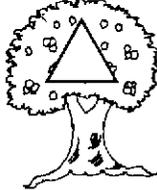
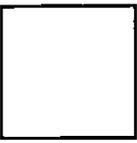
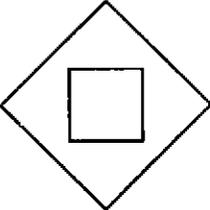
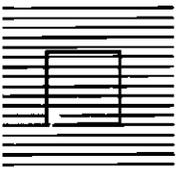
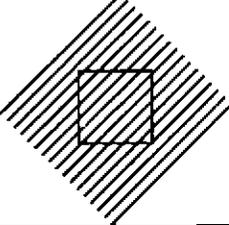
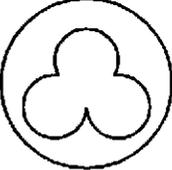
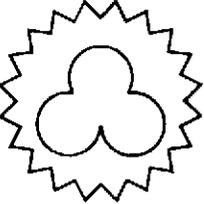
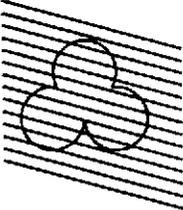
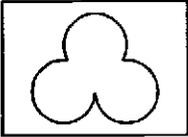
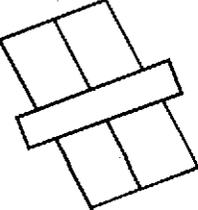
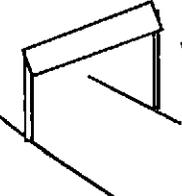
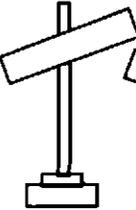
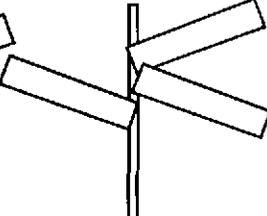
Patchy

1. Milk plate is in front of _____
2. Milk plate is behind _____
3. Milk plate is to the right of _____
4. Milk plate is to the left of _____

Skill : Spatial relationship.



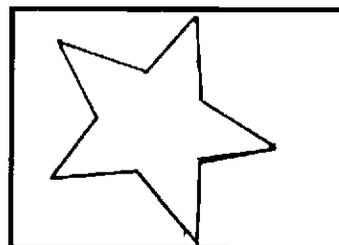
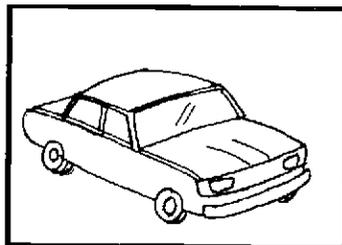
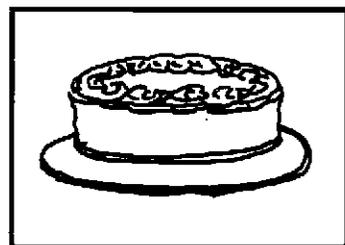
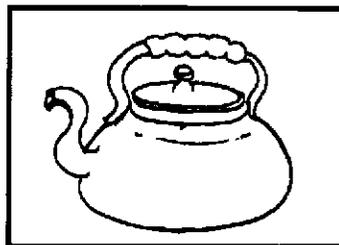
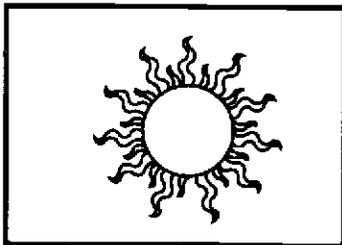
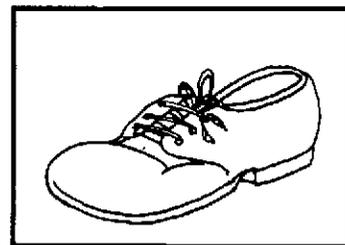
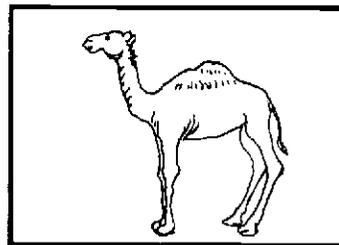
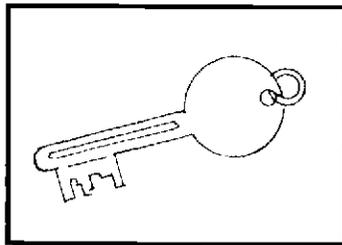
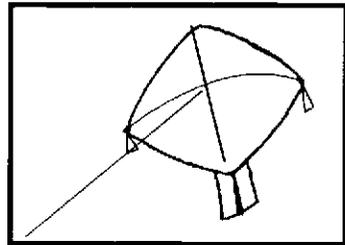
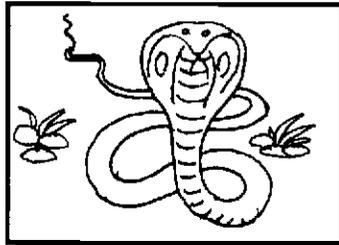
Look at the design in the left. Colour similar design in the diagrams on the right in each row.

| | | | | |
|---|---|---|--|---|
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

Skill : Figure ground perception.



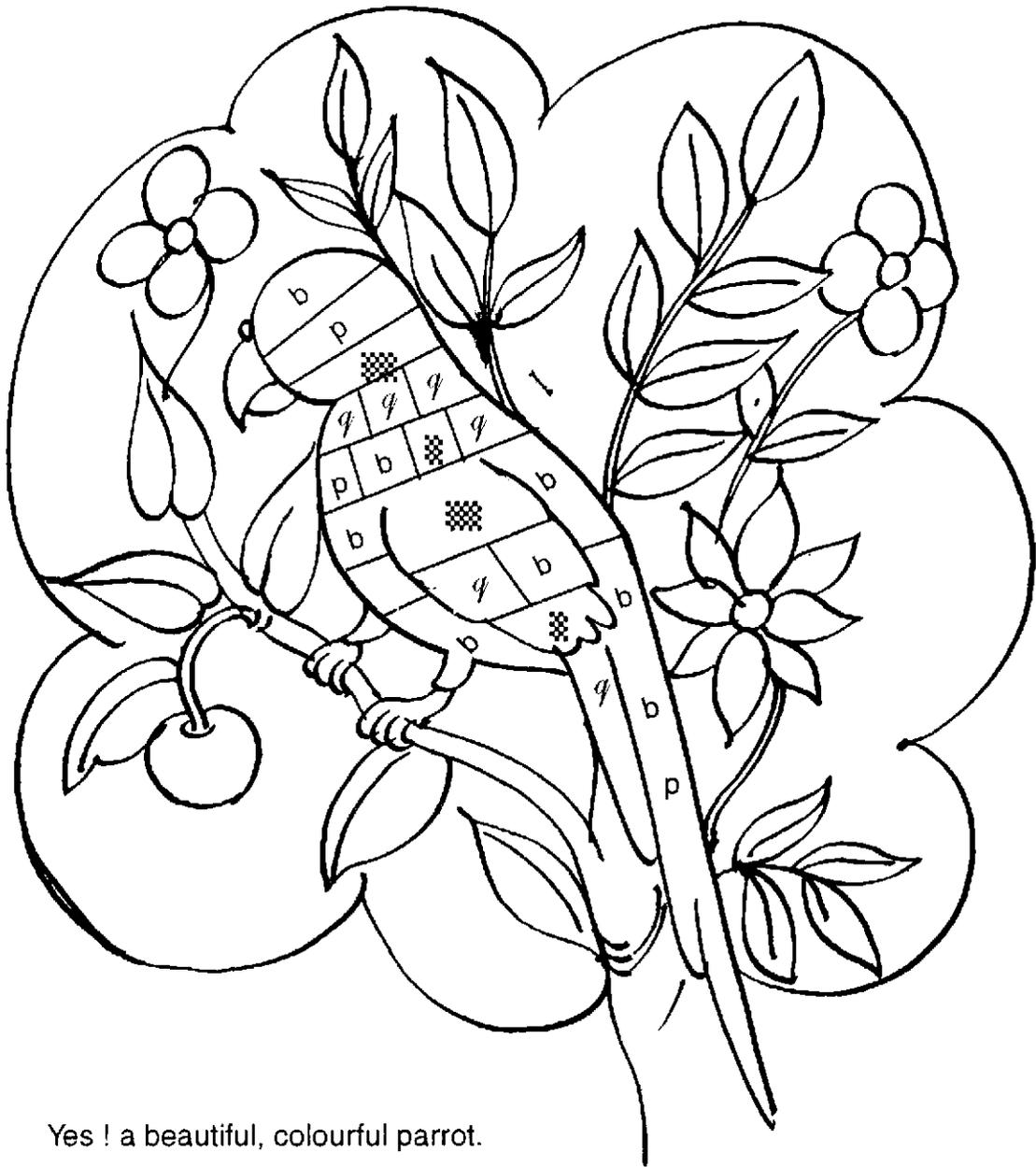
Tell the name of the picture and colour the pictures that start with letters C - red, S - blue, K - yellow.



Skill : Auditory discrimination



Colour 'b' - blue, 'd' - green 'p' yellow and 'q' red
What do you see ?

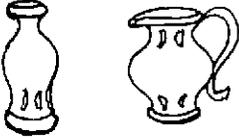
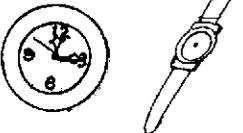
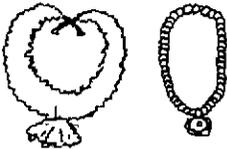
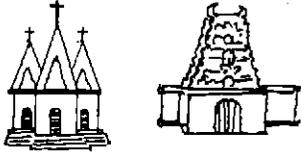


Yes ! a beautiful, colourful parrot.

Skill : Visual discrimination.



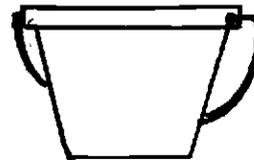
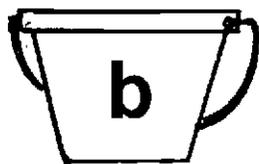
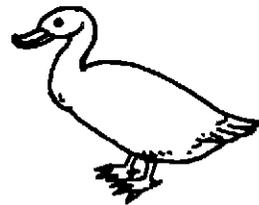
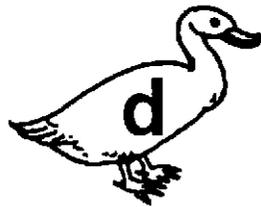
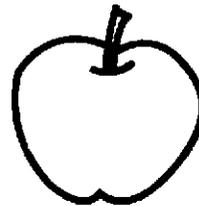
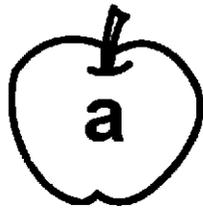
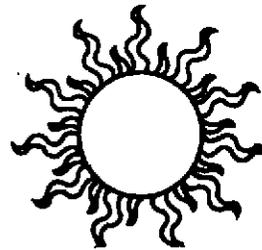
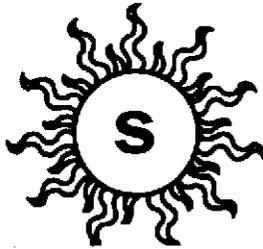
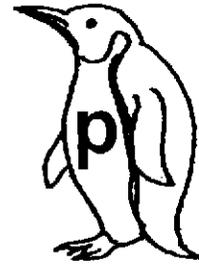
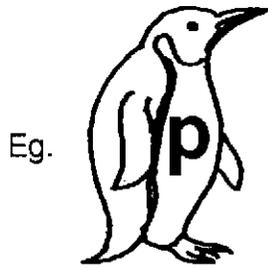
In each row name one similarity and one difference.

| | |
|---|---|
| <p>1.</p>  | <p>Similar : _____</p> <p>Different : _____</p> |
| <p>2.</p>  | <p>Similar : _____</p> <p>Different : _____</p> |
| <p>3.</p>  | <p>Similar : _____</p> <p>Different : _____</p> |
| <p>4.</p>  | <p>Similar : _____</p> <p>Different : _____</p> |
| <p>5.</p>  | <p>Similar : _____</p> <p>Different : _____</p> |
| <p>6.</p>  | <p>Similar : _____</p> <p>Different : _____</p> |

Skill : Similarities and differences. Based on ability of the child, make the exercise verbal or written.



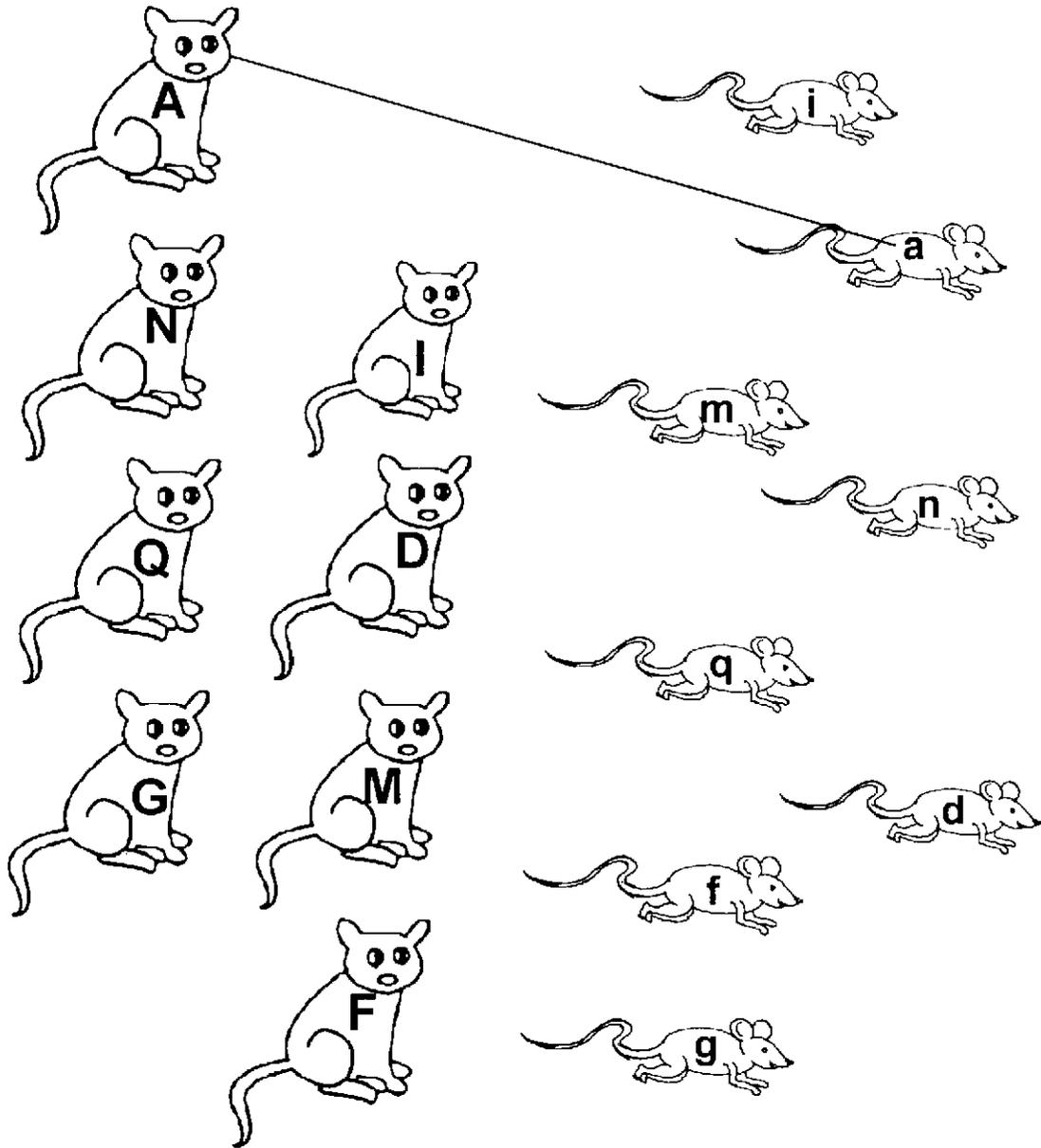
Copy the alphabet.



Skill : Copying.



Match the capital letter with the small letter.



Skill : Capital and small letter .



Write the letters in correct order

START

a ○ ○ d ○ ○

○ h ○ ○ ○ ○

m ○ ○ ○ ○ ○ ○

○ t ○ ○ ○ ○ ○ ○

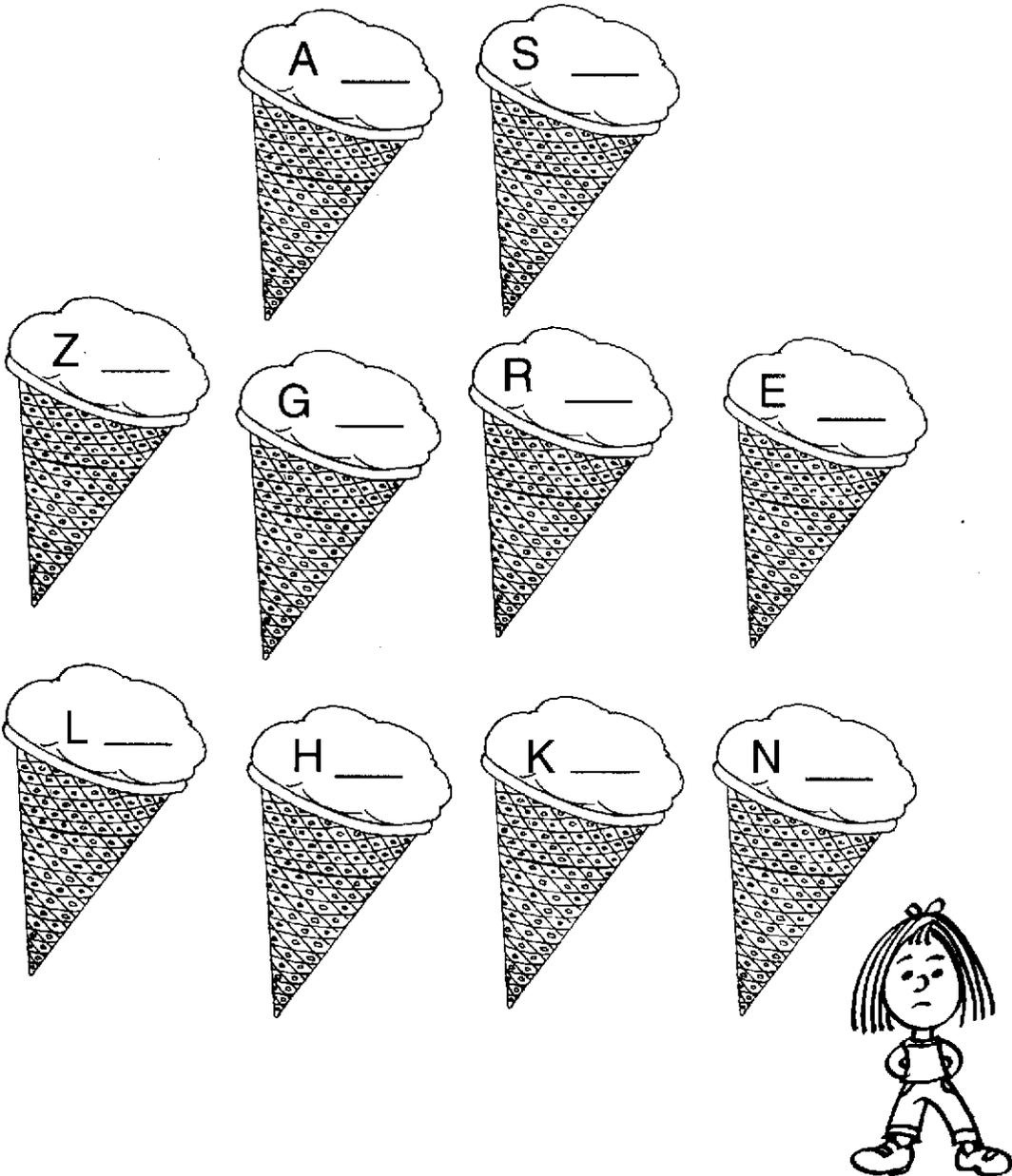
y ○

FINISH

Skill : Writing small letters.



In each ice cream scoop,
write the small letter of the given capital letter.

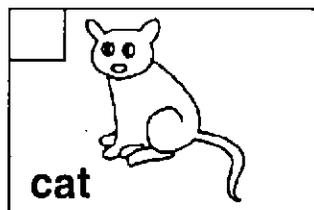
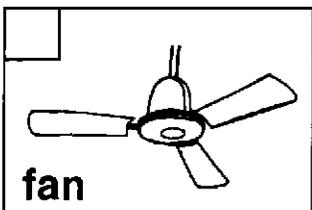
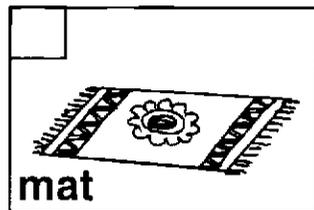
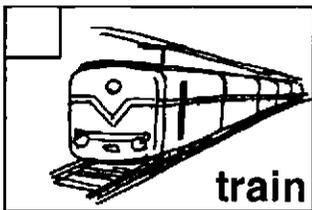
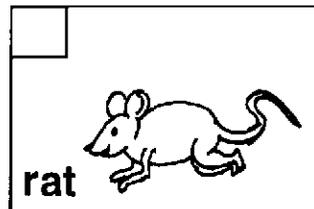
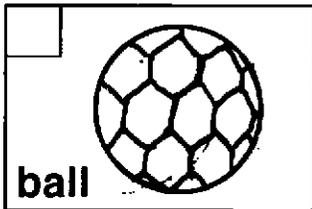
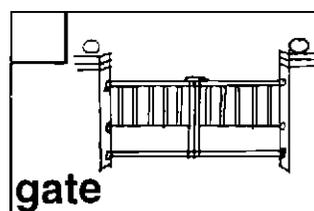
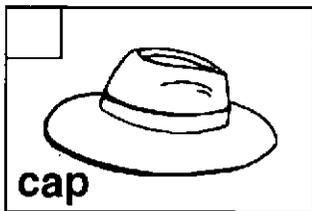
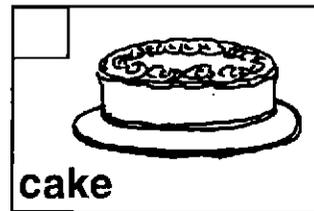
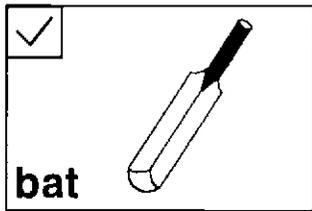
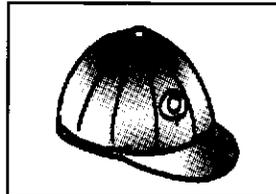


Skill : Capital - Small letters.



Tick the picture if the 'a' in it sounds as in cap.

cap

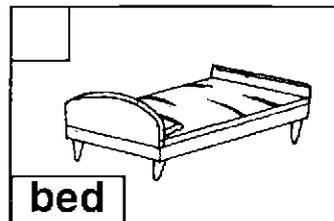
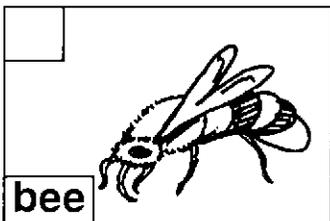
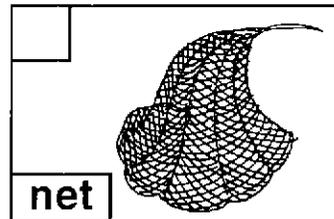
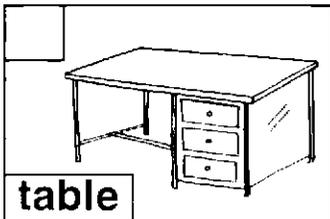
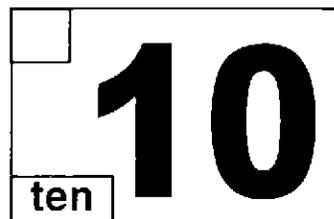
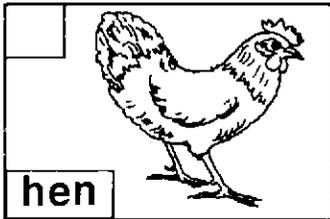
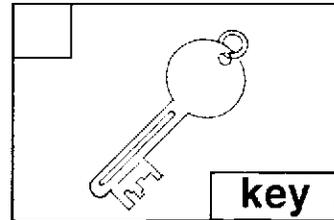
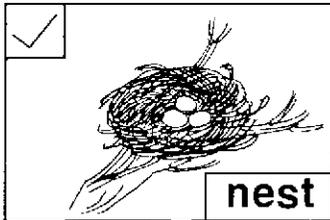
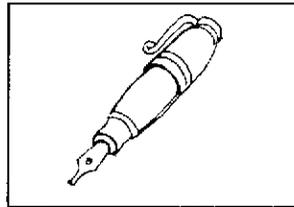


Skill : Auditory discrimination.



Tick the picture if the 'e' in it sounds 'e' as in pen.

p e n

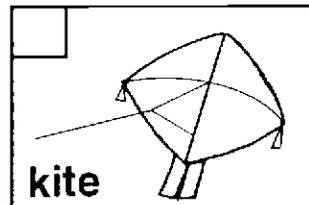
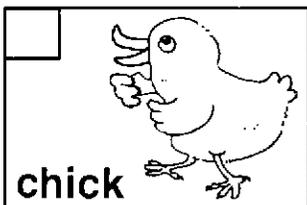
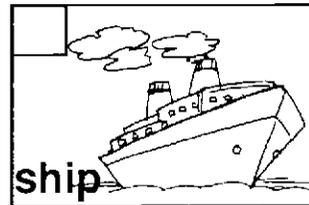
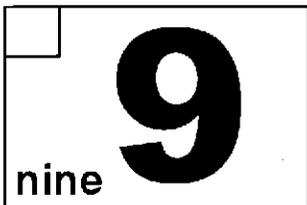
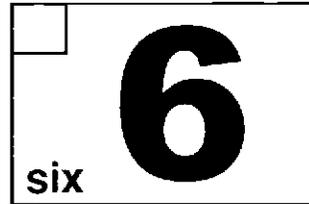
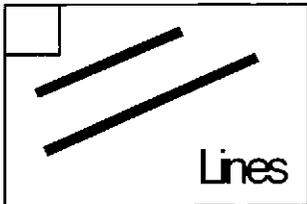
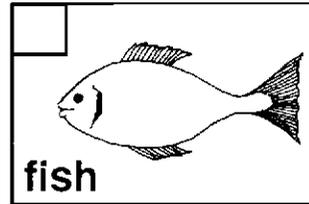
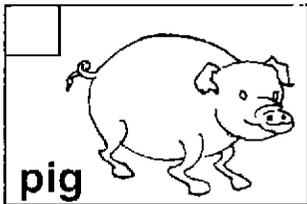
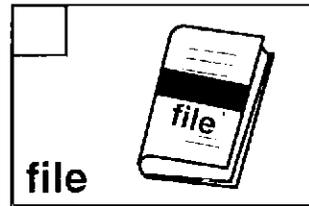
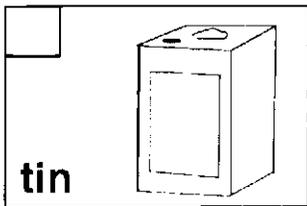
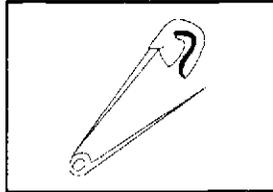


Skill : Auditory discrimination.



Tick the picture if the 'i' in it sounds as in Pin.

p i n

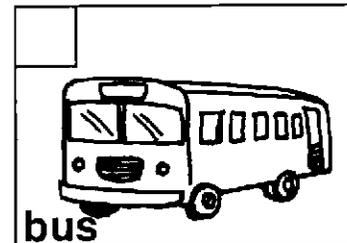
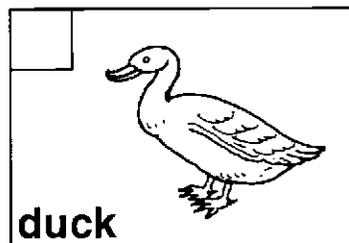
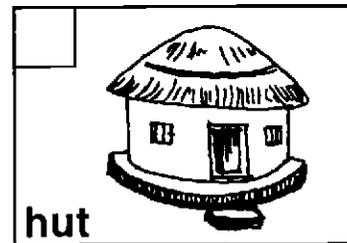
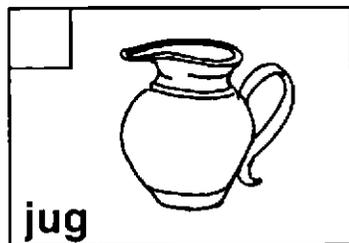
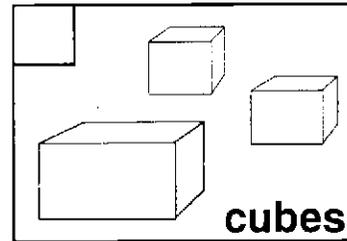
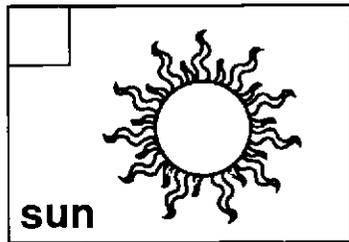
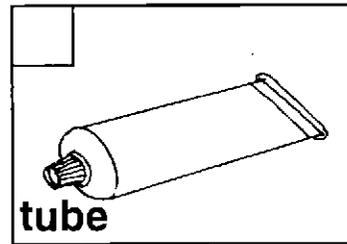
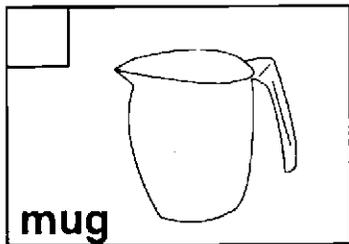
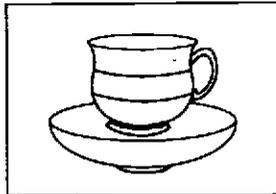


Skill : Auditory discrimination.



Tick the picture if the 'u' in it sounds as in cup.

Eg. **cup**

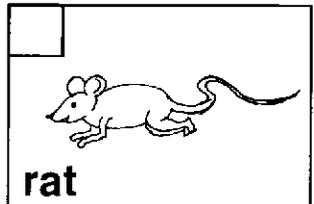
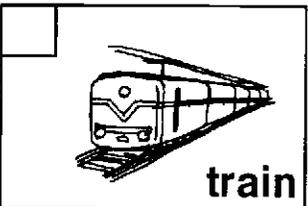
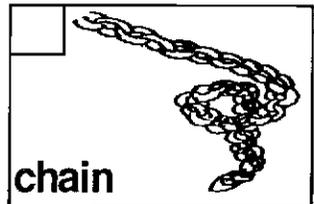
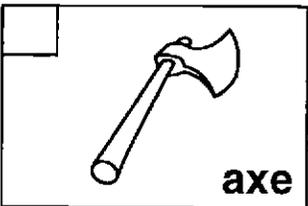
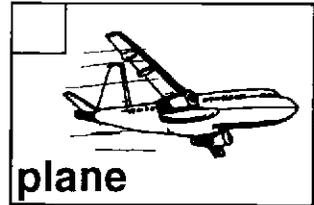
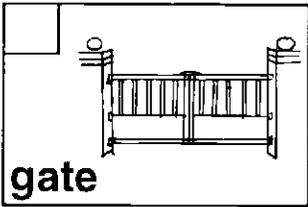
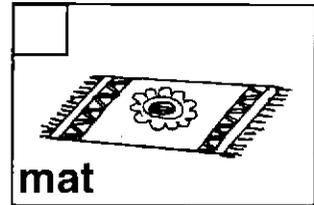
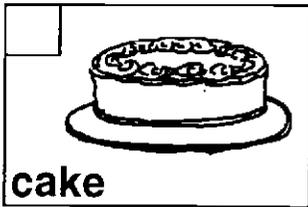
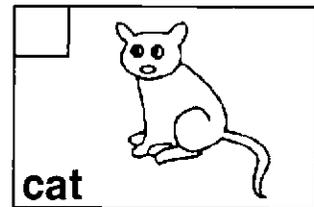
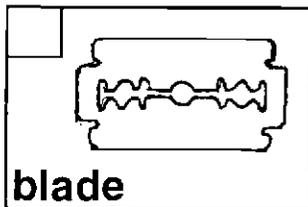
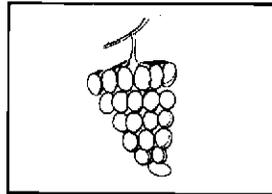


Skill : Auditory discrimination.



Tick the picture if the 'a' in it sounds as in grapes.

Eg. gr a pes

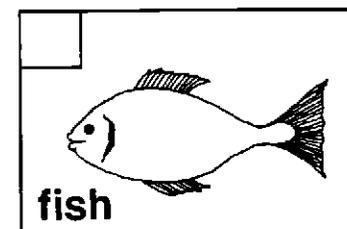
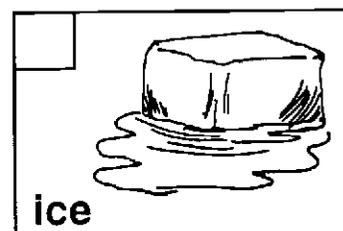
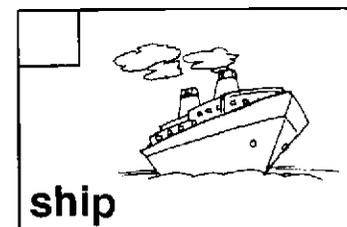
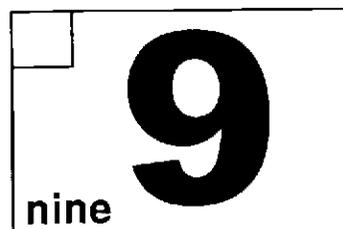
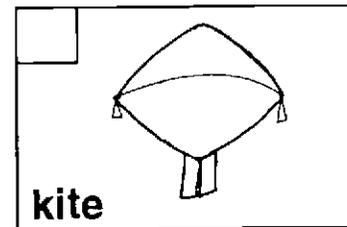
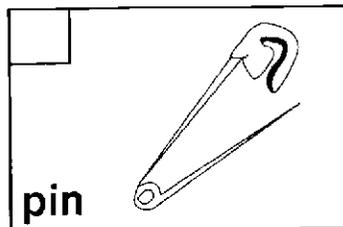
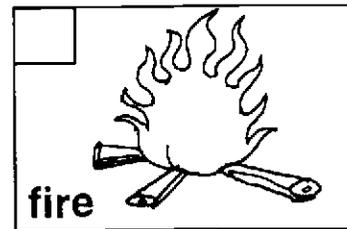
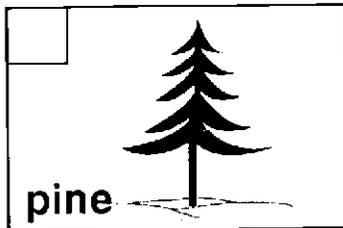


Skill : Auditory discrimination - long 'a'.



Tick the picture if the 'i' in it sounds as in five.

Eg. f i ve

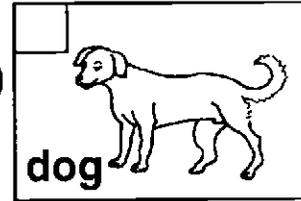
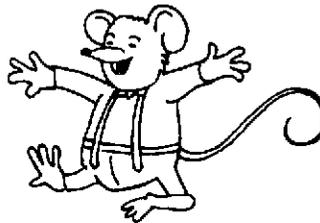
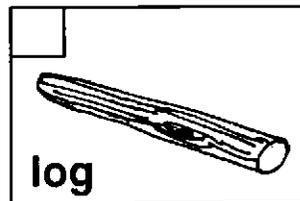
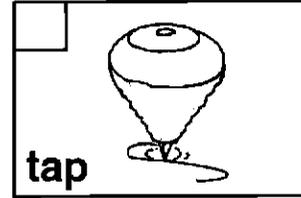
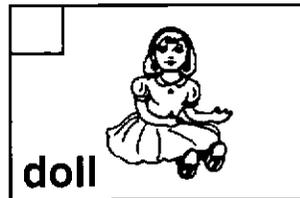
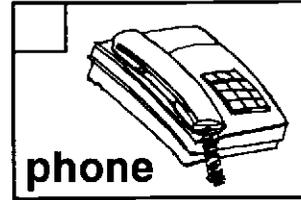
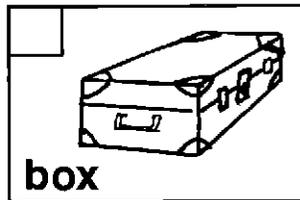
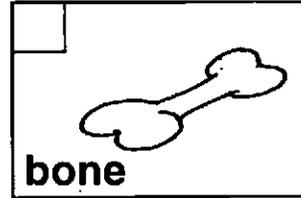
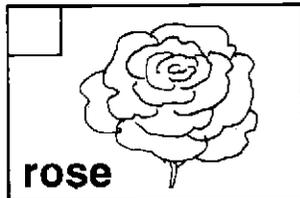
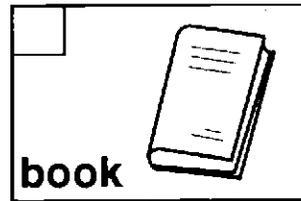
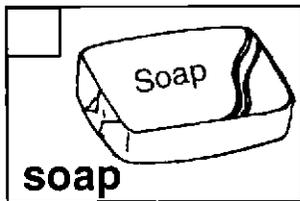
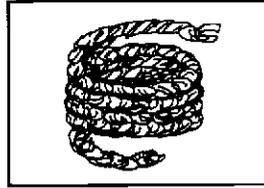


Skill : Auditory discrimination - long 'i'.



Tick the picture if the 'o' in it sounds as in rope

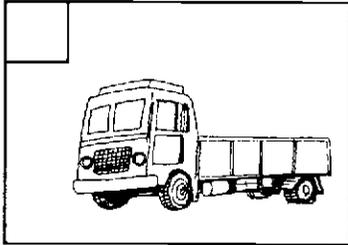
Eg. r o pe



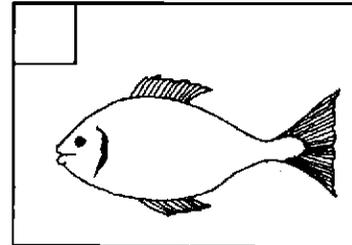
Skill : Auditory discrimination - long 'o'.



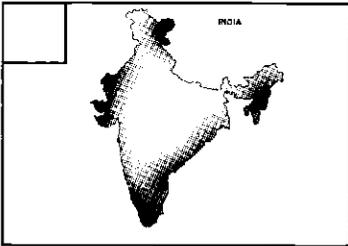
Circle the word that names each picture.



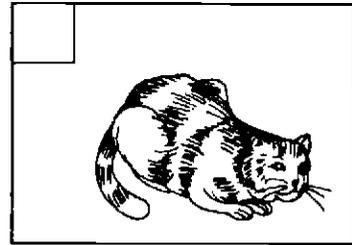
Trick Truck



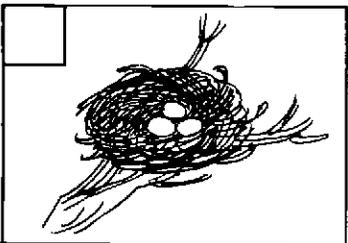
Fish Fush



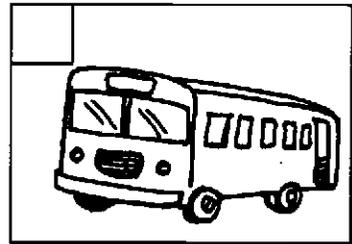
Mop Map



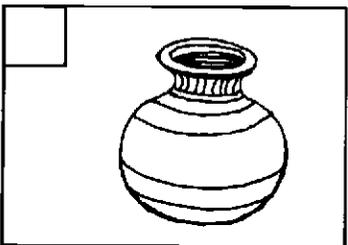
Cat Cot



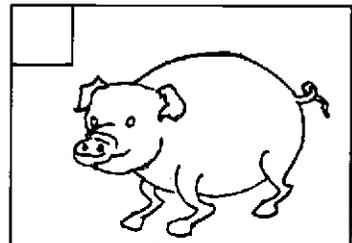
Nast Nest



Bos Bus



Pot Pet

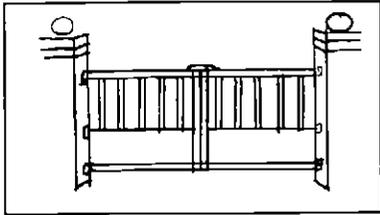


Pig Pog

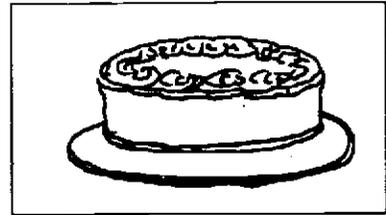
Skill : Reading comprehension.



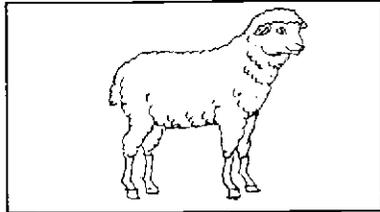
Circle the word that names each picture.



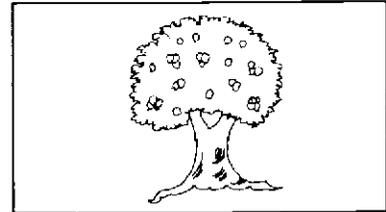
gate make



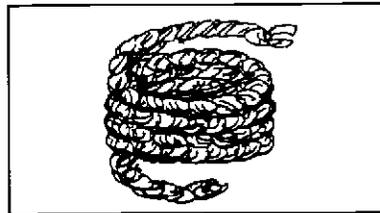
lake cake



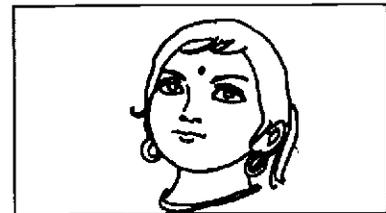
leep sheep



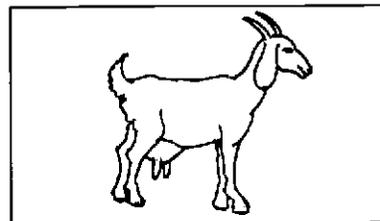
key tree



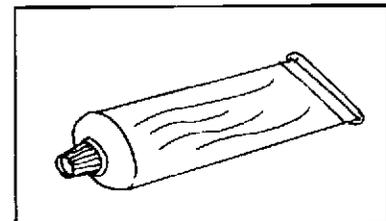
rope mope



face fase



boat goat

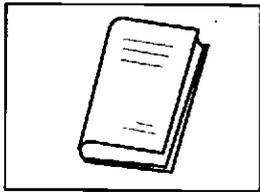


tube tub

Skill : Reading comprehension.



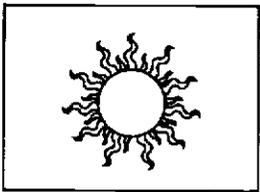
Circle the word that names the picture.



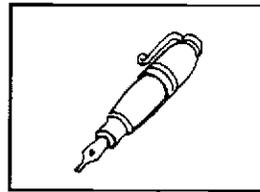
look book



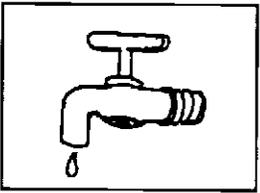
boy toy



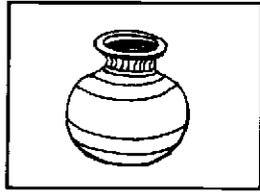
moon sun



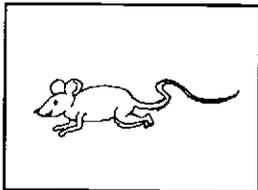
pen hen



tap lamp



mat pot



bat rat

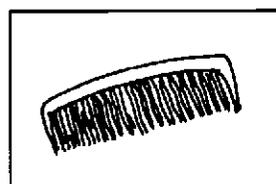
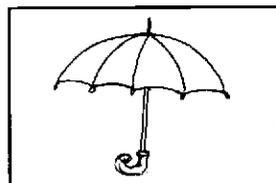
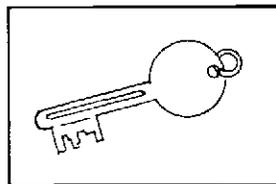
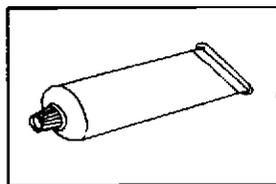
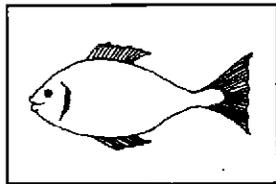
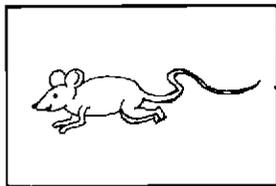


cow cat

Skill : Reading comprehension.



Draw a line from each picture name to the picture.



tube

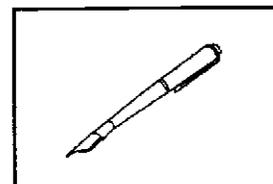
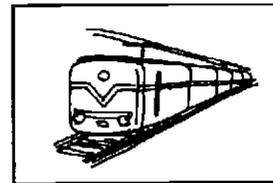
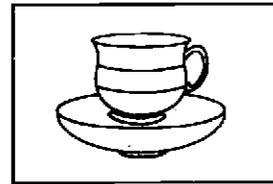
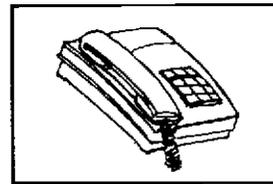
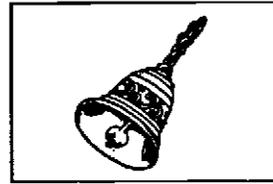
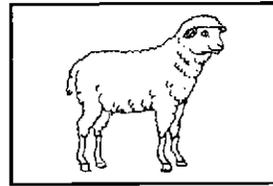
rat

fish

comb

key

umbrella



telephone

sheep

bell

pen

cup

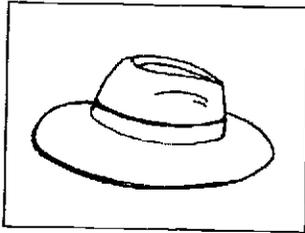
train

Skill : Matching words with pictures.

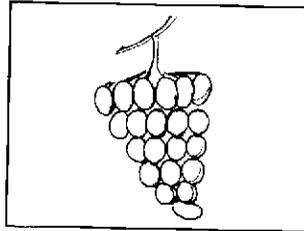




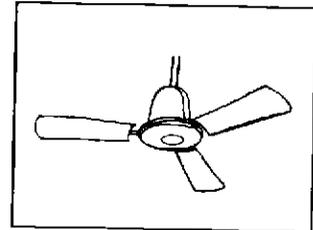
See the picture and fill in the missing letters.



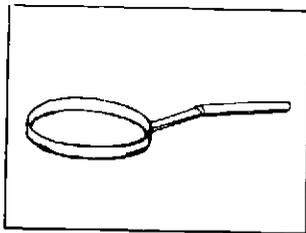
h _ a _ t



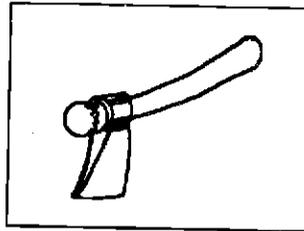
gr _ _ pes



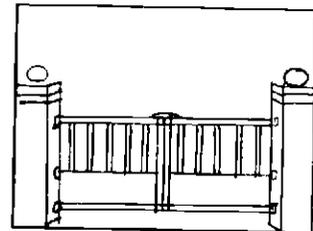
f _ _ n



p _ _ n



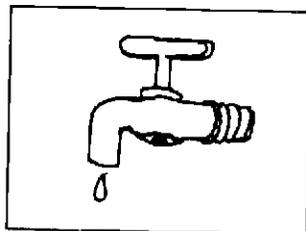
_ _ xe



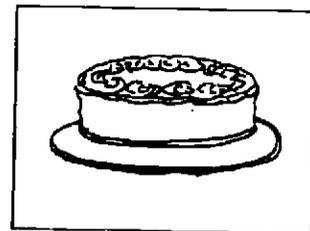
g _ _ te



g _ _ me



t _ _ p



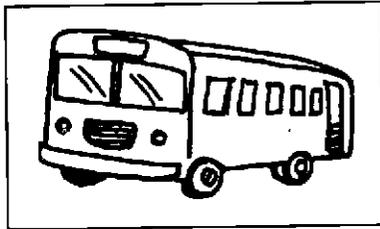
c _ _ ke



Skill : Use of vowel 'a' in words.

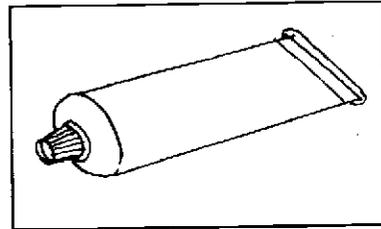


Write words from the box that has 'U' sound as in bus



b u s

Write words from the box that has 'U' sound as in tube



t u b e

Word Box
bud, cube, cub, cute, brush,
flute, duck, gum, tune,
tub, june, mule.

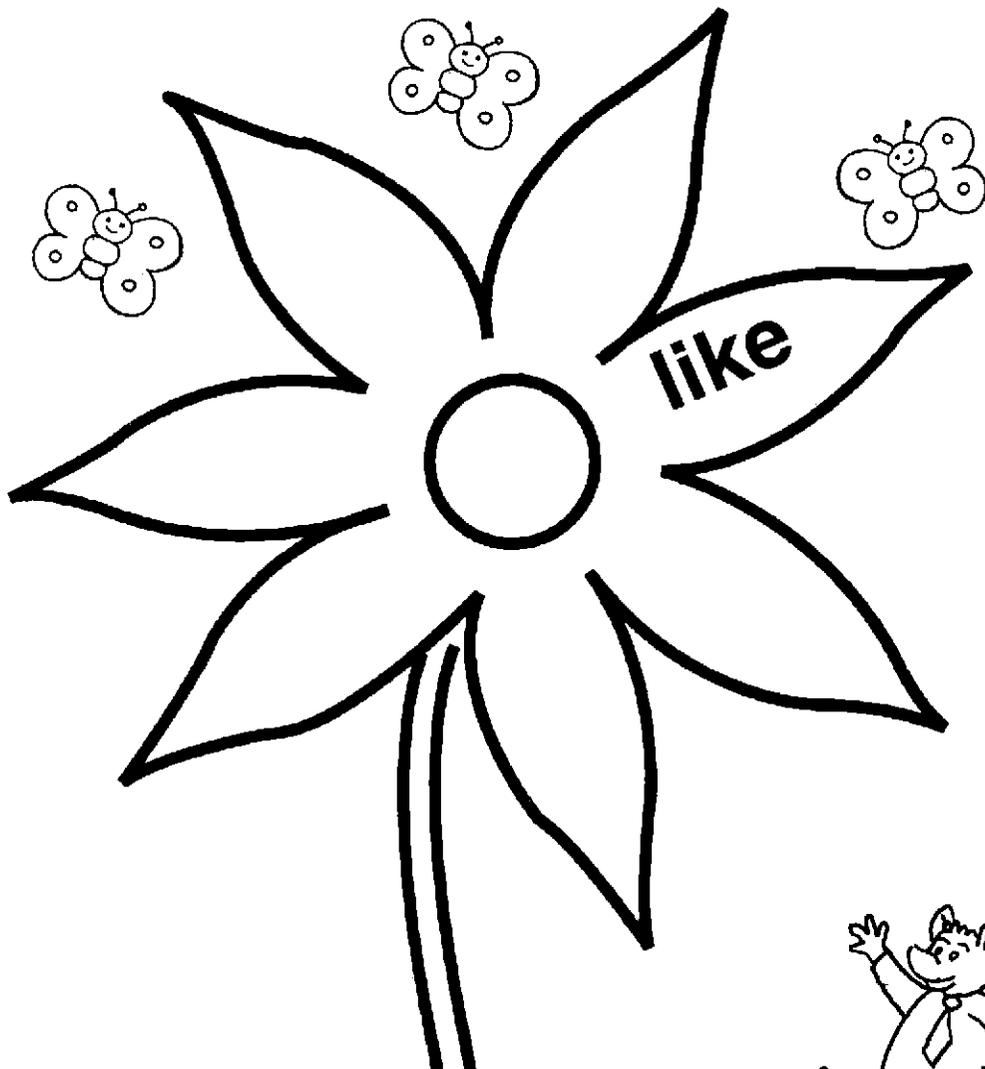
Skill : Auditory discrimination 'U'.



Fill the petals with words that has "i" sound as in like.

Pick words from the box below

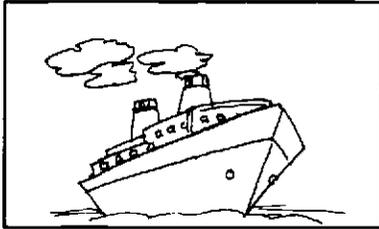
bike , ice, sit, fine, pin, white,like, five, big, ride, wish



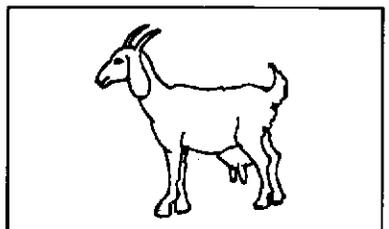
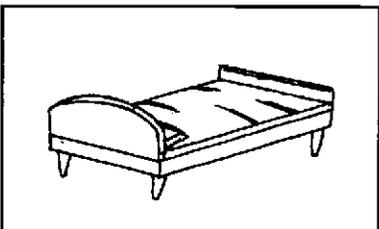
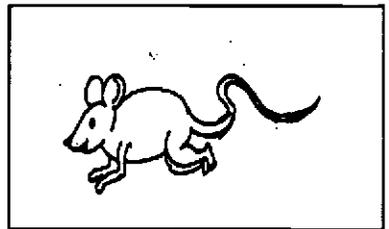
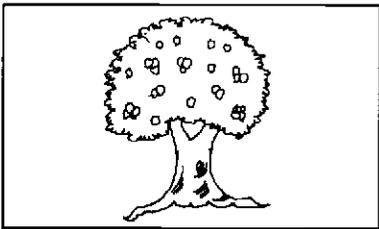
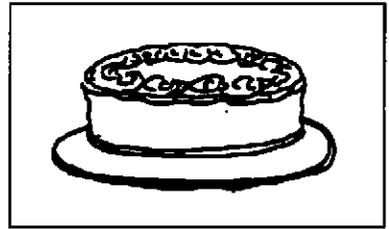
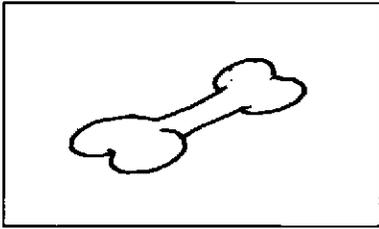
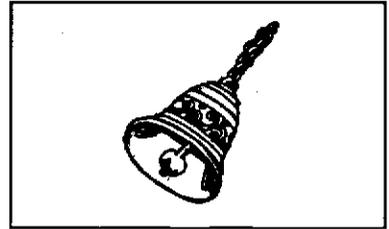
Skill : Auditory and visual discrimination.



See the picture and write its name.



Ship



Skill : Spelling and vocabulary.



Group the words from the word box as shown below.

| | | |
|--|--|--|
|  at cat _____ _____ _____ _____ _____ |  ap gap _____ _____ _____ _____ _____ |  an can _____ _____ _____ _____ _____ |
|--|--|--|

Word Box
van, cap, rat, fan, bat, tap, mat,
lap, pan, bat, man, map

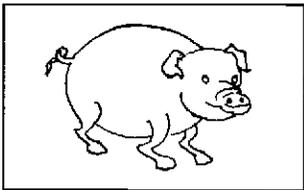
Skill : Writing CVC words



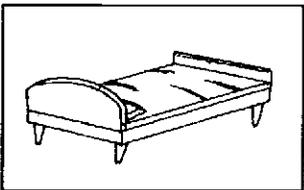
Look at the picture and fill in the missing letters.



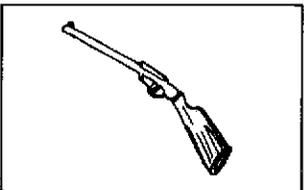
m _ a _ n



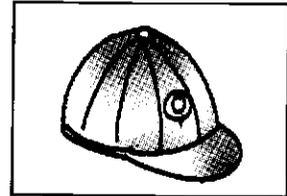
p _ _ g



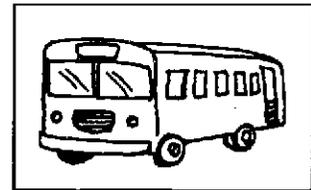
b _ _ d



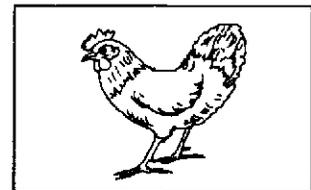
g _ _ n



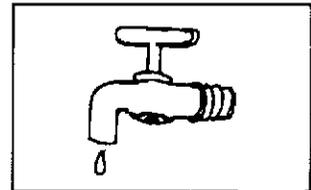
c _ _ p



b _ _ s



h _ _ n



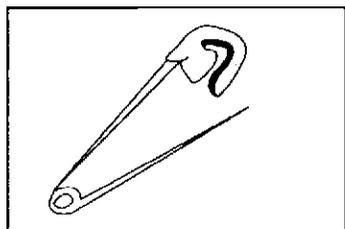
t _ _ p



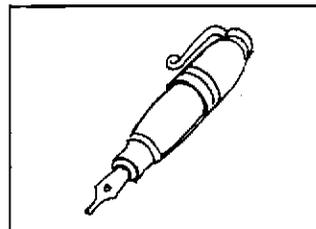
Skill : Writing CVC words.



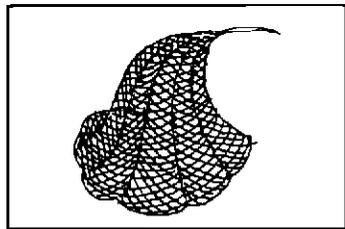
Look at the picture and fill in the missing letters.



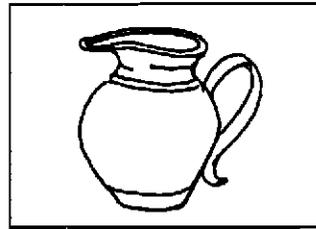
p _ i _ n



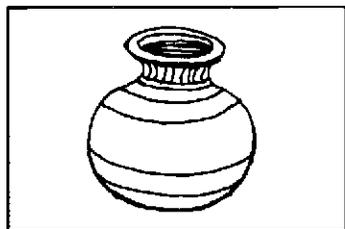
_ _ _ n



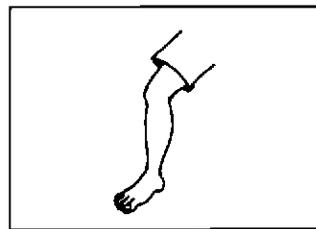
_ _ _ t



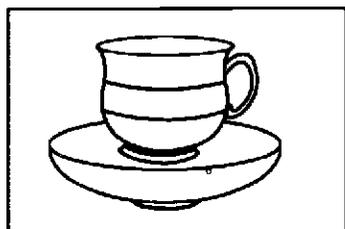
_ _ _ g



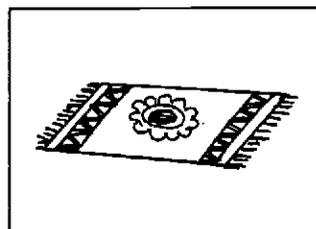
_ _ _ t



_ _ _ g



_ _ _ p

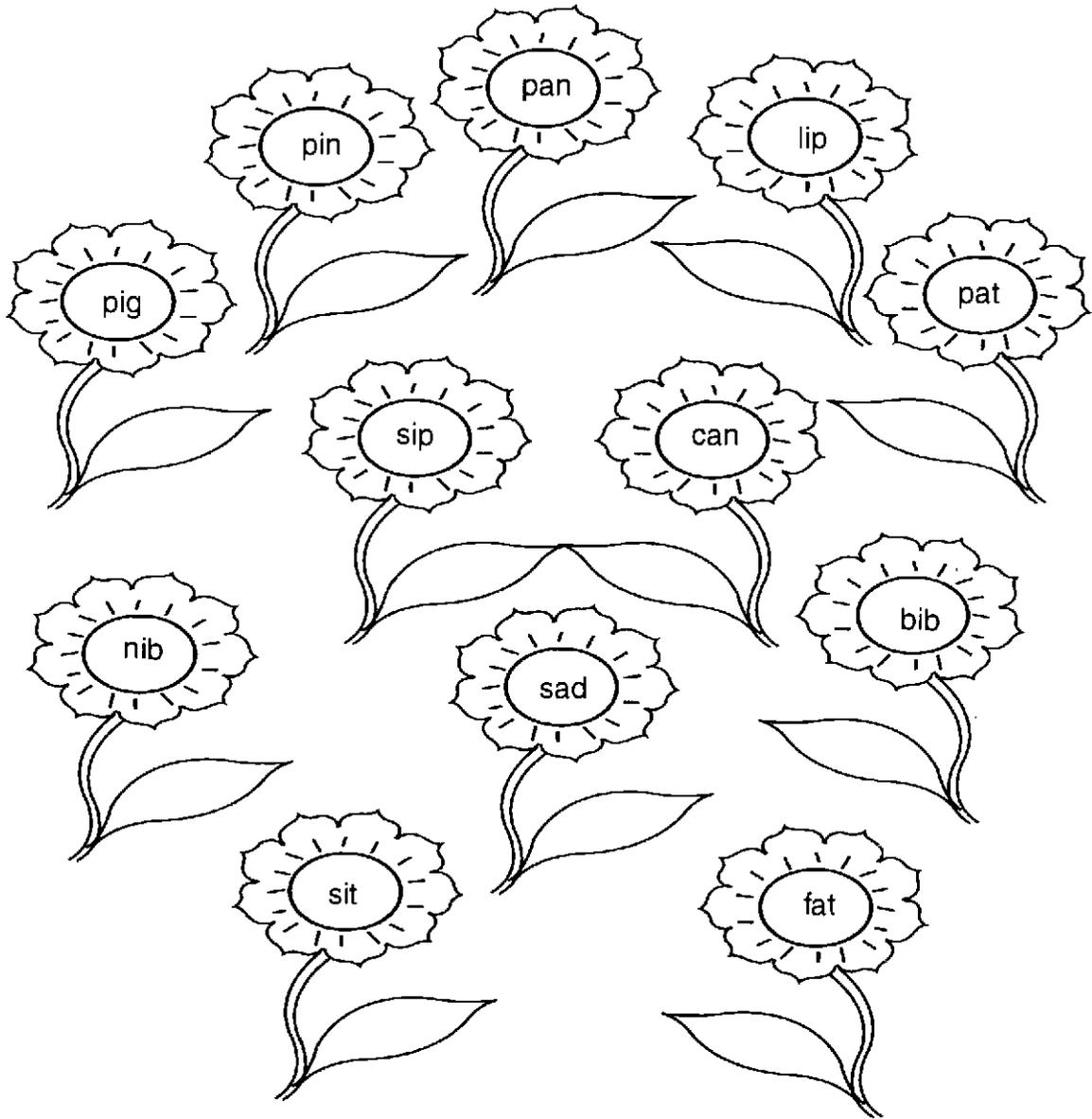


_ _ _ t

Skill : Writing CVC words.



Colour the flowers which have 'a' sound as in cap – purple, and 'i' sound as in pin – yellow



Skill : Colouring CVC words - a and i sounds.



WORK SHEET

Make new words ! Add a consonant anywhere in the word and make a new word. Write the new word in the blank next to it.

Eg : bed – bend
ants – pants



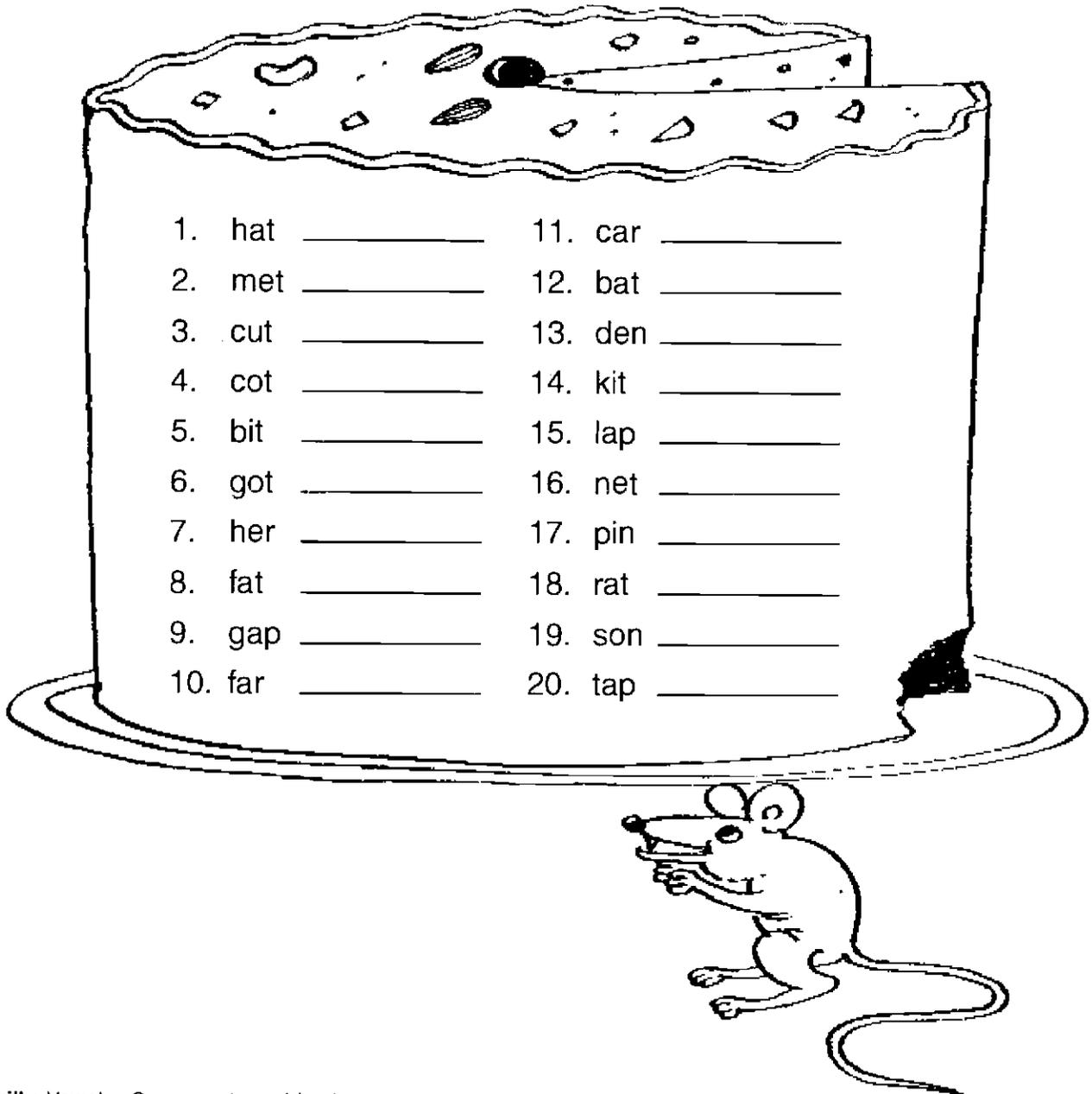
- | | |
|---------------|-----------------|
| 1. sat _____ | 11. lame _____ |
| 2. ink _____ | 12. rain _____ |
| 3. cap _____ | 13. won _____ |
| 4. pit _____ | 14. lot _____ |
| 5. dam _____ | 15. eight _____ |
| 6. late _____ | 16. mall _____ |
| 7. pump _____ | 17. lap _____ |
| 8. star _____ | 18. light _____ |
| 9. team _____ | 19. top _____ |
| 10. row _____ | 20. end _____ |

Skill : Vowel – Consonant combinations.



Make new words ! write the new word in the blank next to it. Add a vowel anywhere within the word to make a new word.

Eg : Can – cane
bed – bead



- | | |
|---------------|---------------|
| 1. hat _____ | 11. car _____ |
| 2. met _____ | 12. bat _____ |
| 3. cut _____ | 13. den _____ |
| 4. cot _____ | 14. kit _____ |
| 5. bit _____ | 15. lap _____ |
| 6. got _____ | 16. net _____ |
| 7. her _____ | 17. pin _____ |
| 8. fat _____ | 18. rat _____ |
| 9. gap _____ | 19. son _____ |
| 10. far _____ | 20. tap _____ |

Skill : Vowel – Consonant combinations.



Group the words under A & B as shown :

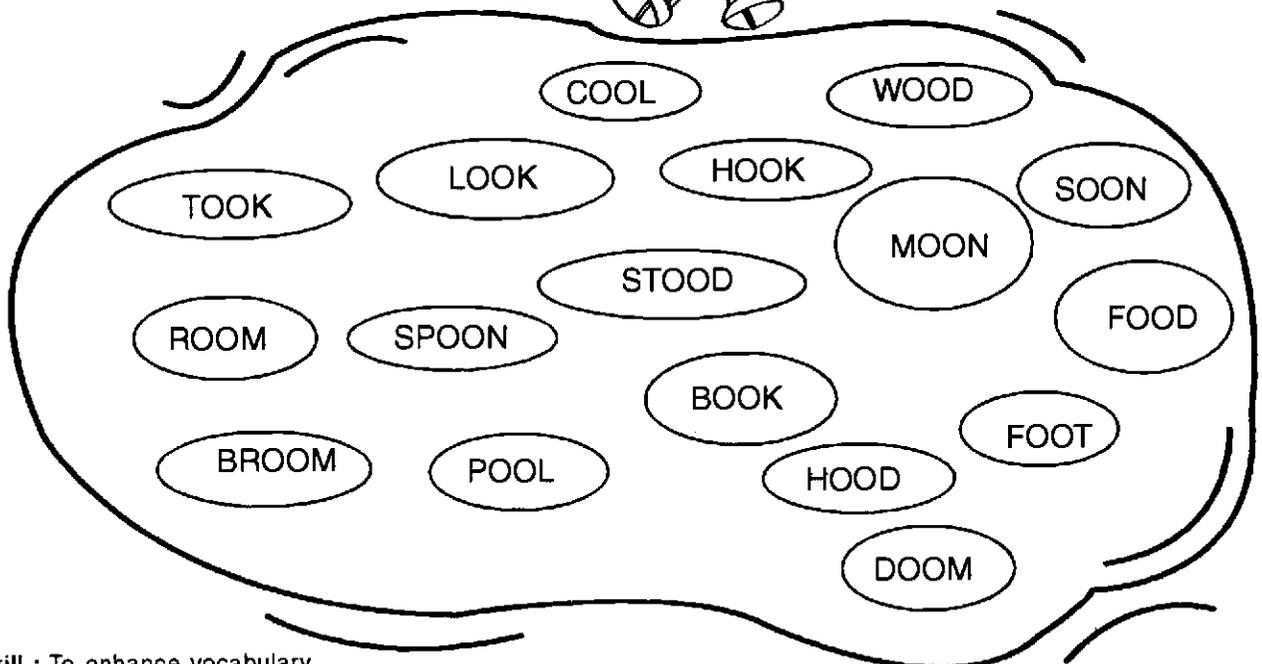
A

Words with
OO as in cook

B

Words with
OO as in boot

WORD POOL



Skill : To enhance vocabulary.



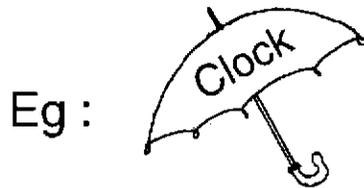
Underline the words with blends.
Write another similar blend next to it in the blank.

| | |
|------------|-------|
| 1. trunk | _____ |
| 2. bus | _____ |
| 3. clock | _____ |
| 4. plate | _____ |
| 5. pan | _____ |
| 6. planet | _____ |
| 7. cricket | _____ |
| 8. picture | _____ |
| 9. snake | _____ |
| 10. strap | _____ |
| 11. skip | _____ |
| 12. stand | _____ |





Pick the words with blends from the box and write in each umbrella.



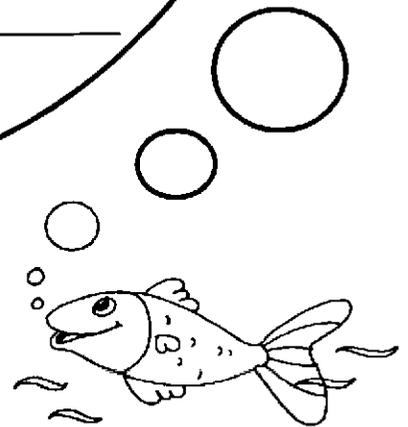
Word Box
prize, drum, great, bake, drive, crane,
bottom, frock, truck, blade, tin, crab,
slow, box, blue, frog, dog

Skill : Consonant blends.



**Underline the words with digraph.
Write another similar word next to it.**

| | |
|----------|-------|
| 1. shut | _____ |
| 2. come | _____ |
| 3. chair | _____ |
| 4. slip | _____ |
| 5. chain | _____ |
| 6. shine | _____ |
| 7. build | _____ |
| 8. there | _____ |
| 9. phase | _____ |
| 10. same | _____ |
| 11. fish | _____ |
| 12. face | _____ |



Skill : Digraph



Add e and make a new word. See how many such new words you can make. Be careful, all words given will not make new words by adding e. Tick where new words are made.

- | | | | |
|---------|--------------------------|---------|--------------------------|
| 1. cute | <input type="checkbox"/> | 11. sun | <input type="checkbox"/> |
| 2. pit | <input type="checkbox"/> | 12. sam | <input type="checkbox"/> |
| 3. can | <input type="checkbox"/> | 13. tin | <input type="checkbox"/> |
| 4. cap | <input type="checkbox"/> | 14. sob | <input type="checkbox"/> |
| 5. cat | <input type="checkbox"/> | 15. kit | <input type="checkbox"/> |
| 6. pin | <input type="checkbox"/> | 16. mad | <input type="checkbox"/> |
| 7. her | <input type="checkbox"/> | 17. ear | <input type="checkbox"/> |
| 8. ten | <input type="checkbox"/> | 18. got | <input type="checkbox"/> |
| 9. tap | <input type="checkbox"/> | 19. mat | <input type="checkbox"/> |
| 10. fat | <input type="checkbox"/> | 20. man | <input type="checkbox"/> |

How many new words have you made ?



Skill : Spelling.



Look at the picture and fill the blanks.

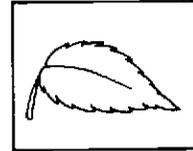
Eg : This is a book.



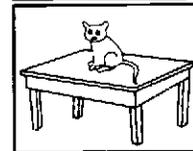
1. This is a _____



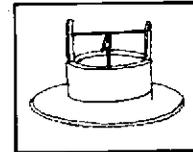
2. This is a _____



3. The cat is on the _____



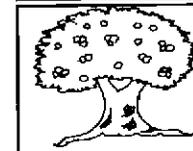
4. That is a _____



5. Radha is a _____



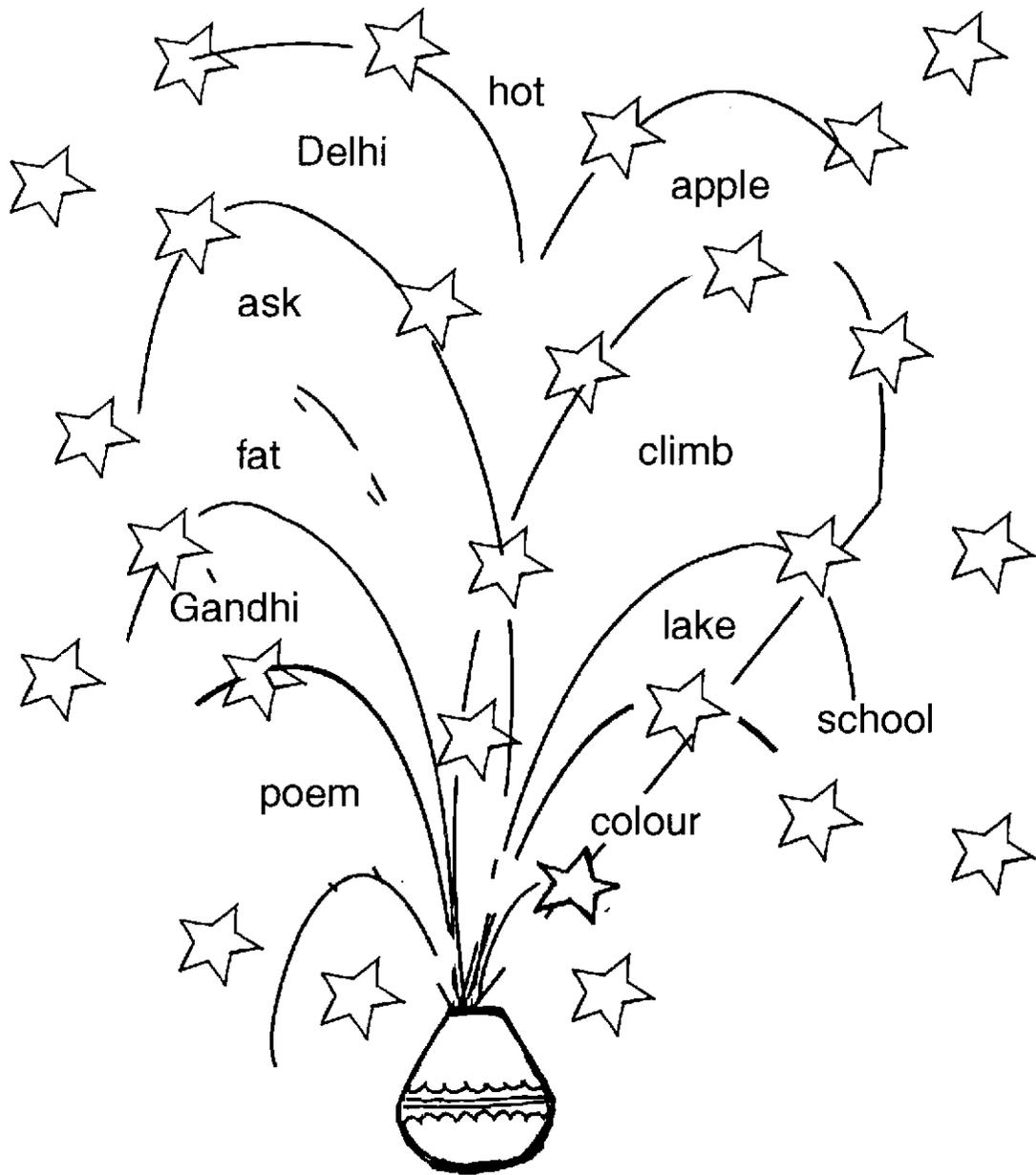
6. Mangoes are on the _____



Skill : Simple sentences.



Colour all the nouns coming out of the flower-pot.



Skill : Nouns.



Colour the nouns.

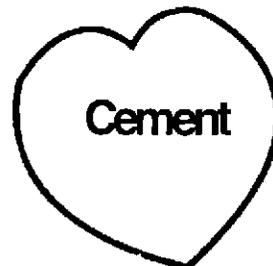
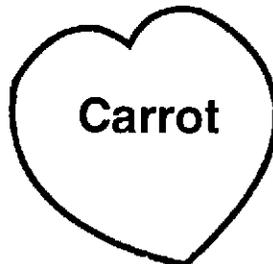
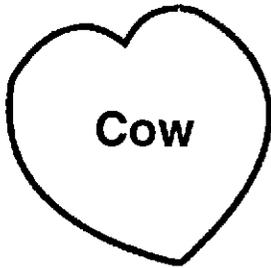
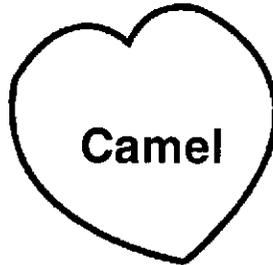
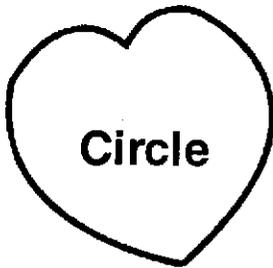
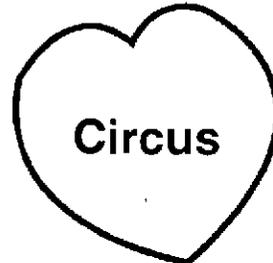
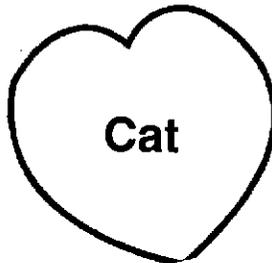
Eg : Pen is on the table.

1. Milk is white in colour.
2. India is our country.
3. I like Tom and Jerry.
4. Parks are beautiful.
5. Neha learns dance.
6. Rahul is my best friend.
7. Everest is the highest mountain.
8. I like to play cricket.
9. Will you let me play with your toys, please?
10. Isn't this a lovely flower ?





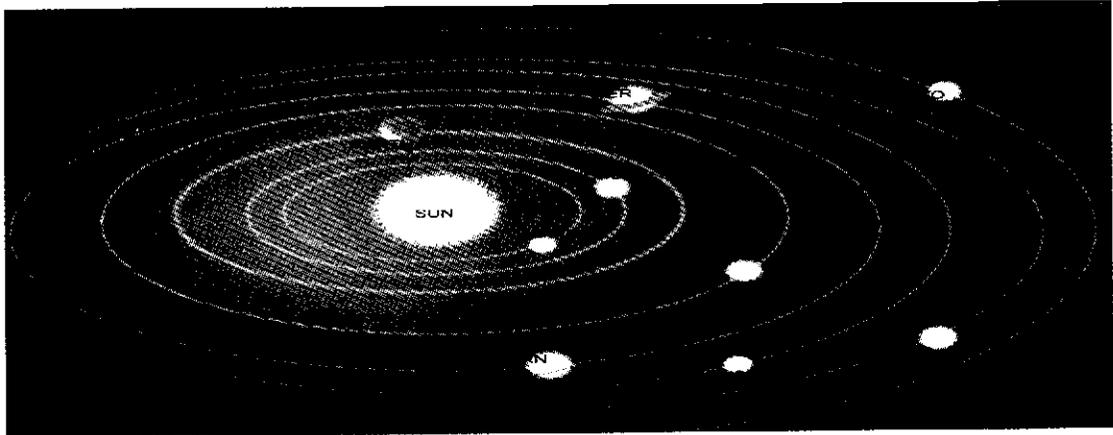
Read the word and colour the hearts.
'C' as in car - red, 'C' as in city - yellow.



Skill : Spelling – 'c' with 'k' and 's' sounds.



PLANETS



Make as many words as possible from the word 'planets'. Do not use a letter more than once in a word. Plurals are permitted.

- | | | |
|----------------|-----------|-----------|
| 1. <u>net</u> | 11. _____ | 21. _____ |
| 2. <u>nets</u> | 12. _____ | 22. _____ |
| 3. _____ | 13. _____ | 23. _____ |
| 4. _____ | 14. _____ | 24. _____ |
| 5. _____ | 15. _____ | 25. _____ |
| 6. _____ | 16. _____ | 26. _____ |
| 7. _____ | 17. _____ | 27. _____ |
| 8. _____ | 18. _____ | 28. _____ |
| 9. _____ | 19. _____ | 29. _____ |
| 10. _____ | 20. _____ | 30. _____ |

How many words did you make ?

Skill : Vocabulary.



Syllabicate !

fa/mi/ly

remember

animal

November

Saturday

butterfly

kitten

jungle

little

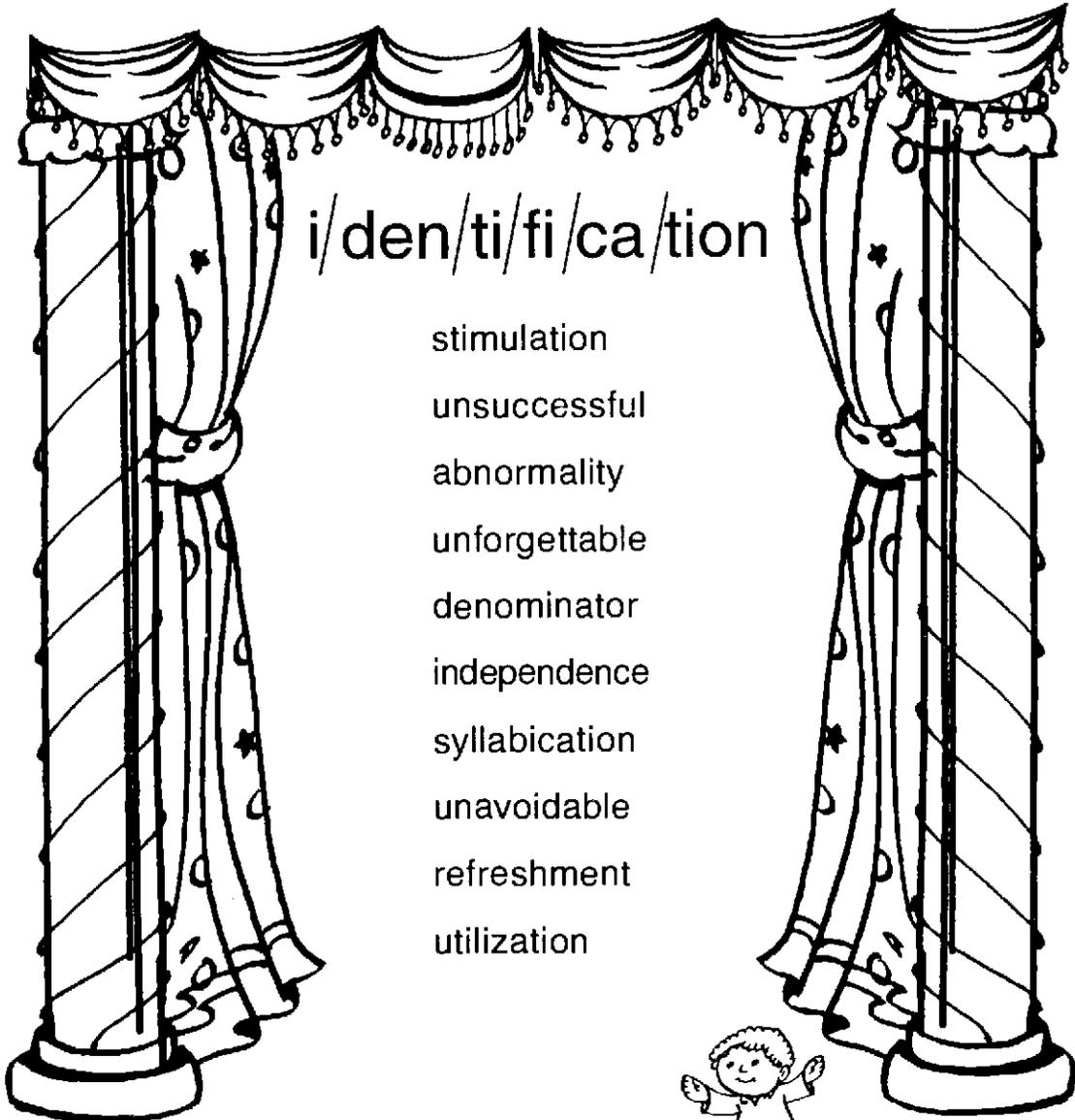
potato

after

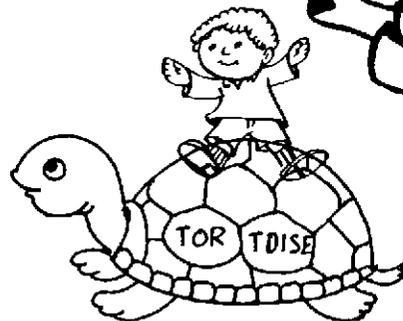




Syllabicate !



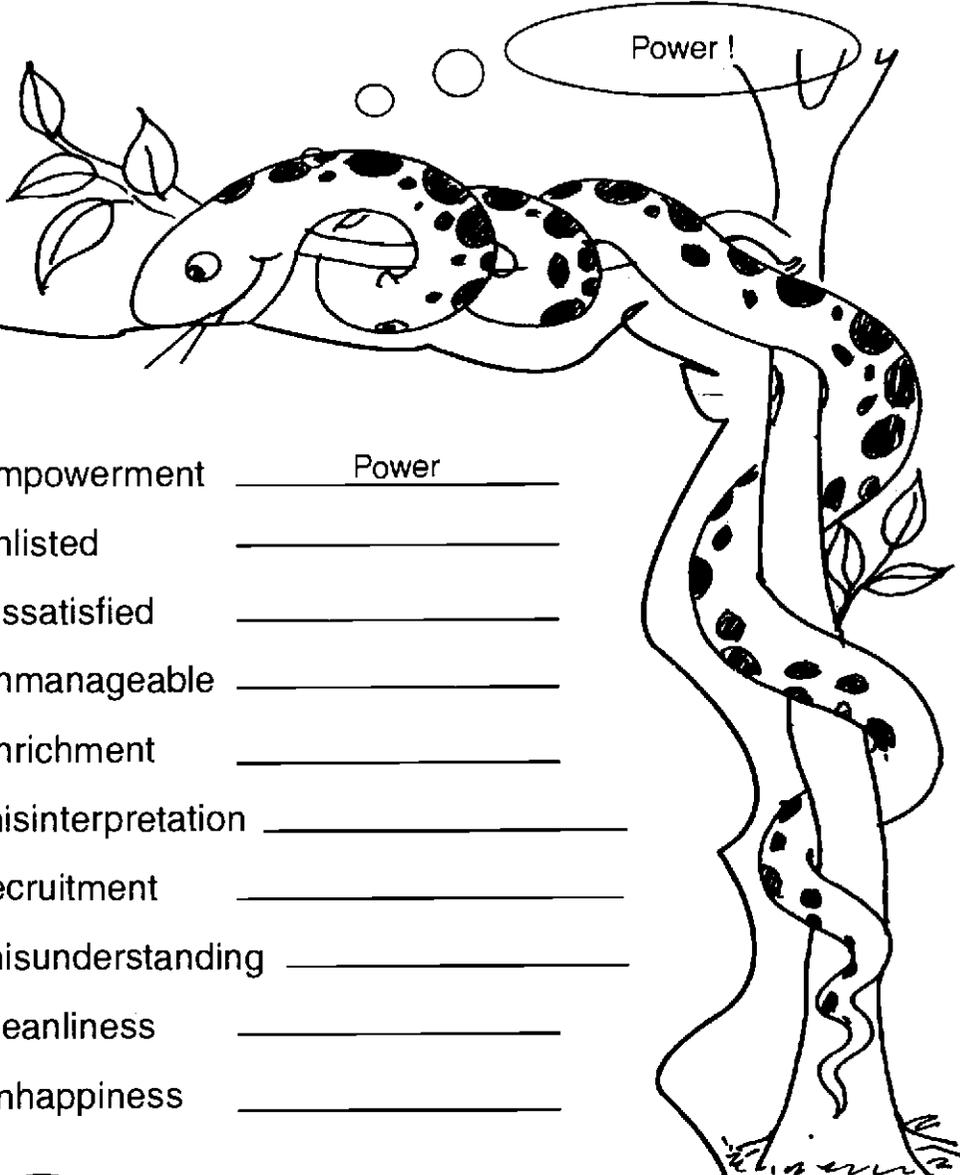
- stimulation
- unsuccessful
- abnormality
- unforgettable
- denominator
- independence
- syllabication
- unavoidable
- refreshment
- utilization



Skill : Syllabication.
Help : Use 'dissect' [refer chapter 'V']



Find the root word and write in the blank next to it.

- 
1. empowerment _____ Power _____
 2. enlisted _____
 3. dissatisfied _____
 4. unmanageable _____
 5. enrichment _____
 6. misinterpretation _____
 7. recruitment _____
 8. misunderstanding _____
 9. cleanliness _____
 10. unhappiness _____

Skill : Syllabication.



1. Find the root word and write in the blank.
2. Syllabicate the given word.

1. _____ indefinitely

2. _____ extension

3. _____ inconvenience

4. _____ expectation

5. _____ intentional

6. _____ entrance

7. _____ pronunciation

8. _____ excessive

9. _____ unpardonable

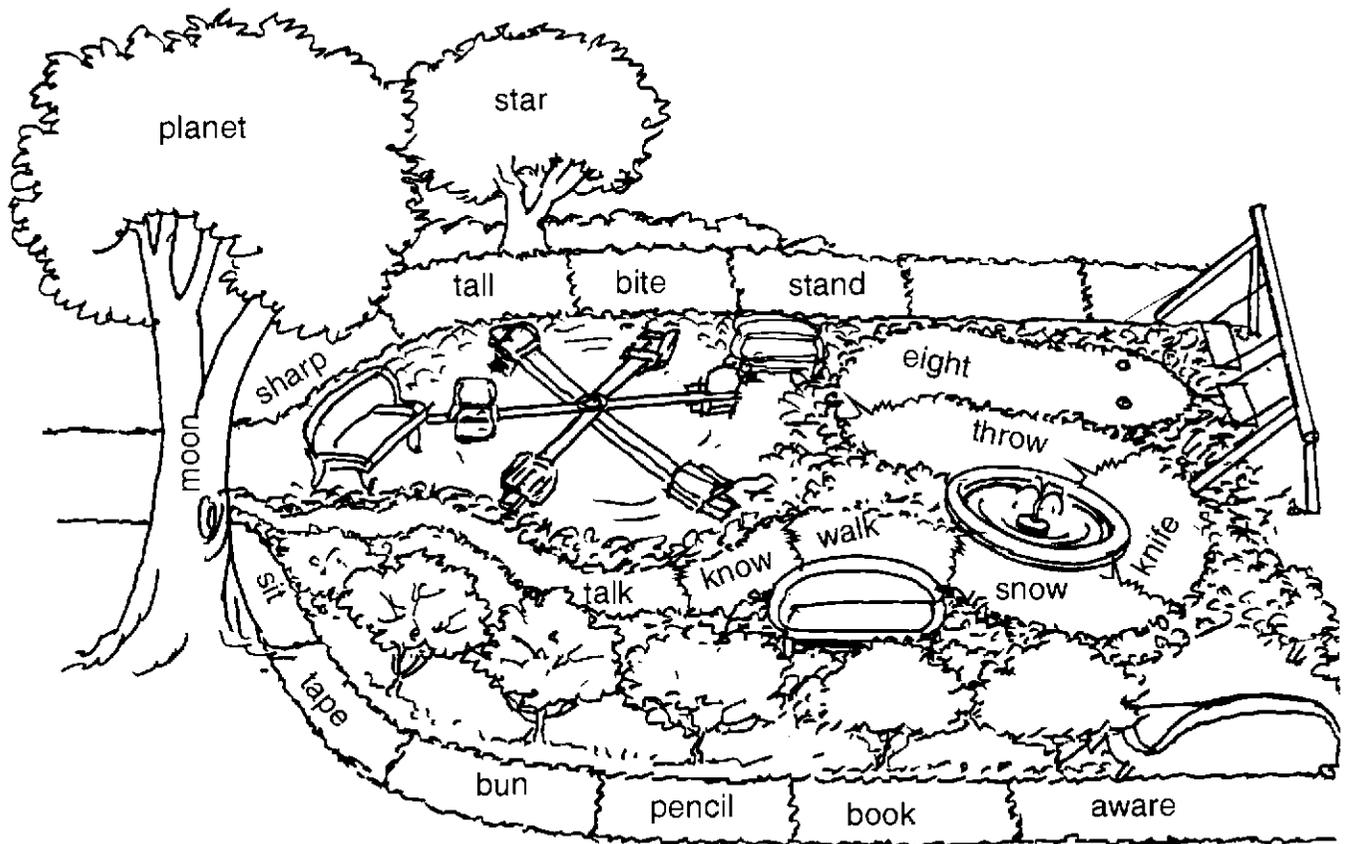
10. _____ eligibility

Skill : Syllabication



WORK SHEET

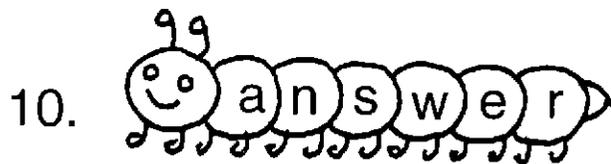
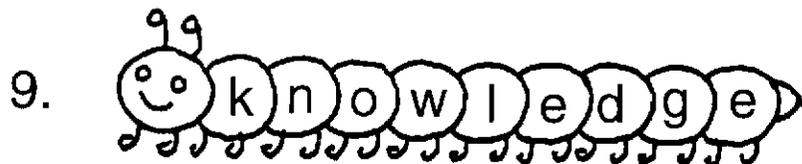
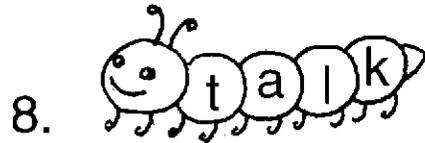
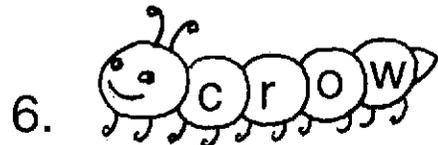
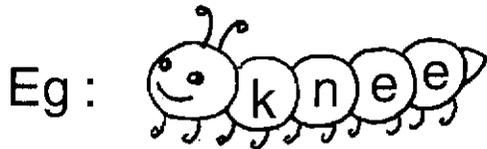
1. Colour the blocks with silent Consonants
2. What do you find ?



Skill : Silent letter



Colour all the silent letters with blue on the caterpillar.



Skill : Silent letters.

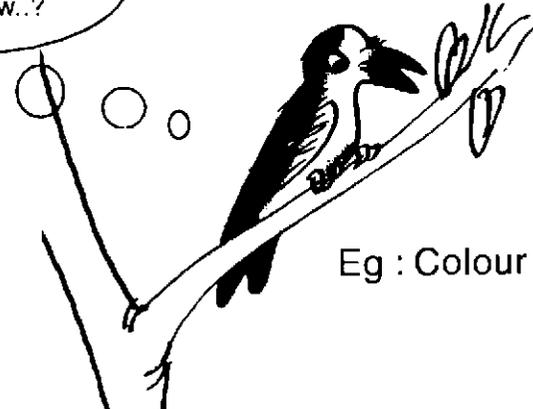


Fill in the blanks with suitable words from the word box and circle the silent letter.

Word Box

doubtful, knife, blow, knit, eight, nights, wrap, walk, whistle, throw

Why do I have 'w' in my name (crow) crow..?



Eg : Colour of my hair is black.

1. 'Tweet Tweet' ! The guard blew the _____
2. Will you, please _____ this present for me ?
3. He goes for a _____ every morning.
4. Be careful ! The _____ is sharp.
5. Can you _____ a sweater ?
6. _____ all the red balloons.
7. Renu takes breakfast at _____ O clock.
8. Do not _____ the plastic bags on the road.
9. Anu was _____ about reaching on time.
10. _____ are cold in December.

Skill : Silent letters.



Help the ants join gender pairs.

uncle hen

king woman

cock her

him aunt

man queen

she mother

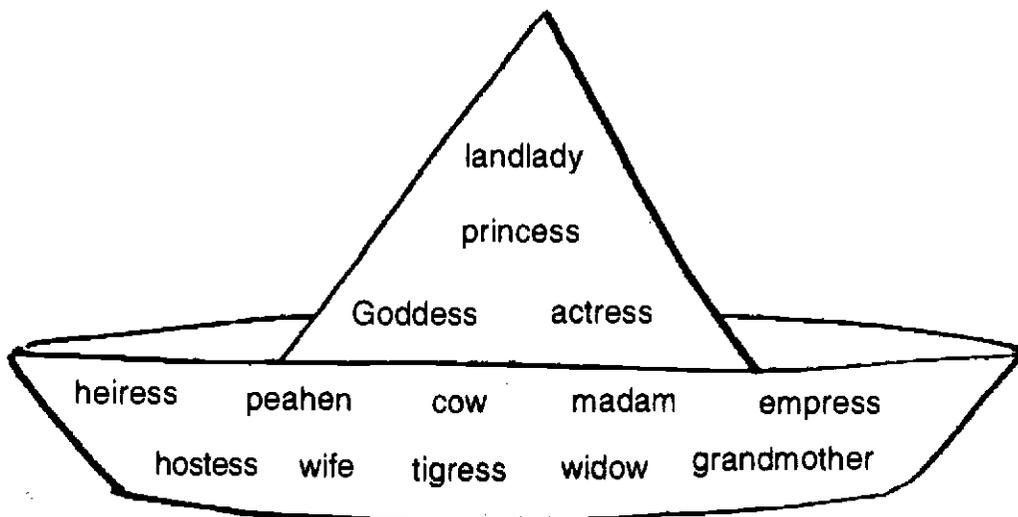
father he

Skill : Genders.



There are some words of feminine gender in the boat below. Write the correct one next to its masculine gender below :

| | | | |
|-------------|-----------------|--------------|-------|
| Eg : prince | <u>princess</u> | sir | _____ |
| peacock | _____ | actor | _____ |
| bull | _____ | host | _____ |
| landlord | _____ | widower | _____ |
| tiger | _____ | emperor | _____ |
| God | _____ | heir | _____ |
| husband | _____ | grand father | _____ |



Skill : Genders.



Write the name of person, place, animal and thing with letters given below as the first letter :

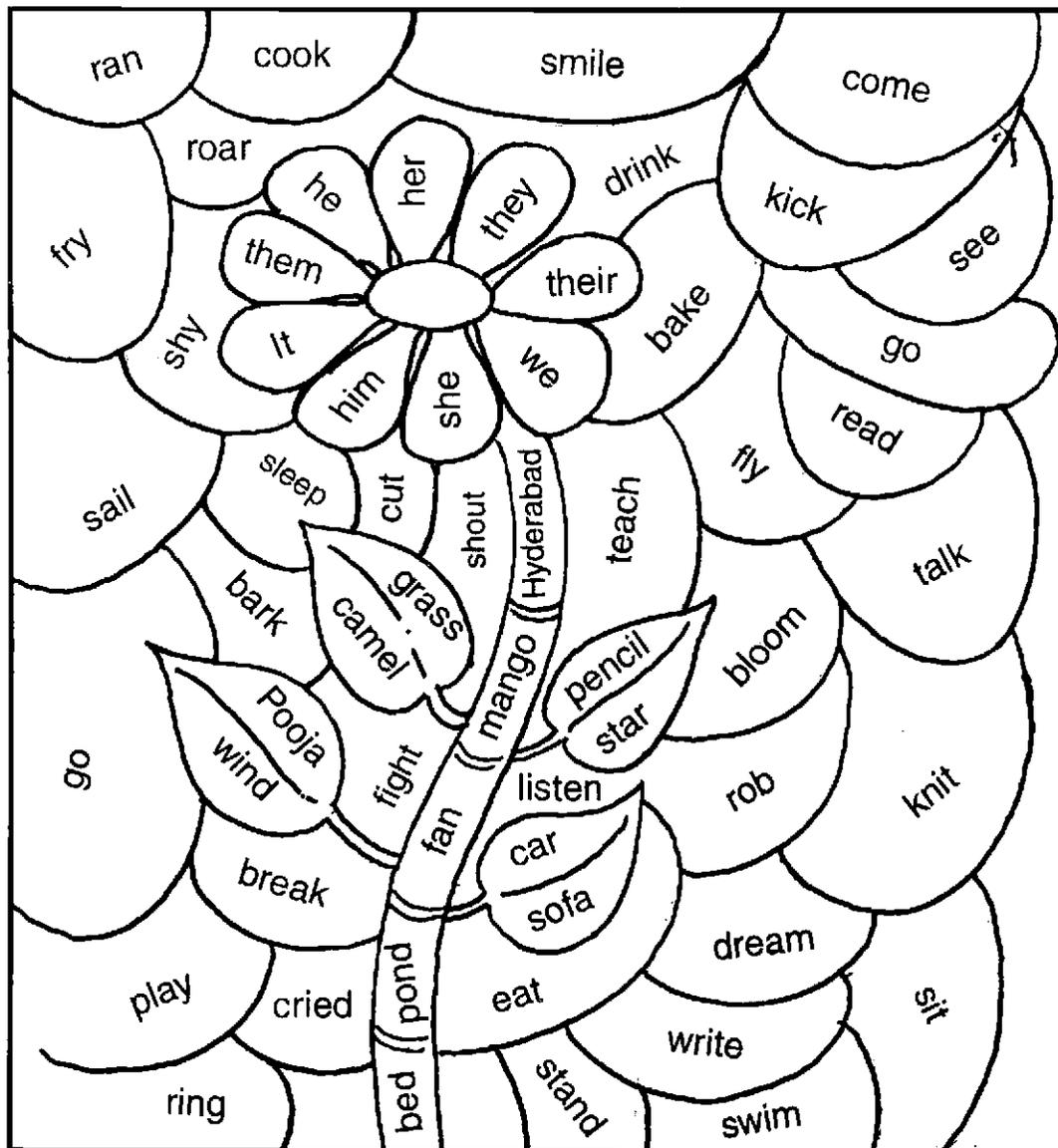
| | person | place | animal | thing |
|---|--------|--------|--------|-------|
| L | Latha | London | lion | lamp |
| R | | | | |
| T | | | | |
| G | | | | |
| N | | | | |
| J | | | | |
| V | | | | |

Skill : Nouns.



Do you know what is in this picture ? To see what the picture is, colour all the nouns with green, pronouns with pink and verbs with yellow.

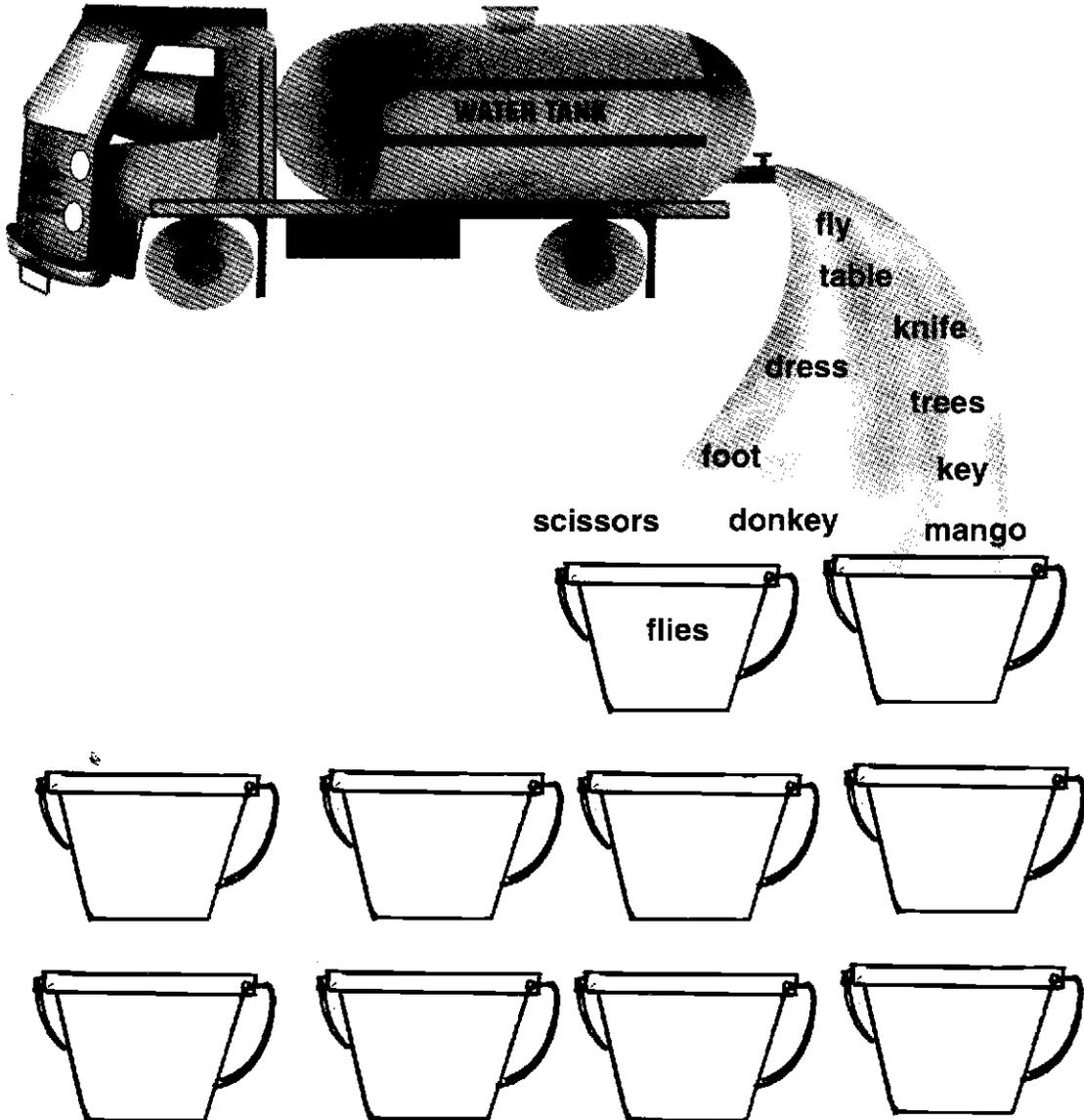
Nouns - Verbs - Pronouns



Skill : Nouns - verbs - pronouns.



Pick from the falling water the singular words and fill the buckets with their plural words.



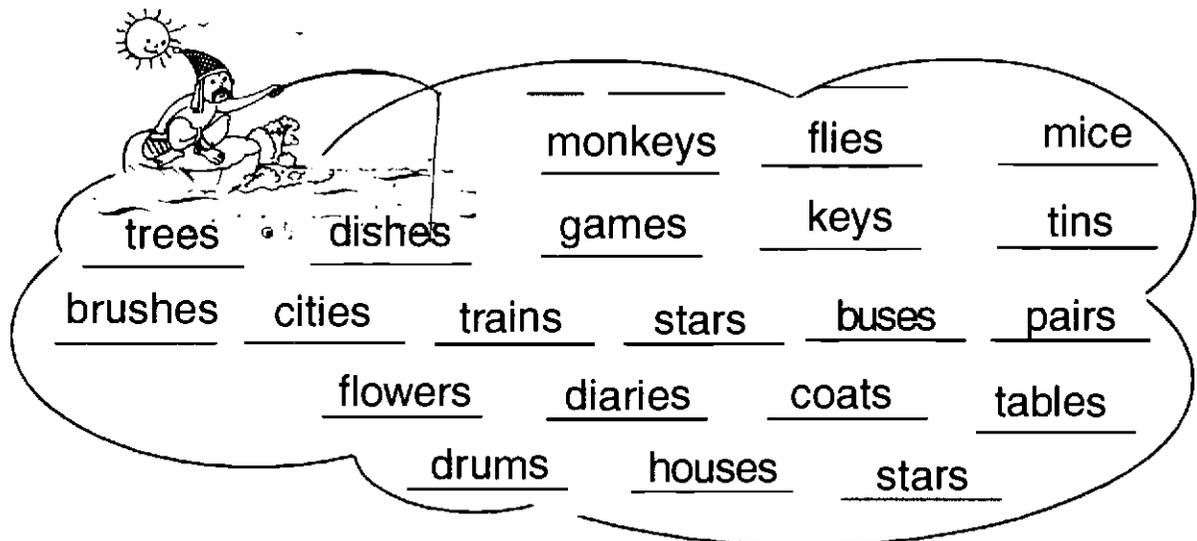
Skill : Singular – Plural



Take the plurals from the pond and write against its singular.

Eg : kite – kites

- | | | | |
|-----------|--|------------|--|
| 1. city | | 11. tin | |
| 2. coat | | 12. pair | |
| 3. game | | 13. drum | |
| 4. flower | | 14. dish | |
| 5. brush | | 15. monkey | |
| 6. diary | | 16. star | |
| 7. train | | 17. fly | |
| 8. bus | | 18. tree | |
| 9. table | | 19. mouse | |
| 10. key | | 20. house | |

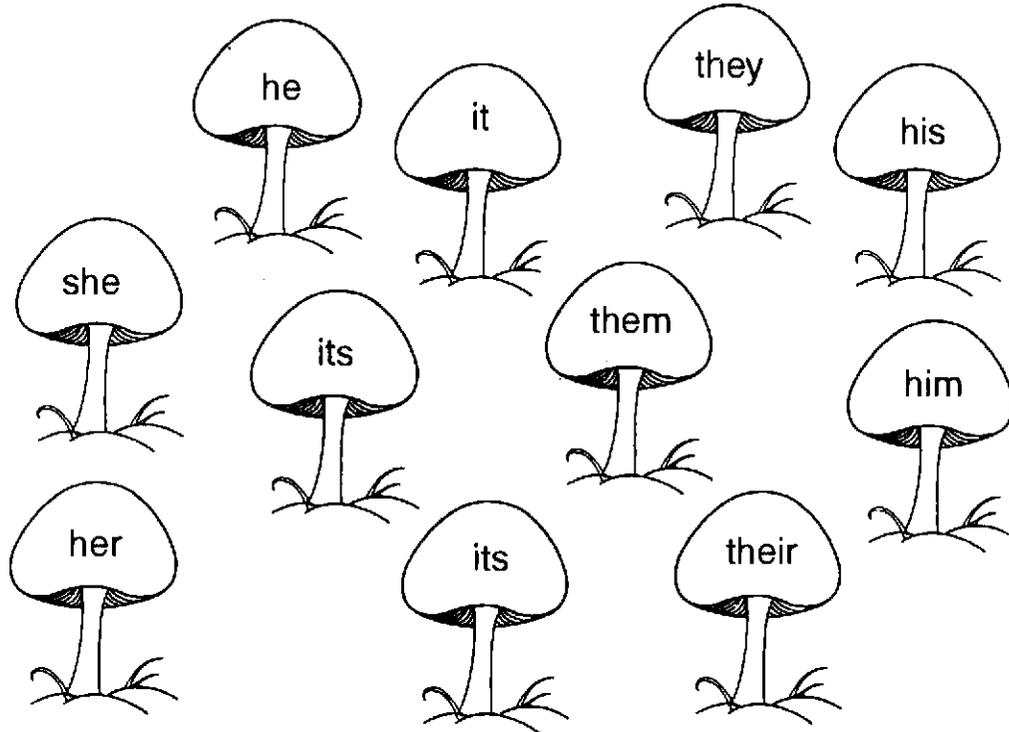


Skill : Singular – Plural

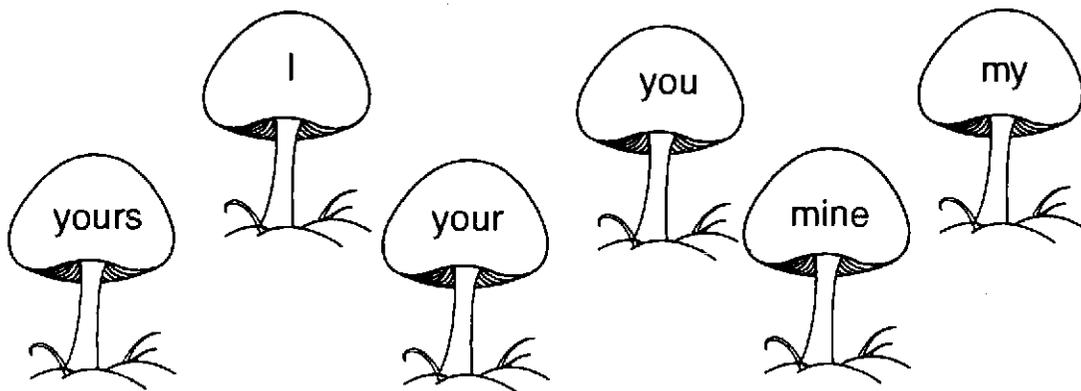


Pronouns mushrooms

Colour masculine pronoun – red
 feminine pronoun – blue
 neutral pronoun – yellow
 plural pronoun – green



Colour first person pronoun – pink
second person pronoun – orange



Skill : Pronouns



Read the sentences and underline all the pronouns.

Eg : Seema has gone to her aunt's house.

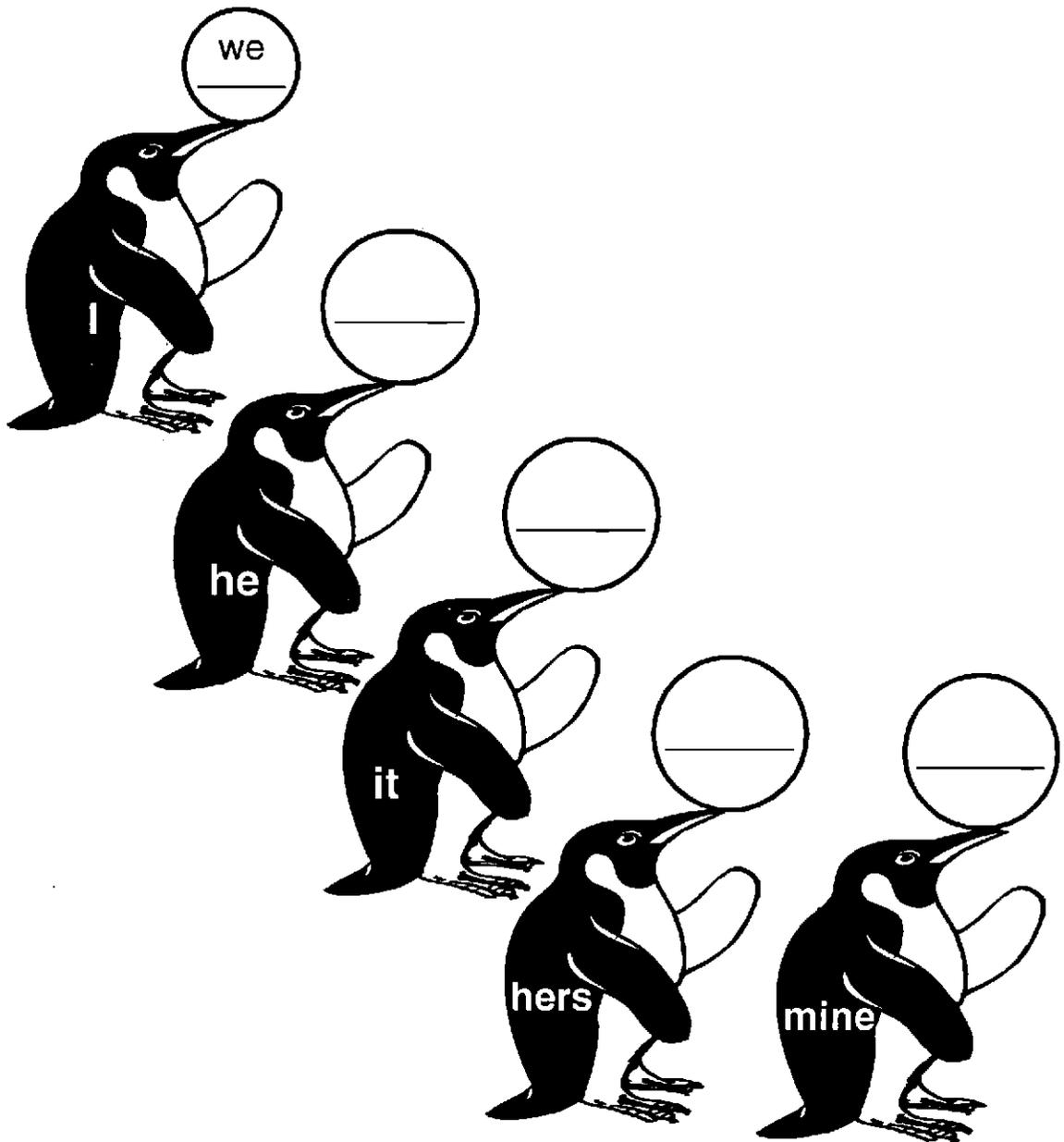
1. Roopa is absent, because she is ill.
2. Keerthi is a good girl. She always speaks the truth.
3. That icecream is mine.
4. We are young.
5. Bobby went to a bakery because he was hungry.
6. Deepa lost her new pencil.
7. Snails carry their homes on their back.
8. I am proud of my country.
9. Balu and his brother are in my school.
10. Let them take the front seat in the bus !



Skill : Pronouns.



Each Penguin has on it, a pronoun-singular.
Write plural form of the pronoun on the ball it holds.

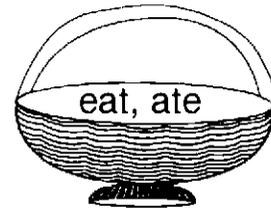


Skill : Pronouns.



Choose the correct word from the basket and fill in the blank.

Eg : I ate a mango yesterday.



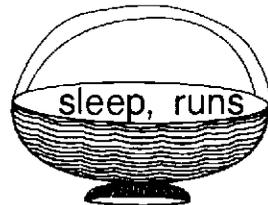
1. Dad _____ to office.



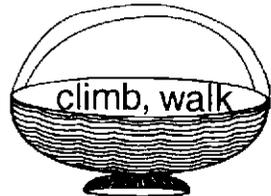
2. Baby _____ when hungry.



3. Cheetah _____ fast.



4. Monkeys _____ trees.



5. Mohan _____ water.

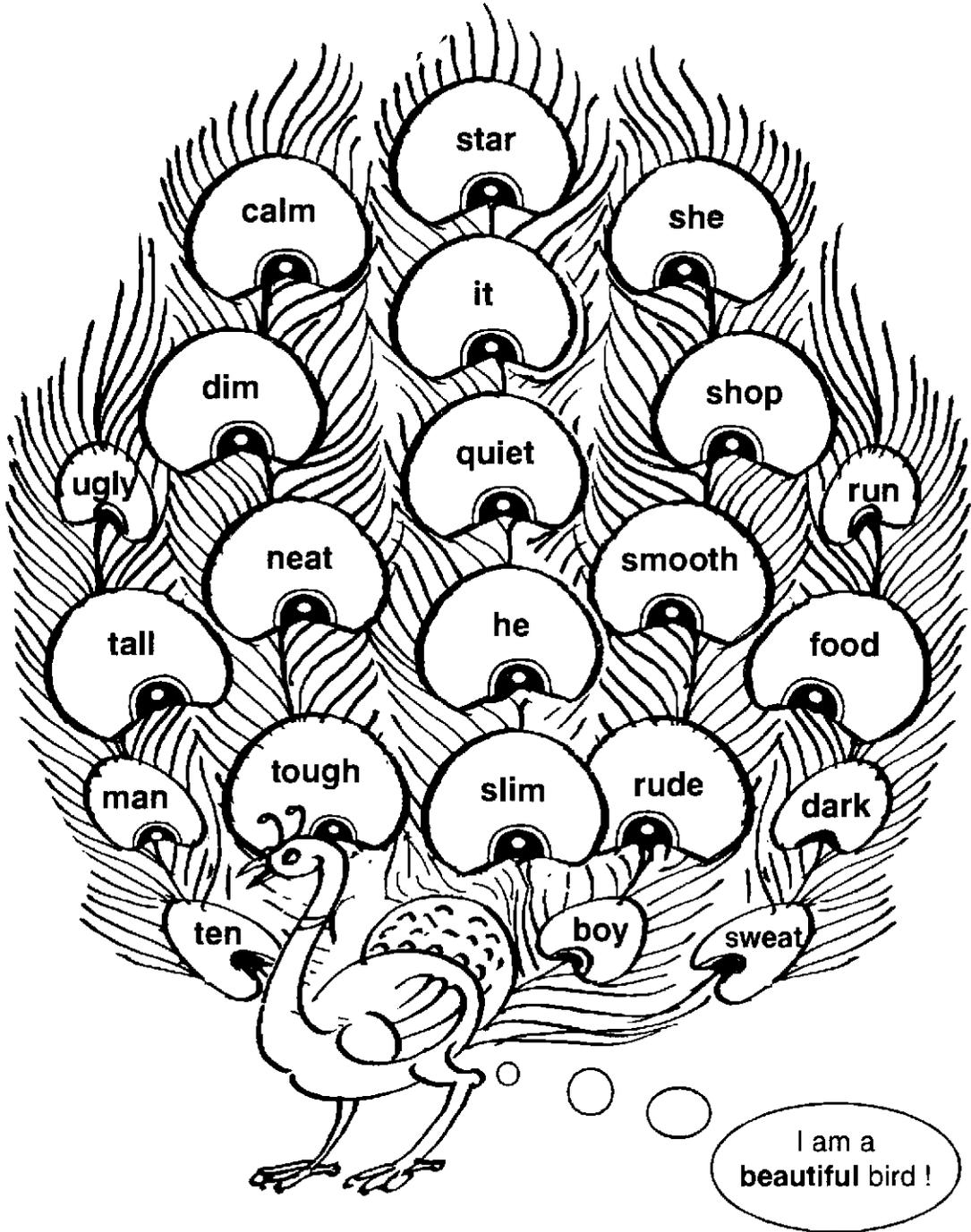


Skill : To enhance the knowledge of verbs.



WORK SHEET

Colour all the adjectives - blue.



Skill : Adjectives.



WORK SHEET

Fill in the blanks with words from the bracket.

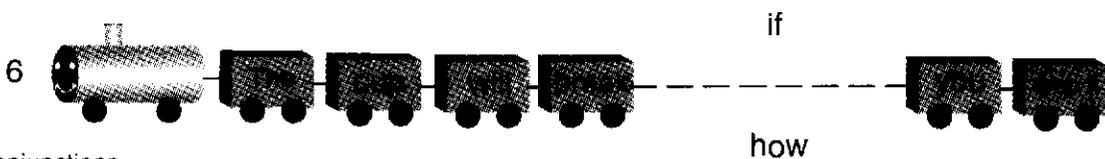
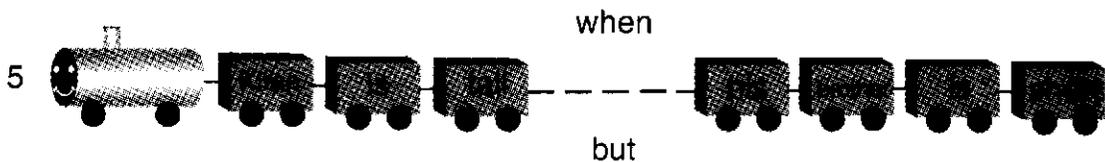
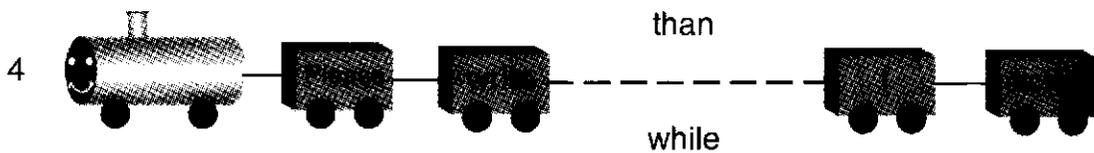
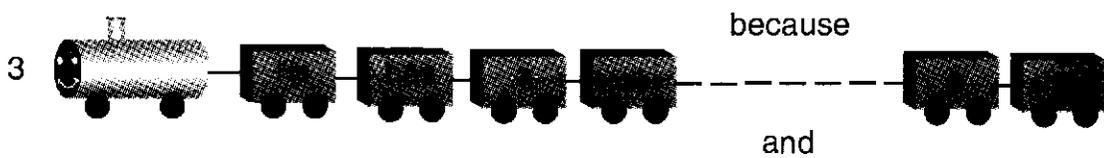
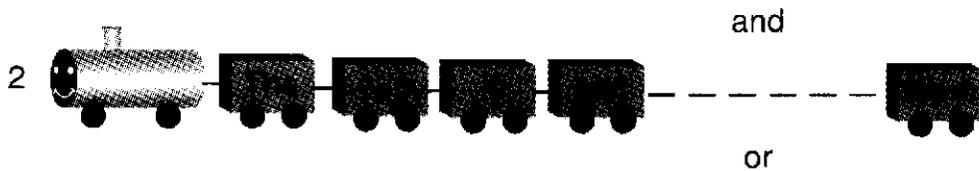
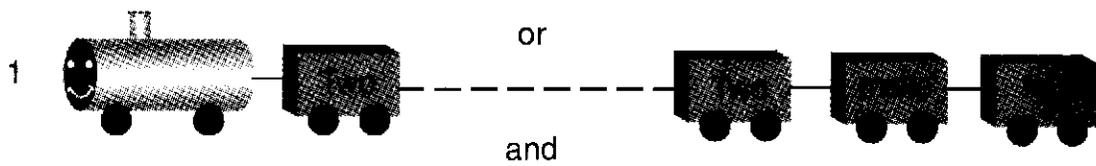
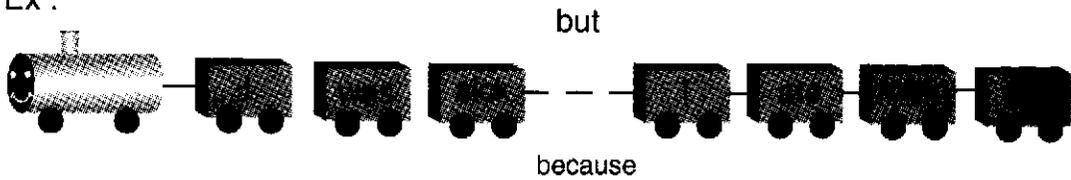
Example : The girl is standing at the door. (above, at)

1. The river flows _____ the bridge. (over, under)
2. She is afraid _____ the dog. (under, of)
3. I have known him _____ a long time. (for, on)
4. There is some water _____ the jug. (in, on)
5. Rani was hiding _____ the door. (after, behind)
6. Put the flowers _____ the table. (out, on)



Connect the sentences with the Correct Conjunction.

Ex :



Skill : Conjunctions.

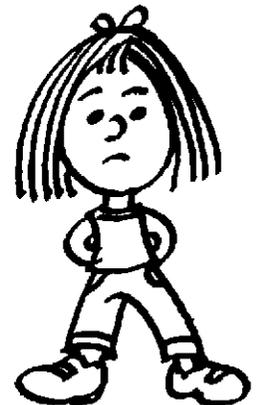


Past – Present – Future tense

Colour the blocks next to each sentence correctly. Use the colour code given here.

Code : Past tense - Blue
Present tense - Purple
Future tense - Green

1. I went to play in a park yesterday.
2. Rahul is swimming.
3. Radha will dance tomorrow.
4. Arvind got a prize in swimming.
5. Ram is running after the dog.
6. He enjoyed eating the chips.
7. Prashant is writing an exam.
8. Anu will write her exam next week.
9. Rahul saw a movie yesterday.
10. Bananas were rotten and she threw them.

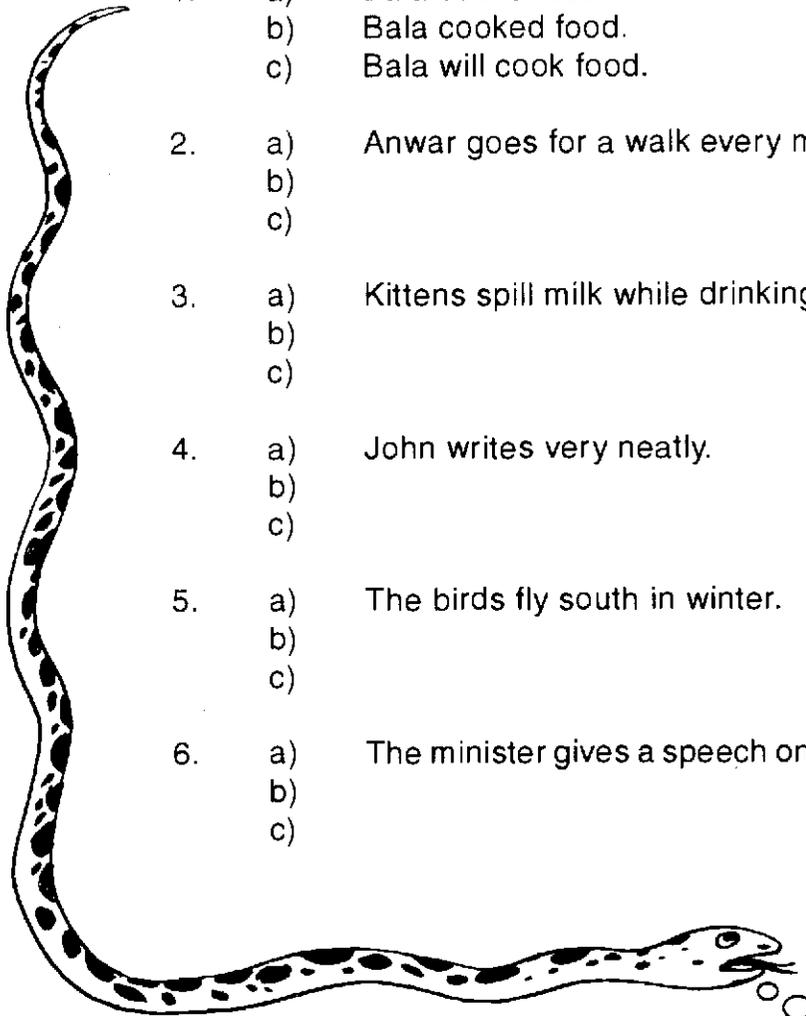




Past – Present – Future tense

Change the statements below to past tense and future tense.

1. a) Bala cooks food.
b) Bala cooked food.
c) Bala will cook food.
2. a) Anwar goes for a walk every morning.
b)
c)
3. a) Kittens spill milk while drinking.
b)
c)
4. a) John writes very neatly.
b)
c)
5. a) The birds fly south in winter.
b)
c)
6. a) The minister gives a speech on World Peace.
b)
c)



I bit Yesterday.
I bite today. What will I do tomorrow ?

Skill : Tenses.

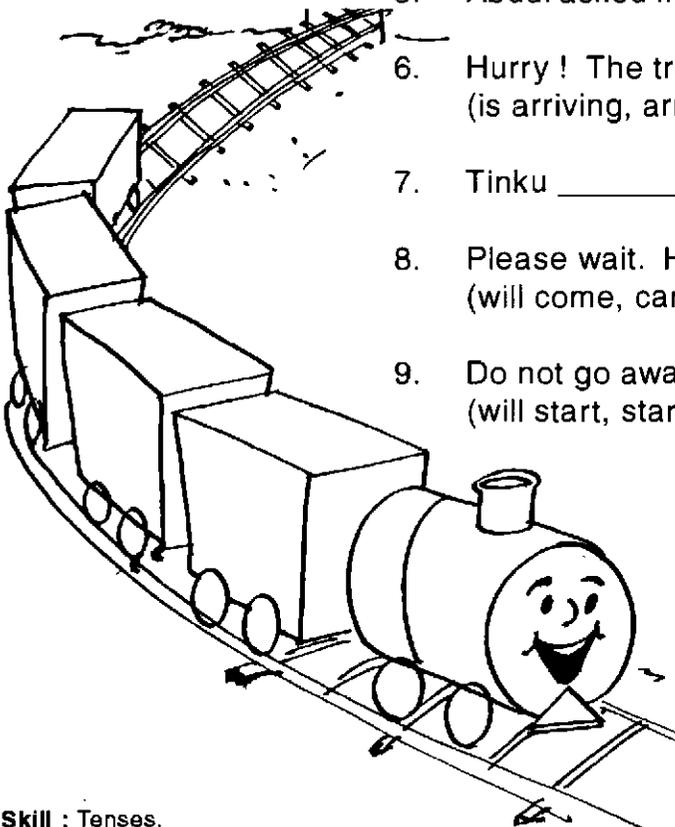


Past - Present - Future tense

Choose the correct form of the verb given in the brackets and fill the blank.

Eg : This book has been read by many people (reading, read).

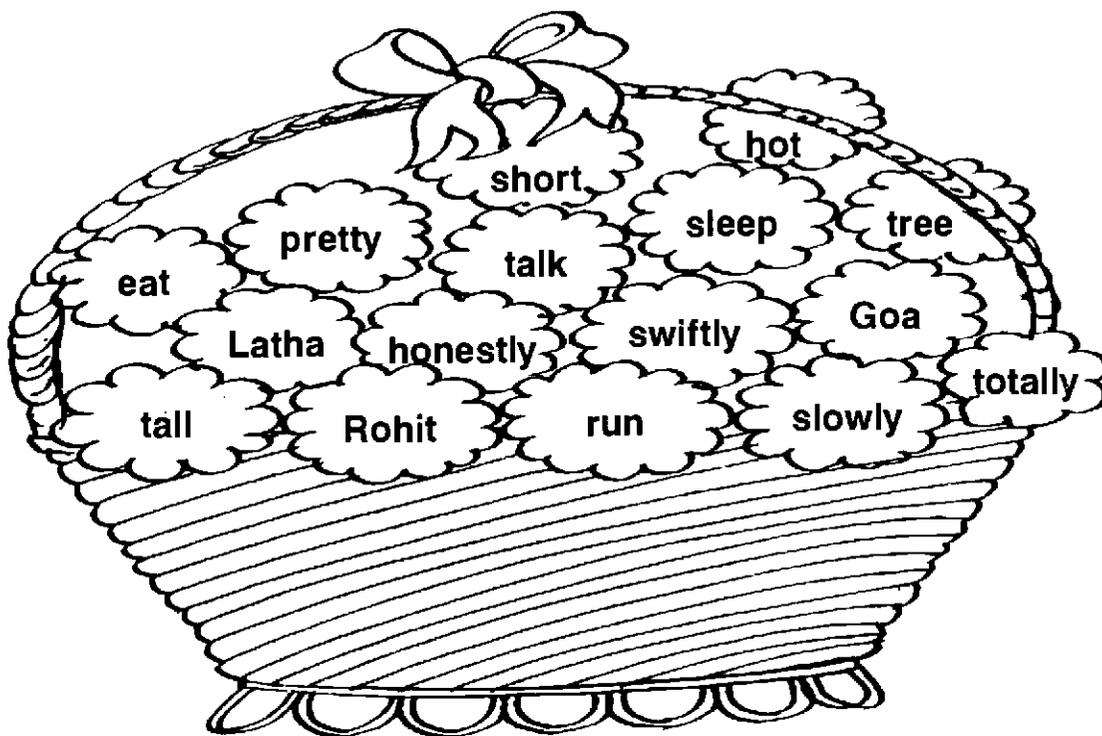
1. She _____ last night (have fever, had fever).
2. My friends have _____ Tajmahal (see, saw, seen).
3. I _____ asleep while she was reading (fallen, fell, falls).
4. We will eat after the bell _____. (rang, ring, rings)
5. Abdul asked if the postman _____ (come, had come).
6. Hurry ! The train has already _____
(is arriving, arrived, arrive).
7. Tinku _____ ice-creams (is loving, will love, loves).
8. Please wait. He _____ in 10 minutes
(will come, came, has come).
9. Do not go away. The programme _____ soon
(will start, started, start).



Skill : Tenses.



This basket has flowers of nouns, verbs, adverbs and adjectives. Seperate them.



| Noun | Adjective | Adverb | Verb |
|------|-----------|--------|------|
| | | | |
| | | | |
| | | | |
| | | | |

Skill : Noun, verb, adverbs, adjectives.



Fill in the blanks with appropriate articles.

Example : I want a toast for breakfast.

1. _____ island is _____ place with water on all sides.
2. _____ Ganges is holy for _____ Hindus.
3. Mumbai is _____ big city.
4. I have _____ umbrella.
5. _____ sun shines brightly.
6. Give me _____ piece of cloth.



Skill : Articles.



Punctuate the following sentences with full stop, commas, question marks and re-write the sentences.

Eg : Where did Ram Vijay and Anu go

Where did Ram, Vijay and Anu go ?

1. How was your weekend
2. Trees have leaves branches, stems and roots
3. The cat chased the rat
4. How are you feeling now better
5. Do you watch movies
6. Blood is red in colour
7. Alas ! we lost the match
8. Wish you a happy Birth day



Skill : Punctuation.



Write the correct degree of comparison.

| Positive | Comparative | Superlative |
|----------------|-------------|-------------|
| 1. tall | taller | tallest |
| 2. dark | _____ | _____ |
| 3. good | _____ | _____ |
| 4. wise | _____ | _____ |
| 5. much | _____ | _____ |
| 6. beautiful | _____ | _____ |
| 7. cheap | _____ | _____ |
| 8. brave | _____ | _____ |
| 9. intelligent | _____ | _____ |
| 10. rough | _____ | _____ |
| 11. expensive | _____ | _____ |
| 12. bad | _____ | _____ |
| 13. tasty | _____ | _____ |
| 14. warm | _____ | _____ |
| 15. hasty | _____ | _____ |

Skill : Degrees of comparison.



Positive – Comparative – Superlative

Write the correct degree of comparison in the blank. Use the word given in the bracket.

1. Antartica is the _____ continent (cold).
2. Australia is _____ than Newzealand (big).
3. Gulf countries have _____ deserts (large)
4. Concord is the _____ aircraft (fast).
5. Mercury is the _____ planet to sun (near).
6. World cup cricket match showed that Indian cricket team is good but Australian team is _____ (good).
7. I like ice cream very much, but I like pastries _____ (much)
8. Mango is _____ than banana (tasty)
9. Ramya is the _____ singer in the school (good).
10. Rahul is a _____ swimmer (good).



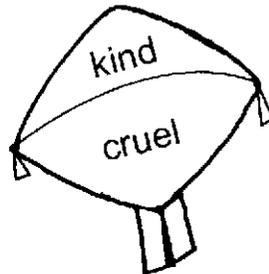
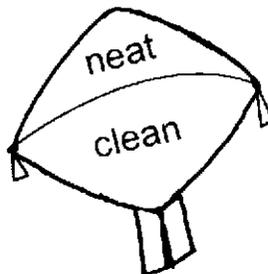
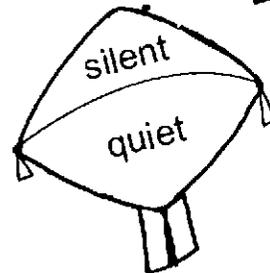
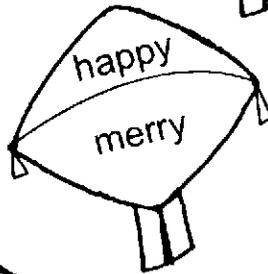
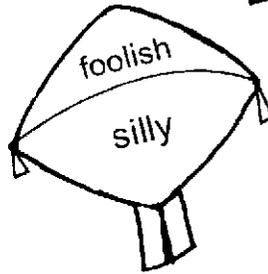
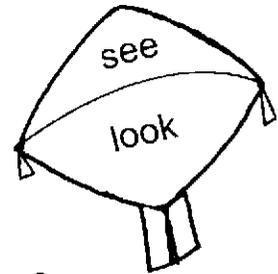
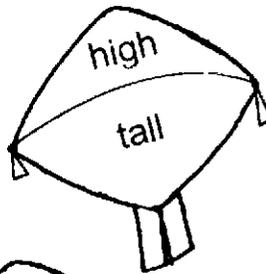
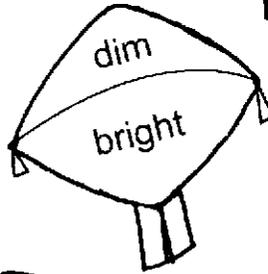
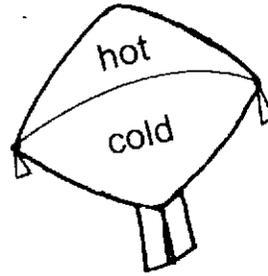
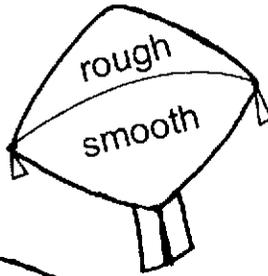
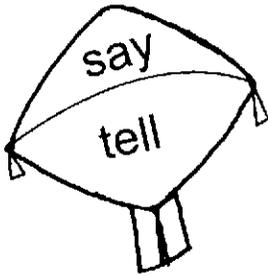
Skill : Degrees of comparison.



WORK SHEET

Colour the kites that have synonyms on them.

Eg :



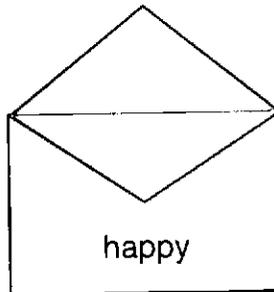
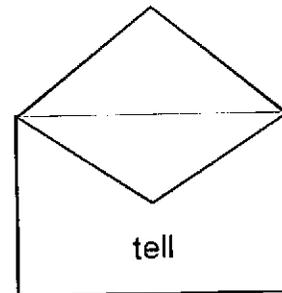
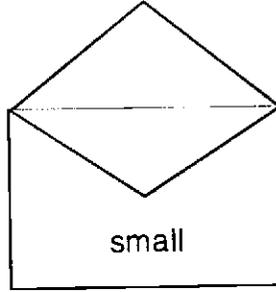
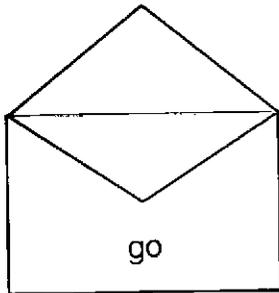
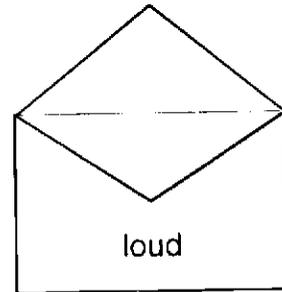
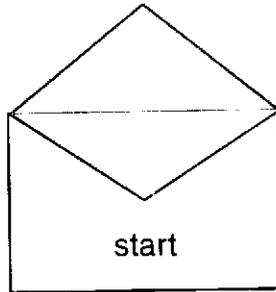
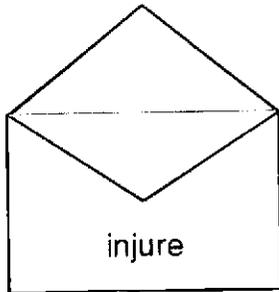
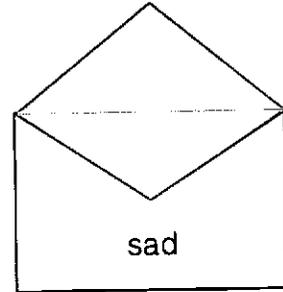
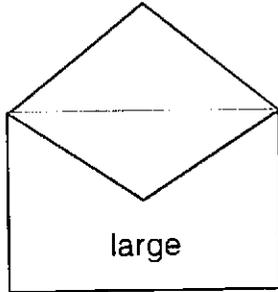
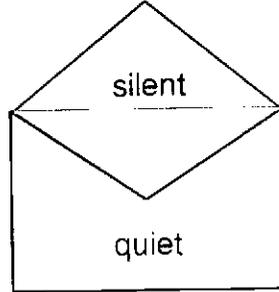
Skill : Synonyms.



WORK SHEET

Pick up the synonym from below and put it in its envelope.

Eg :



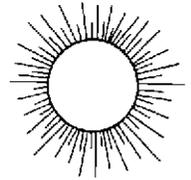
| | | | |
|------|-------|-------|---------|
| tiny | glad | glad | begin |
| hurt | leave | big | unhappy |
| | say | noisy | |

Skill : Synonym

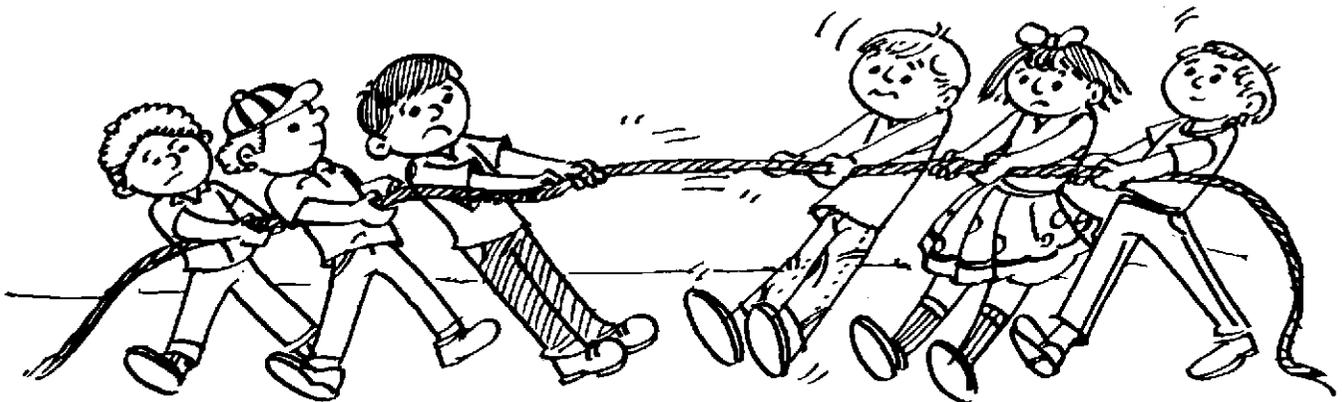


Find the antonyms for the underlined words and fill in the blanks.

Eg : We bought a new TV and sold the old TV.



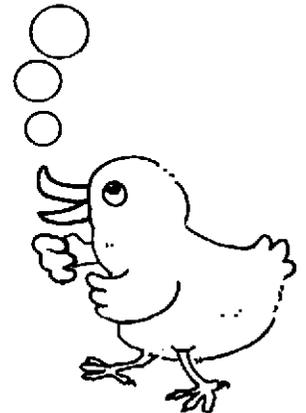
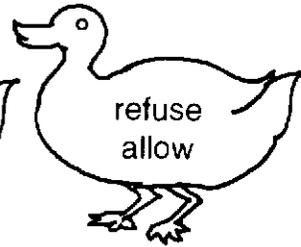
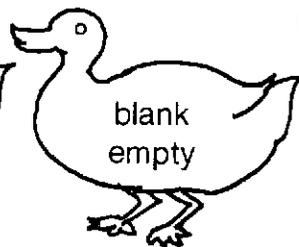
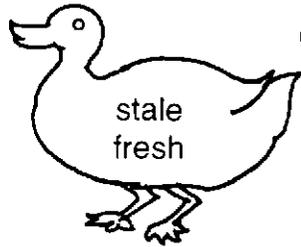
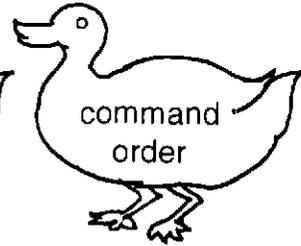
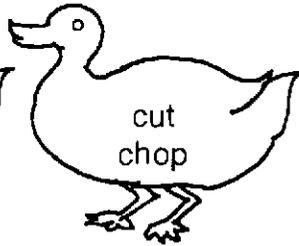
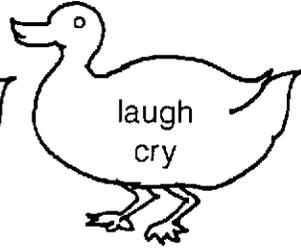
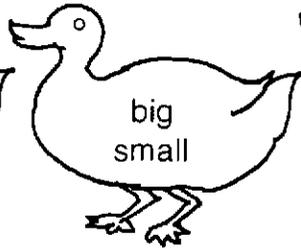
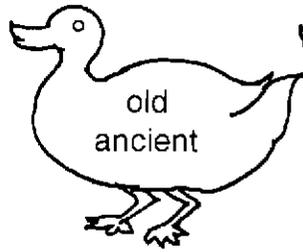
1. On the sky, we see moon in the night and sun in the _____
2. It is hot in summer and _____ in winter.
3. The bucket with water is full and the bucket without water is _____.
4. I lost my pencil box but _____ it a week later.
5. We must not be cruel to animals. We must be _____ to them.
6. Please clean your mug. It is _____.



Skill : Antonyms.



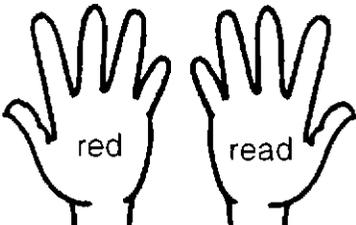
Colour the ducks with synonyms red and antonyms yellow

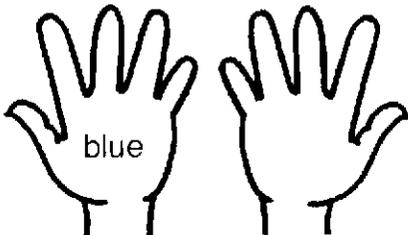


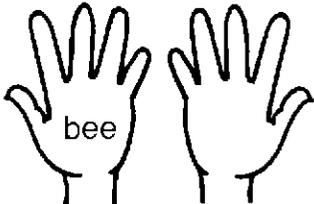
Aim : Synonyms & antonyms.



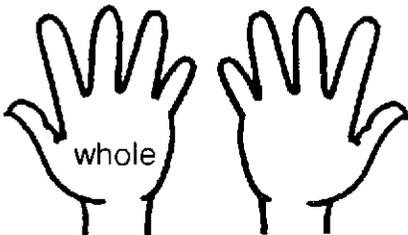
Read the word on the hand. Write its homophone on the empty hand

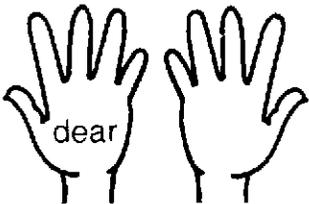
Eg. 

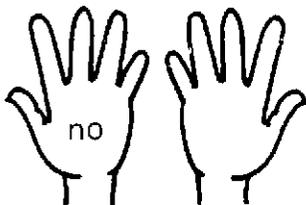




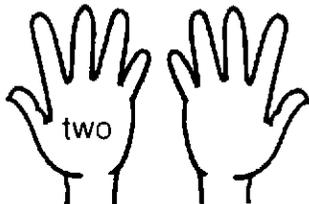




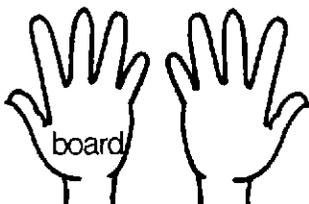


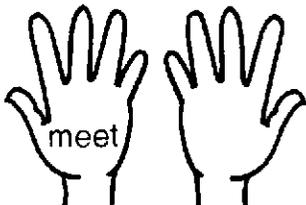










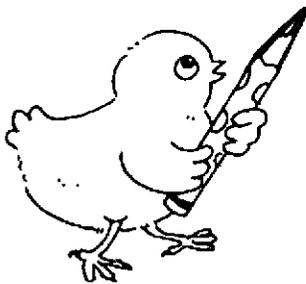
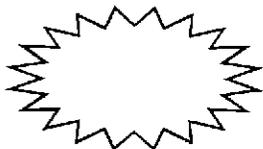
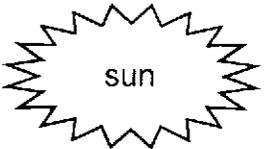
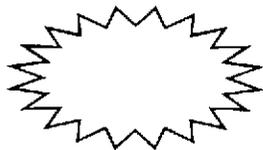
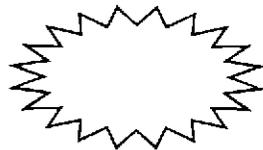
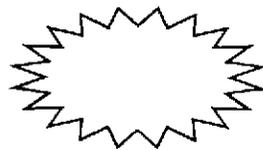
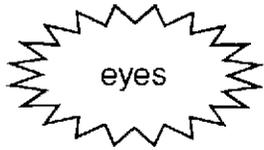
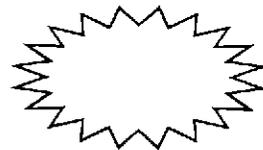
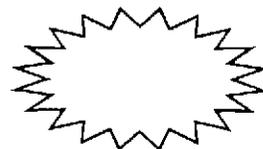


Skill : Vocabulary – homophones.



Write the matching homophone.

Eg.



Skill : Vocabulary – homophones.



Read the sentence. Look at the underlined word. If the homophone is used correctly put a smiling face (😊) at the end of that sentence.

Eg : Radhika is the knees of Sudha. ☹️
We use wood to make furniture. 😊

1. The wind blue hard.
2. I knew you were coming home today.
3. Vinny wants a piece of cake.
4. We right with a piece of chalk on the board.
5. Would you like to have some tea ?
6. Dogs like to eat meat.
7. There are seven days in a weak.
8. We hear with our ears.
9. Keep quite. The baby is sleeping.
10. Let us meet at 5'0 clock.
11. He does not no me.
12. He lives in knew Delhi.



Skill : Homophones.



Help me to get the correct emotions.

_____ ! The meeting is going on.
(Ha, Shh....)

_____ ! She is no more.
(Hurrah, Alas)

_____ ! We won the match.
(Hurrah, Oh)

_____ ! I found it.
(Ah ! Ugh !)

_____ ! I forgot to bring my pen.
(Shh, Oh !)

_____ ! I am so tired.
(Phew, Yeah)

_____ ! You won the battle.
(Alas, Hey)



Skill : Interjections.



Tick the correct statements.

Rewrite the wrong statements correctly.

Eg : We was late. (x)
We were late.

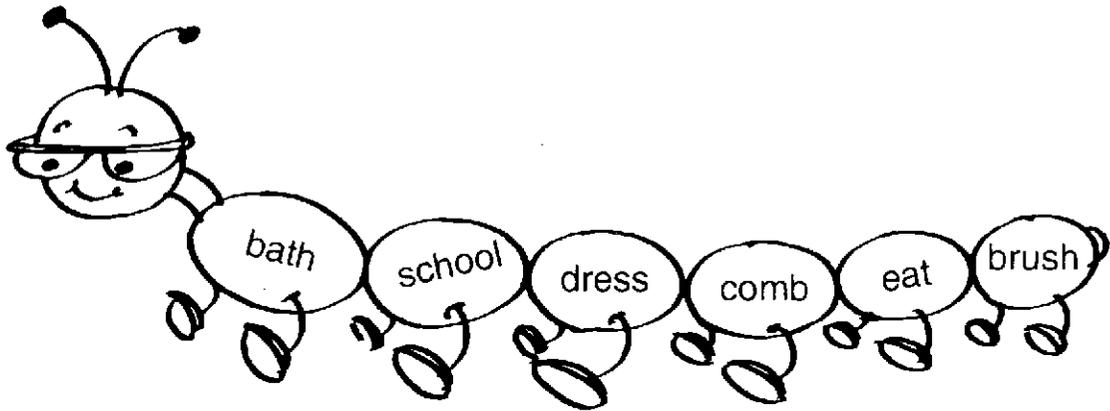
1. I is coming there.
2. This shirt is mine.
3. He is playing with the dog.
4. We will go to the temple yesterday.
5. Shilpa do not know my name.
6. They were happy to see Pooja.
7. We is very hungry.
8. Ambika are in seventh standard.
9. I like to read books.
10. Cakes smells good.



Skill : Sentence construction.



Write what you do when you wake up in the morning.
Use the words on the caterpillar to help you.



In the morning,

Then,

Finally,

Skill : Sentence construction.

TEACHING HINDI

CHAPTER-VI

TEACHING HINDI

हिन्दी भाषा का उद्भव

हिन्दी भाषा का सम्बन्ध युरोपीय कुल की संस्कृत भाषा से है। वस्तुतः इसे संस्कृत भाषा की वंशज या पुत्री भी कहा जाता है। संस्कृत का प्रचलन 5000 ई.पू. से 500 ई.पू. तक माना जाता है। हिन्दी का उद्भव शोरसेनी, अर्धमागधी तथा मागधी अपभ्रंशों से हुआ। भारत का 52 प्रतिशत भाग हिन्दी भाषा - भाषी है। 14 सितम्बर, 1949 को भारतीय संविधान में हिन्दी को राष्ट्रभाषा के रूप में स्वीकार किया गया। भारत संविधान की धारा 343 (1) के अनुसार 26 जनवरी, 1950 से हिन्दी को भारत की राष्ट्रभाषा घोषित किया गया।

हिन्दी को राष्ट्रभाषा के रूप में सम्मान देने पर, सभी भारतीय पाठशालाओं में हिन्दी को एक भाषा के रूप में पढ़ाया जा रहा है। अतः सभी विद्यार्थियों को हिन्दी पढ़ना ज़रूरी हो गया है।

बच्चों के विशेष आवश्यकताओं को पूरा करना - प्रतिभा शक्ति तथा वास्तविक निष्पादन में विसंगति:

अनुभवशाली शिक्षकों ने यह पाया कि कुछ विद्यार्थी प्रतिभाशाली होते हैं, परन्तु वे कुछ प्रकार की कुशलताओं को करने में बार-बार प्रशिक्षण देने के बाद भी असक्षम होते हैं। यदि पढ़ाई हो तो, एक बच्चा जोर से पढ़कर समझ सकता है लेकिन अनुच्चरित पठन में समझ नहीं सकता है। एक और बच्चा निर्देशों का पालन करने में असक्षम रहता है लेकिन लिखने तथा पढ़ने में सक्षम रहता है।

कुछ बच्चों में प्रतिभा शक्ति तथा निष्पादन में विभिन्न स्तर के विसंगतियाँ दिखाई देता है, कुछ बच्चे विद्यालय के परिवर्तन सीखने में असक्षम होते हैं। अधिकतर, बोली गई या लिखित भाषा को समझने में समस्याएँ होती हैं, जिसको पढ़ने, बोलने, सुनने, लिखने तथा वर्तनी में समस्या के रूप में देखा जाता है। ऐसी समस्याएँ सामान्य रूप से गंभीर रूप तक होते हैं। ऐसी परिस्थिति में शिक्षक बच्चों के शैक्षणिक आवश्यकताओं तथा परिवर्तन के अनुरूप शैक्षणिक योजना बनाना चाहिए।

मूल्यांकन

मूल्यांकन प्रत्येक बच्चे के सीखने के ढंग पर आधारित होता है। सभी बच्चों के लिए विस्तृत मूल्यांकन की ज़रूरत नहीं होती है। प्रायः बहुत बच्चों के लिए, उनके क्रियाकलापों को देखकर शिक्षण योजना बनाया जा सकता है।

शिक्षण योजना बनाने के लिए अनौपचारिक परीक्षा का प्रयोग किया जाता है। इसका मुख्य उद्देश्य है-

- कुछ बच्चों को एक कक्षा में समूह बनाना
- उपयुक्त उपाय और आदेश देना
- शिक्षा और सामाजीकरण में कमजोर सामंजस्य वाले बच्चों की मदद करना
- उपयुक्त आदेश के प्रतिफल का विश्लेषण करना

अनौपचारिक परीक्षाएँ

अनौपचारिक परीक्षाएँ शिक्षक द्वारा दिए जाते हैं। इन अनौपचारिक परीक्षाओं को साधारणतः मानक परीक्षाओं

के उपलब्ध न होने पर प्रयोग किये जाते हैं। शिक्षक द्वारा तैयार की गई परीक्षाएँ विशेष होती हैं और किसी एक कुशलता का मूल्यांकन के लिए प्रयोग किया जाता है।
उदाहरण : मात्रा का प्रयोग, आदि।

अनौपचारिक कुशलताएँ

- विशिष्ट होते हैं
- शिक्षक द्वारा दिए जाते हैं
- सरल होते हैं

अनौपचारिक परीक्षाएँ तैयार करने के लिए

- निर्देश स्पष्ट होने चाहिए
- सरल भाषा का उपयोग करना चाहिए, अर्थात्, सरल शब्द और वाक्य
- ऐसे प्रश्नों को शामिल करना चाहिए जिसमें एक ही सही उत्तर हो

शिक्षक द्वारा तैयार की गई परीक्षाएँ सरल कार्य से आरंभ होकर जटिल कार्य की ओर बढ़ना चाहिए।

नमूना अभ्यास

शिक्षक द्वारा तैयार की जाने वाली परीक्षाएँ कुछ इस प्रकार के हो सकते हैं :

श्रवण परीक्षा के लिए:

निम्नलिखित शब्दों को सुनकर यह बताने के लिए कह सकते हैं कि वे समान शब्द हैं या उनमें अंतर है।

- रथ - नथ
- कल - कल
- नाक - नाक
- घर - सर
- बस - बस
- आम - राम

उस शब्द पर गोल लगाने के लिए कह सकते हैं जो दी गई शब्द के समान है।

- राम : फूल काम महल
- मोर : शोर चार घेर
- कील : पीला तिल झील

पठन का मूल्यांकन :

यह अनुमान लगाया गया कि लगभग 10 प्रतिशत सामान्य विद्यार्थी पढ़ने में मुश्किल महसूस करते हैं। ऐसा भी कहा गया कि विद्यालय में अनुत्तीर्णता के कारण पढ़ने में अकुशलता भी हो सकती है। यही नहीं, पढ़ने में अकुशल होना विद्यार्थी के दुर्व्यवहार, दुश्चिंता तथा प्रोत्साहित नहीं होने का कारण भी है।

पढ़ने के लिए दृष्टि-श्रवण प्रक्रिया, चिह्न (अक्षर या शब्द) से अर्थ को समझना जरूरी है। पढ़ने के लिए विकोडन (decoding) करना तथा समझना भी आवश्यक है। विकोडन का यह अर्थ है कि लिखित शब्दों को समझकर बोल-चाल की भाषा के समान रूप में अनुवाद करना। विकोडन कुशलता सीखने वाले को शब्दोच्चारण करने में सहायक होता है। समझने की कुशलता सीखने वाले को उस शब्द का अर्थ ग्रहण करने तथा संदर्भानुसार समझने में सहायक होता है। विद्यार्थी जिनमें पठन कुशलताएँ नहीं हैं वे शब्दों को छोड़ने, शब्दों का गलत उच्चारण, उलटा करके पढ़ना, कुछ और जोड़कर पढ़ना, नई शब्द पढ़ने में झिझक, तथा पहले ही पढ़ चुकी सामग्री को नहीं समझ पाना, जैसे समस्याएँ होते हैं।

नमूना अभ्यास

उस शब्द पर चिह्न लगाने के लिए कह सकते हैं जिसका "अ" में दी गई शब्द के प्रथम अक्षर से "आ" में दी गई प्रथम अक्षर से मिलता है।

- | | |
|-------|---------------------|
| अ | आ |
| हाथ | केला, थैला, हार |
| तबला | तलाब, भालू, गरम |
| घास | मेला, घोड़ा, कुर्सी |
| पायल | कलम, महल, पानी |
| लड़की | सड़क, लकड़ी, माला |

भिन्न शब्द पर गोला बनाने के लिए कह सकते हैं।

| | | | |
|------|------|------|-----|
| साल, | चाल, | हाल, | रात |
| राम, | आम, | कार, | शाम |
| सास, | घास, | पास, | पाठ |
| मन, | तन, | धन, | नल |

समान अर्थ वाले शब्द पर चिह्न लगाएँ।

| | | | |
|-------|-------|--------|---------|
| रात - | दिन, | आज, | रात्री |
| जल - | पानी, | चाय, | खीर |
| आँख - | हाथ, | नेत्र, | मुँह |
| घर - | महल, | गृह, | पाठशाला |

नीचे दिए गए शब्द में दो-दो शब्द छुपे हुए हैं, उन्हें अलग करें।

प्रतिदिन
महारानी
महानपुरुष

वर्तनी मूल्यांकन

शिक्षक द्वारा तैयार की गई परीक्षाओं द्वारा विद्यार्थी के शैक्षणिक स्तर पहचान सकते हैं। अनौपचारिक मूल्यांकन में विद्यार्थी के सभी कुशलताओं को शामिल करें जिसमें वह ठीक करता है या ठीक नहीं करता है और गलतियों की एक सूची तैयार करके उन गलतियों को सुधारने के लिए योजना बनाएँ।

वर्तनी में गलतियों के मूल्यांकन की एक पद्धति है, अवलोकन (Observation)। इसमें इन विषयों को ध्यान से देखना है।

- विद्यार्थी के लेखन
- शब्दों के बीच का स्थान
- उच्चरित (ओरल) तथा लिखित वर्तनी में अंतरण
- शब्दों को एक-एक अक्षर करके पढ़ना
- मात्राओं का सही प्रयोग करने की क्षमता
- संयुक्ताक्षरों को लिखने की क्षमता

वर्तनी में साधारणतः किये जाने वाले गलतियाँ कुछ इस प्रकार के होते हैं :

- अतिरिक्त शब्दों को जोड़ना
- अक्षरों को छोड़ कर लिखना (उदाहरण: बहुत - बहु)
- अक्षरों को इधर - उधर लिख देना (नमक-मनक)
- शब्दों को उल्टा लिख देना (बस-सब)

लिखना:

अधिगम विकलांग बच्चों को साधारणतः लिखित संबंधी समस्याएँ होते हैं और उन्हें लिखित रूप में संप्रेषण करने में समस्याएँ होते हैं। उनके लेखन में वर्तनी, विराम चिह्नांकन में गलतियाँ होते हैं तथा देखने में साफ या स्पष्ट नहीं रहता है। उनके लिखित कार्य सुव्यवस्थित नहीं रहता है।

लेखन का मूल्यांकन:

लिखित अभिव्यक्ति में विद्यार्थी के क्षमता को निर्धारित करते समय, शिक्षक को चाहिए कि इस मूल्यांकन का उद्देश्य पर अधिक ध्यान दें। केवल उन्हीं समस्याओं का मूल्यांकन करना है जिनमें विद्यार्थी कठिन महसूस कर रहा हो। उदाहरण के लिए यदि विद्यार्थी को वर्तनी तथा विराम चिह्नांकन देने में समस्या हो, तो उसी का मूल्यांकन करें।

मानक परीक्षाएँ :

मानक परीक्षाओं द्वारा विद्यार्थी के लिखने की क्षमताओं को पहचान सकते हैं। मानक परीक्षा का प्रयोजन यह है कि विद्यार्थी के निष्पादन को जांच कर सकते हैं कि वह सही स्तर पर है या नहीं। इन परीक्षाओं से यह पहचान सकते हैं कि यदि विद्यार्थी मात्राएँ लगाने में, विराम चिह्न लगाने में या अन्य कोई गलती कर रहा हो। परन्तु इस परीक्षा द्वारा विद्यार्थी द्वारा लिखी गई गद्यांश का विश्लेषण नहीं किया जा सकता है।

अनौपचारिक मूल्यांकन तकनीक

सही ढंग से लिखने के लिए विद्यार्थी को अपने भाव प्रकट करने की क्षमता होना आवश्यक है। यदि विद्यार्थी इसमें क्षमता नहीं रखते हो तो, यह स्पष्ट है कि उनमें लिखित

अभिव्यक्ति में समस्या है अतः विशिष्ट समस्याओं को देखने के लिए अनौपचारिक मूल्यांकन करना आवश्यक है। इसके लिए, विद्यार्थी द्वारा लिखा गया नमूना लेखन जरूरी है। इससे विद्यार्थी के हस्तलेखन, संरचना, शब्दावली, शब्दों एवं अक्षरों के बीच का स्थान, भावों को क्रम में लगाना, वर्तनी तथा विषय का ज्ञान के बारे में जानकारी मिलती है।

लिखित अभिव्यक्ति के लिए शब्दों के प्रयोग, अर्थात् व्याकरण के बारे में भी देखना जरूरी है। व्याकरण प्रयोग में किये जाने वाली गलतियों के कुछ नमूने दिये गये हैं जिससे शिक्षक को एक धारणा मिल सकती है कि अधिगम समस्या वाले बच्चे किस प्रकार की गलतियाँ साधारणतः करते हैं।

श्रुतभाव ग्रहण:

श्रुतभाव ग्रहण अर्थात्, सुनकर ग्रहण करना। सुनकर समझना भी एक कौशल है, जिसका विद्यार्थी में होना अति आवश्यक है। सुने गए शब्द, वाक्य या आदेश को समझने के लिए भाषा का ज्ञान बहुत जरूरी होता है और आदेशों का पालन करने के लिए सुने गए वाक्यांशों या वाक्यों को समझना अति आवश्यक है। अभ्यास के लिए शिक्षक बच्चों को छोटे-छोटे सरल आदेश देकर उनका पालन करने के लिए कहते हैं। जब बच्चा इन आदेशों का सही ढंग से पालन करता है तब यह बात स्पष्ट हो जाती है कि वह सुनने और समझने में कोई कठिनाई महसूस नहीं करता है।

सुनना और समझना अभ्यास कराने के लिए शिक्षक बच्चों को छोटे-छोटे कार्य करने के लिए सरल आदेश देता है, जैसे कि,

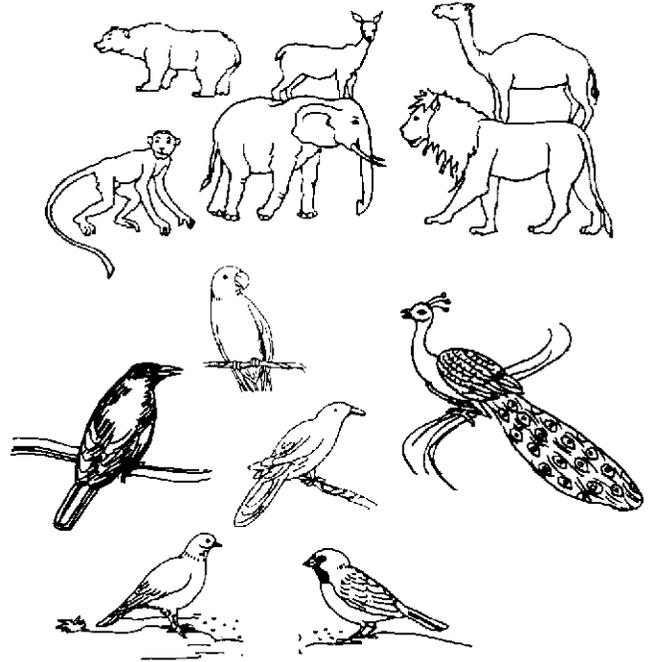
- दरवाजा बन्द करो।
- अपना पेन्सिल दिखाओ।
- पुस्तक को मेज़ पर रखो।

जब बच्चे सरल आदेशों को सही ढंग से करने लगते हैं, तब शिक्षक उन्हें थोड़े जटिल कार्य करने के लिए कह सकते हैं। जैसे कि,

- बच्चों खड़े हो जाओ। अपने हाथ ऊपर करो।
- मेज़ पर बैग रखो। उसमें से हिन्दी पुस्तिका निकालो।
- बैग में से पेन्सिल बॉक्स निकालो। उसमें से कलम निकालकर मुझे दिखाओ।

जब बच्चे इन कार्यों को ठीक तरह से करते हैं तो यह बात स्पष्ट हो जाती है कि वे शिक्षक द्वारा बोले और पूछे गए आदेश या प्रश्न समझते हैं। अब शिक्षक, बच्चों को गद्यांश, कथा और कविता सुना सकते हैं और प्रश्न पूछ सकते हैं। बच्चे शिक्षक द्वारा पूछे गए सवालों के उत्तर मौखिक रूप से एक शब्द में या वाक्यांश में दे सकते हैं।

उदाहरण : चिड़िया घर



एक जगह पर जहाँ बहुत से पशु और पक्षी एक साथ रहते हैं, उस जगह को चिड़िया घर कहते हैं। चिड़िया घर में शेर, हाथी, भालू, ऊँट, हिरण, बंदर, मगरमच्छ आदि पशु रहते हैं और मोर, कबूतर, तोता, गौरय, मैना, कोयल, आदि पक्षी रहते हैं। इन पशु-पक्षियों को देखने के लिए हम टिकट लेकर चिड़िया घर में जाते हैं। पशु-पक्षियों को पिंजरे में रखते हैं।

प्रश्न :

- 1) चिड़ियाघर में कौन रहता है ?
- 2) चार पशुओं के नाम बताओ।
- 3) चार पक्षियों के नाम बताओ।
- 4) चिड़ियाघर में जाने के लिए क्या करना पड़ता है ?
- 5) पशु-पक्षियों को कहाँ रखते हैं?

बच्चे, शिक्षक द्वारा पूछे गए प्रश्नों का मौखिक रूप से जवाब देंगे।

गद्यांश के बाद शिक्षक बच्चों को कविता सुनाकर पढ़ाते हैं और बच्चों से प्रश्न पूछते हैं। शिक्षक कविता को रोचक ढंग से बच्चों को सुनाएँगे और समझाएँगे।

उदाहरण :

कविता

मछली जल की रानी है,
जीवन उसका पानी है।
हाथ लगाओ डर जाएगी
बाहर निकालो मर जाएगी।



समझाना :

"मैं एक कविता सुनाऊँगी, तुम उसे ध्यान से सुनो और समझो। इस कविता के आधार पर मैं प्रश्न पूछूँगी और तुम जवाब देना। जानते हो बच्चों, पानी में कौन रहता है? अच्छा चलो, मैं बताती हूँ। पानी में मछली रहती है। मछली छोटी, बड़ी, पतली, मोटी सभी प्रकार की होती हैं। इसीलिए मछली को पानी या जल की रानी कहते हैं। मछली एक ऐसी प्राणी है जो पानी के बिना जीवित नहीं रह सकती है। क्या आप जानते हो, मछली पानी के बाहर क्यों नहीं रह सकती ? क्योंकि मछली का शरीर पानी में रहने के लिए अनुकूल है और आदमी का शरीर पानी के बाहर रहने के लिए अनुकूल है। आदमी पानी में साँस नहीं ले सकता है।

जब हम पानी में मछली को पकड़ने की कोशिश करते हैं, तो वह डर जाती है। पानी में से मछली को निकालने से वह मर जाती है"।

प्रश्न :

- 1) मछली कहाँ रहती है?
- 2) मछली को क्या कहते हैं ?
- 3) मछली का जीवन क्या है ?
- 4) मछली को हाथ लगाने से क्या होगा ?
- 5) मछली को पानी में से बाहर निकालने से क्या होगा?

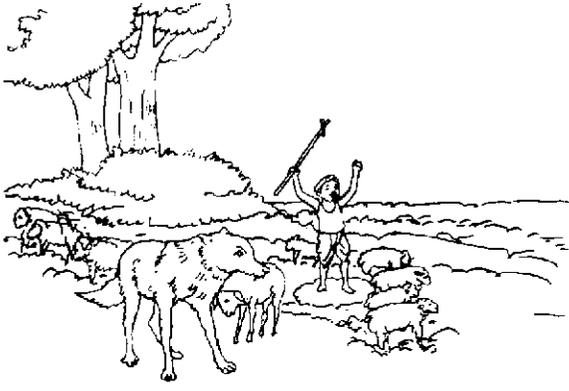
शिक्षक से पूछे गए प्रश्नों का जवाब बच्चे मौखिक रूप से देते हैं। इसी तरह शिक्षक बच्चों को कहानी भी सुनाकर उन्हें समझाती है। बच्चे कहानी को सुनकर और समझकर पूछे गए प्रश्नों के जवाब देते हैं।

एसे ही शिक्षक बच्चों को कथा सुनाकर प्रश्न पूछेंगे। कहानी सुनाने और समझाने के लिए उदाहरण दी गई है।

कहानी : झूठ की सजा।



एक बच्चा था। उसका नाम गोपाल था। वह चरवाहा था। वह प्रतिदिन जंगल में मेमना चराने जाता था। उसके साथी भी जानवरों को चराने वहीं आते थे। गोपाल रोज "भेड़िया आया - भेड़िया आया" बोलकर सबको डराता था। एक दिन वास्तव में भेड़िया आया, पर उसके आवाज़ देने के बावजूद कोई उसकी मदद के लिए नहीं आया। भेड़िया उसके मेमनों को मारकर खा गया।



तो बच्चों, इस कहानी से आपको क्या शिक्षा मिली ? यही न कि, हमें झूठ नहीं बोलना चाहिए। क्योंकि झूठ बोलना हमारे और समाज दोनों के लिए हानिकारक हो सकता है। झूठ का फल हमेशा बुरा होता है।

शिक्षक बच्चों से कहानी संबंधित प्रश्न पूछते हैं जिनके जवाब वे मौखिक रूप से देते हैं।

प्रश्न :

- 1) गोपाल कहाँ जाता था ?
- 2) गोपाल क्या करता था ?
- 3) गोपाल क्या पुकारता था ?
- 4) अंत में क्या हुआ?
- 5) इस कहानी से हमें क्या सीखने को मिलता है ?

शिक्षक बच्चों के सुनने और समझने की सामर्थ्य को सुधारने के लिए कुछ वाक्य सुना सकते हैं, जिनका जवाब बच्चों को मौखिक रूप से हाँ या ना में देना चाहिए।

इसी प्रकार शिक्षक और कई वाक्य बच्चों को सुनाकर उनका जवाब पूछ सकते हैं। अभ्यास के लिए एक गद्यांश, कविता और कहानी दी गई है जिन्हें शिक्षक को बच्चों को समझाना है और प्रश्न पूछना है।

पढ़ना और लिखना:

बच्चों को जब पढ़ना सिखाया जाता है तब उन्हें लिखना भी सिखाते हैं। अक्षर की पहचान करके जब बच्चे पढ़ने लगते हैं तब उन्हें यह भी सिखाया जाता है कि उस अक्षर को कैसे लिखा जाता है। पढ़ना सिखाते समय पहले चित्रों को पहचानकर पढ़ना सिखाना चाहिए। ये चित्र ऐसे होने चाहिए जो बच्चा अपने आस पास देखता या पहचानता हो। जब

बच्चा दिए गए चित्रों को पहचानकर पढ़ने लगता है तब उसे ऐसे चित्र दिखाना चाहिए जिसमें कहानी चित्रित हो। इस तरह बच्चा चित्र देखकर कहानी को समझकर पढ़ना सीख जाता है।

अब उन्हें चित्र के साथ उसका नाम पढ़ा सकते हैं। ऐसे चित्र पढ़ाना चाहिए जिनके नाम दो या तीन अक्षर वाले शब्द हो। ऐसे पढ़ाने से बच्चे चित्र के साथ-साथ उनके नाम कैसे लिखते हैं, यह भी सीख लेते हैं।

बच्चों को अक्षर लिखना सिखाने से पहले कुछ आकृतियों को सिखाना बहुत जरूरी है। हिन्दी वर्णमाला के सभी अक्षरों में टेढ़ी मेढ़ी लकीर होते हैं। इसीलिए बच्चों को आकृतियाँ सिखाना जरूरी है जो सरल से जटिल के क्रम में हो।

।, —, /, \ आदि सरल आकृतियाँ हैं। (,), ^, ∪ आदि जटिल आकृतियाँ हैं। इन आकृतियों को सिखाने के लिए आप दिए गए वर्कशीट के उपयोग कर सकते हैं। बच्चे जब इन आकृतियों को सही ढंग से लिखना सीख लेते हैं, तब उन्हें अक्षर लिखना सिखा सकते हैं।

लिखने के चार चरण होते हैं - अनुसंधान करना, बिंदुओं को जोड़ना, प्रतिलिपि और स्वतंत्र रूप से लिखना।

बच्चों को जब चित्र के साथ उनका नाम पढ़ाया जाता है तब उन शब्दों में लिखे अक्षरों को एक-एक करके सिखाना चाहिए। इन अक्षरों को लिखना सिखाते समय लिखने के चार चरणों का प्रयोग करना चाहिए।

उदाहरण : बस - इस शब्द में बच्चों को ब और स अलग-अलग करके सिखाना चाहिए। जब बच्चे ब और स लिखना सीख लेते हैं, तब उन अक्षरों को जोड़कर बस लिखना सिखा सकते हैं।

बच्चे जब अक्षरों को लिखना सीख लेते हैं, तब उन्हें छोटे-छोटे शब्द लिखने के लिए प्रोत्साहित कर सकते हैं।

पढ़ना एक मुश्किल कार्य है, क्योंकि किसी भी अक्षर या शब्द को पढ़ने के लिए उस अक्षर को पहचानकर बोलना पड़ता है। उसी तरह लिखना भी आसान कार्य नहीं है। लिखे गए अक्षर, शब्द या वाक्य को पढ़ने के लिए अक्षर ज्ञान जितना जरूरी है उसी तरह बोले हुए अक्षरों / शब्दों

को लिखने के लिए यह ज्ञान रखना आवश्यक है कि उन अक्षरों को कैसे लिखा जाता है।

पढ़ते समय जब छोटे-छोटे शब्द चित्रों के साथ पढ़ाया जाता है तब उन्हें यह भी सिखाना चाहिए कि उस शब्द को कैसे बोला जाता है। इन शब्दों में अक्षरों को एक-एक करके पढ़ाया जाता है। जब इन अक्षरों को पढ़ाते हैं तब उनका सही उच्चारण भी सिखाना चाहिए।

हिन्दी एक ऐसी भाषा है, जिसे जैसे उच्चारित किया जाता है, वैसे ही लिखा जाता है।

अक्षरों के उच्चारण सिखाने के लिए आप तरह-तरह की ध्वनियाँ अपने मुँह से निकालकर बच्चों को भी वैसे ही करने को कहिए। भाषा को बोलने में हम ध्वनियों का प्रयोग करते हैं और लिखने में चिह्न का प्रयोग करते हैं। ये चिह्न लिपि कहलाते हैं। हिन्दी देवनागरी लिपि में लिखी जाती है। भाषा की सबसे छोटी ध्वनि को वर्ण कहते हैं। इन्हीं वर्णों से वर्णमाला बनती है।

हिन्दी वर्णमाला में कुल 48 वर्ण हैं। उच्चारण के आधार पर वर्णों को प्रकार के होते हैं - स्वर और व्यंजन।

स्वर :

जिन वर्णों का उच्चारण करते समय मुँह से हवा बिना रुकावट के निकले, उन्हें स्वर कहते हैं। अ, आ, इ, ई, उ, ऊ, ऋ, ए, ऐ, ओ, औ । अं और अः को अनुस्वर कहते हैं।

व्यंजन :

जिन वर्णों का उच्चारण करने से मुँह में हवा को रोका जाता है, उन्हें व्यंजन कहते हैं। "क" से "ह" तक।

क्ष, त्र, ज्ञ को व्यंजनाक्षर कहते हैं।

बच्चे जब वर्णमाला के सारे अक्षर को पढ़ना, लिखना और उनका सही उच्चारण सीख लेते हैं, तब उन्हें शब्द लिखना और पढ़ना सिखा सकते हैं।

एक से ज्यादा अक्षरों को जोड़कर जब एक साथ लिखा जाता है तब उन्हें शब्द कहा जाता है। हिन्दी भाषा में अक्षर जैसे बोले जाते हैं वैसे ही लिखे जाते हैं। इसलिए 2-3 अक्षर वाले शब्द लिखना ज्यादा मुश्किल कार्य नहीं है।

दो अक्षर वाले शब्द : घर, हल, फल

तीन अक्षर वाले शब्द : कमल, ऐनक, शहर

अभ्यास के लिए शिक्षक बच्चों से शब्द लिखने, बोलने या पढ़ने के लिए कह सकते हैं। वे चित्र बनाकर उनका नाम भी लिखने को कह सकते हैं। शिक्षक को पहले दो अक्षर वाले शब्द और उसके बाद तीन अक्षर वाले शब्द पढ़ाना चाहिए।

वर्णमाला पढ़ते समय हमने देखा कि हिन्दी वर्णमाला में तीन संयुक्त व्यंजन हैं - क्ष, त्र, ज्ञ। उसी प्रकार हिन्दी भाषा में कई संयुक्ताक्षर हैं।

संयुक्ताक्षर :

जब दो व्यंजनों को जोड़कर लिखते हैं, तो उसे संयुक्ताक्षर कहते हैं। संयुक्ताक्षर में एक पूर्ण व्यंजन और एक आधा व्यंजन का मेल होता है। यह मेल दो समान व्यंजन के बीच या दो अलग व्यंजनों के बीच हो सकता है।

उदाहरण : र् + म = र्म - ध + र्म = धर्म
क् + क = क्क - च + क्की = चक्की

कुछ अन्य संयुक्ताक्षर इस प्रकार के हैं : छ, द्र, च्च, ह्य, ल्ल, त्य, र्ण, व्य।

संयुक्ताक्षर को बोलते समय पहले आधा व्यंजन का उच्चारण करने के बाद पूर्ण व्यंजन का उच्चारण किया जाता है।

शिक्षक संयुक्ताक्षर पढ़ाते समय इन अक्षरों से शब्द श्यामपट्ट पर लिखकर बच्चों को पढ़ने और लिखने को कह सकते हैं। जब बच्चे संयुक्ताक्षर सीख लेते हैं, तब उन्हें स्वयं शब्द लिखने को कहा जा सकता है।

हिन्दी भाषा की विशेषता यह है कि, जैसे उच्चारित होती है, वैसे ही लिखी जाती है। स्वरों के लिए मात्रा चिह्न निर्धारित है और उन्हें व्यंजनों के साथ मिलाकर लिखा जाता है।

मात्राओं को व्यंजनाक्षरों के साथ जोड़कर लिखा जाता है और उसे वारसखड़ी कहते हैं।

उदाहरण : क-क, का, कि, की, कु, कू, कृ, के, कै, को, कौ, कं, कः

बच्चे बारहखड़ी लिखते समय पढ़ते हुए लिखेंगे तो वह उस व्यंजन और मात्रा का उच्चारण भी सीख सकते हैं। बच्चों को अभ्यास के लिए शिक्षक सारे व्यंजनों के बारहखड़ी को लिखने और पढ़ने के लिए कह सकती है।

शब्दों का वह मेल जिसका पूरा अर्थ निकले, उसे वाक्य कहते हैं। सार्थक शब्द समूह को वाक्य कहा जाता है। वाक्य के सार्थक होने के लिए शब्दों का सार्थक होना आवश्यक है। वाक्य में शब्द तब सार्थक होता है, जब उसको ठीक स्थान पर अथवा क्रमानुसार रखा जाए।

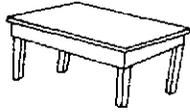
हिन्दी के वाक्यों में शब्दों को मान्य क्रम अथवा अधिकतम प्रचलित क्रम इस प्रकार है - कर्ता सबसे पहले रखा जाए और क्रिया सबसे अंत में रखी जाए।

उदाहरण के लिए कुछ वाक्य इस प्रकार है :

इस लड़की का नाम राधा है।



यह मेज़ है।



यह बिल्ली है।



ऊपर दिए गए वाक्यों में देखा गया है कि चित्र में दिए गए प्राणी और वस्तु के नाम लिखे हैं। जिन शब्दों से यह स्पष्ट हो कि वह किसी प्राणी, जगह या वस्तु का नाम है उसे संज्ञा कहते हैं।

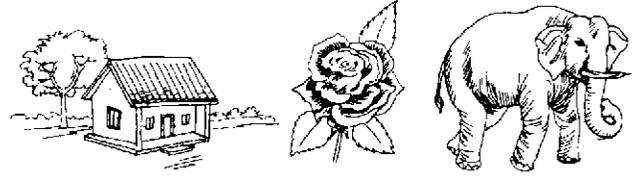
बच्चों के अभ्यास के लिए शिक्षक और भी छोटे-छोटे वाक्य पढ़ने और लिखने के लिए प्रोत्साहित कर सकती हैं। चित्र बताकर छात्रों से वाक्य बोलने के लिए भी कह सकती हैं।

संज्ञा :

बच्चों को संज्ञा शब्दों का परिचय रोचक ढंग से कीजिए। इसके लिए कुछ गतिविधियाँ निम्नलिखित है :

आप बच्चों को एक चार्ट दिखाइए, जिसमें प्राणी, जगह और वस्तु के चित्र हों। एक-एक बच्चे को चित्र का नाम बताकर श्यामपट्ट पर लिखने के लिए कहिए।

उदाहरण : आम, घर, मेज़, हाथी, गुलाब, पाठशाला।



जिन शब्दों से किसी प्राणी, जगह या वस्तु के नाम का बोध हो, उन्हें संज्ञा कहते हैं।

आप बच्चों को शब्दों से खेलने के लिए प्रोत्साहित कीजिए। आप किसी बच्चे को वर्णमाला बोलने के लिए कहिए। बीच में रुकने के लिए कहिए, बच्चा जिस अक्षर पर रुकता है उस अक्षर से आदमी का नाम, जगह का नाम, पशु / पक्षी का नाम और वस्तु का नाम लिखने के लिए कहिए।

उदाहरण : बच्चा "ह" अक्षर पर रुका।

| | | | |
|--------|--------|------------|--------|
| आदमी | जगह | पशु/ पक्षी | वस्तु |
| का नाम | का नाम | का नाम | का नाम |

ह : हरि हैदराबाद हरिण हल

नमूना अभ्यास

नीचे दिये गये अक्षरों से नाम लिखिए:

| अक्षर | आदमी का नाम | जगह का नाम | पशु / पक्षी का नाम | वस्तु का नाम |
|-------|-------------|------------|--------------------|--------------|
| ग | गौरी | गोवा | | |
| म | | | | |
| ह | | | | |
| ल | | | | |
| त | | | | |
| ब | | | | |
| क | | | | |
| स | | | | |
| च | | | | |

नमूना अभ्यास

संज्ञा शब्दों को पहचानकर गोला बनाइए और नीचे दिये गए खाली जगह में इन शब्दों को लिखिए।

| | | | | | |
|-----|----|----|------|-----|------|
| शे | क | ख | र | चाँ | द |
| र | म | ह | मे | ज | श |
| न | ल | रि | दि | स | प्रि |
| पु | झ | ण | ल्ली | झ | या |
| स्त | बं | द | र | गें | द |
| क | ता | रा | ट | पं | खा |

1. कलम
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____

लिंग:

लिंग को रोचक ढंग से पढ़ाने के लिए निम्नलिखित गतिविधियों को बच्चे के साथ कीजिए।

आप एक चार्ट पर ऐसे चित्र बच्चों को दिखाइए जो सिर्फ लड़की और लड़के का रूपरेखा हो। इन चित्रों के ऊपर लगाने के लिए कपड़ों के छोटे-छोटे चित्र बच्चों को दीजिए। बच्चे लड़की को साड़ी और ब्लाउज़, लड़के को कुरता-कमीज़ पहना सकते हैं। अब आप बच्चों को उन चित्रों के नाम पूछिए। बच्चे लड़का, लड़की कहेंगे। अब आप कहिए कि सारे प्राणीयों को दो प्रकार में विभाजित किये जाते हैं - पुरुषलिंग और स्त्रीलिंग।

जिन संज्ञा शब्दों से पुरुष जाति का बोध हो, उन्हें पुल्लिंग कहते हैं। उदाहरण: लड़का, पिता।

जिन संज्ञा शब्दों से स्त्री जाति का बोध हो, उन्हें स्त्रीलिंग कहते हैं। उदाहरण: लड़की, माँ।

याद रखें -

जिन शब्दों के अंत में ई, बट, हट, ता, आई, या, आस, होते हैं, वे स्त्रीलिंग होते हैं। उदाहरण: नगरी, बनावट, घबराहट, भिन्नता, मिठास, कुटिया, आदि।

जिन शब्दों के अंत में अ, पा, पन, त्व, हो वे शब्द पुल्लिंग होते हैं। उदाहरण: तन, मन, बुढ़ापा, आदि।

वचन:

वचन का परिचय करने के लिए निम्नलिखित गतिविधि का प्रयोग कीजिए।

आप कक्षा में कुछ लकड़ियाँ लेकर जाइए और दाएँ हाथ में एक लकड़ी पकड़कर चार लकड़ियाँ बाएँ हाथ में पकड़िए। अब आप बच्चों से पूछिए कि मेरे हाथों में कितने लकड़ियाँ हैं। बच्चे कहते हैं कि आपके बाएँ हाथ में एक लकड़ी है और दाएँ हाथ में चार लकड़ियाँ हैं। अब आप कहिए कि एक लकड़ी को एक वचन और एक से ज्यादा लकड़ियों को बहुवचन कहते हैं।

जिस संज्ञा शब्द से एक वस्तु का बोध हो, वह एक वचन होती है। उदाहरण: लड़का।

जिस संज्ञा शब्द से एक से अधिक वस्तुओं का बोध हो, वह बहुवचन होती है। उदाहरण: लड़के।

| एक वचन | बहुवचन |
|--------|--------|
| आँख | आँखें |
| ऋतु | ऋतुएँ |
| कपड़ा | कपड़ें |

एक बच्चे को अपने बाएँ ओर आकर खड़े होने को कहिए और पाँच बच्चों को अपने दाएँ ओर खड़े होने के लिए कहिए। अब आप बाकी बच्चों से इस अवस्था को परिभाषित करने के लिए कहेंगे। बच्चे कह सकते हैं कि एक बच्चा है तो उसे लड़का कहेंगे और दाएँ ओर वाले बच्चों को लड़कें क्योंकि वे एक से ज्यादा हैं।

लड़का - लड़के

याद रखें -

पुल्लिंग शब्दों को एक वचन से बहुवचन करने के लिए कुछ नियम हैं।

- * शब्द के अन्तिम आ(ः) को ए(ँ) कर देते हैं।
उदाहरण: लड़का - लड़के, कपड़ा - कपड़े
- * अ, इ, ई, उ, ऊ अंत वाले शब्द दोनों वचनों में समान रहते हैं। उदाहरण: घर - घर, अग्नि - अग्नि

स्त्रीलिंग शब्दों को एक वचन से बहुवचन करने के लिए कुछ नियम हैं।

- * अन्तिम अ को ऐ (ँ) में बदल देते हैं।
उदाहरण: बहिन - बहिनें, औख - औखें
- * आ के आने से जोड़ दिया जाता है।
उदाहरण: लता - लताएँ, माता - माताएँ
- * अन्तिम उ, इ, का उर्ए हो जाता है।
उदाहरण: वस्तु - वस्तुएँ, बहू - बहूएँ
- * इ अन्तिम शब्दों में इयों जोड़ दिया जाता है।
उदाहरण: नदी - नदियाँ, रानी - रानियाँ
- * अन्तिम या को यी कर देते हैं।
उदाहरण: चिड़िया - चिड़ियाँ, गुड़िया - गुड़ियाँ

सर्वनाम

सर्वनाम शब्दों को रोचक ढंग से पढ़ाने के लिए निम्नलिखित गतिविधियों को बच्चों के साथ कीजिए।

आप एक बच्चे को उठाकर उससे तीन प्रश्न पूछिए।

उदाहरण:

- शिक्षक : मोहन तुम्हारे पिताजी का नाम क्या है ?
बच्चा : किशन
शिक्षक : तुम्हारा घर कहाँ है ?
बच्चा : सिकंदराबाद
शिक्षक : तुम्हारे कितने भाई - बहन हैं ?
बच्चा : एक भाई और एक बहन हैं।

अब आप और एक बच्चे को उठाकर मोहन द्वारा बोले गए जवाबों को बोलने के लिए कहिए। आप इन जवाबों को श्यामपट्ट पर लिखिए।

मोहन के पिताजी का नाम किशन है।

मोहन का घर सिकंदराबाद में है।

मोहन का एक भाई और एक बहन हैं।

अब आप बच्चों से कहिए कि ऊपर दिये गये वाक्यों में "मोहन" बार-बार लिखा गया है। इन वाक्यों को ऐसे भी लिखा जा सकता है।

मोहन के पिताजी का नाम किशन है

उसका घर सिकंदराबाद में है।

उसका एक भाई और एक बहन हैं।

जिन शब्दों को रोचक शब्दों की जगह प्रयोग किया जाता है उन्हें सर्वनाम कहते हैं।

उदाहरण: वह, उसका, उसकी, हमारा, मेरा, आपका, आदि।

वह मेरा घर है।

तुम कहाँ जा रही हो?

हमें रोज नहाना चाहिए।

क्रिया :

क्रिया को रोचक ढंग से पढ़ाने के लिए निम्नलिखित गतिविधियों को बच्चों के साथ कीजिए।

आप कुछ चिड़ियाँ लेकर जाएँ और एक बच्चे को बुलाकर एक चिड़ी उठाने के लिए कहिए। बच्चे को चिड़ी में लिखा हुआ शब्द पढ़कर श्यामपट्ट पर लिखना है और वह कार्य करना है।

उदाहरण:

चिड़ी में "नाचना" लिखा हो, तो बच्चों को नाचना है।

इसी प्रकार आप दूसरे बच्चों से एक-एक चिड़ी उठाकर उसमें लिखे शब्द को श्यामपट्ट पर लिखकर वह कार्य करने के लिए कहिए।

जब सारे शब्दों का श्यामपट्ट पर लिखना खत्म हो जाए तब आप उन शब्दों को पढ़कर बच्चों से कहिए कि इन शब्दों को क्रिया कहते हैं।

उदाहरण: नाचना, रोना, सोना, खाना।

जिन शब्दों से किसी काम का करना या होना ज्ञात हो, उन्हें क्रिया कहते हैं।

उदाहरण: राजेश दौड़ता है।
मीना खेलती है।
पायल लिखती है।

ऊपर दिये गये वाक्यों में रेखांकित किये गये शब्द, क्रिया कहलाते हैं।

विशेषण :

विशेषण को पढ़ाने के लिए निम्नलिखित गतिविधियों को बच्चों के साथ कीजिए।

आप बच्चों को कुछ चित्र बताइए और उन्हें पूछिए कि चित्र में उपस्थित प्राणी या वस्तु कैसा दिखता है।

उदाहरण :

एक लम्बे आदमी का चित्र दिखाकर पूछे कि वह कैसा दिखता है?

लम्बा

एक मोटा और पतला लकड़ी दिखाकर पूछो कि वह कैसे दिखते हैं।

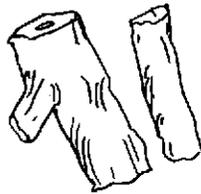
मोटा

मोटा लकड़ी, पतला लकड़ी

बच्चे तुरंत कहेंगे कि एक लकड़ी मोटा है और एक लकड़ी पतला है।

गुलाब के फूल दिखाकर पूछो कि वह कैसा दिखता है।

सुन्दर।



बच्चों के द्वारा बोले गए जवाबों को आप श्यामपट्ट पर लिखते जाइए। कुछ शब्द लिखने के बाद आप बच्चों से कह सकते हैं कि इन शब्दों को विशेषण कहा जाता है क्योंकि वह किसी वस्तु या प्राणी की विशेषता बतलाते हैं। उदाहरण: दौड़ना, खेलना।

जो शब्द संज्ञा या सर्वनाम शब्दों की विशेषता बताते हैं, वे विशेषण कहलाते हैं।

विशेषण के बारे में और विस्तार से पढ़ाने के लिए कार्य-पुस्तिका का उपयोग कीजिए।

पर्यायवाची शब्द :

पर्यायवाची शब्दों को पढ़ाने के लिए निम्नलिखित गतिविधियों को बच्चों के साथ कीजिए।

आप श्यामपट्ट पर कुछ शब्द लिखिए और बच्चों से उनके पर्यायवाची शब्द पूछिए।

उदाहरण :

आँख : नयन, नेत्र

आकाश : आसमान, अम्बर

इस विषय को और विस्तार से पढ़ाने के लिए आप दिये गये कार्य पुस्तिका का उपयोग कीजिए।

विपरीत शब्द:

विपरीत शब्दों को रोचक ढंग से पढ़ाने के लिए निम्नलिखित गतिविधियों को बच्चों के साथ कीजिए।

आप कक्षा में सारे बच्चों को दो वर्गों में बाँट दीजिए। अब आप बच्चों को कहिए कि हम एक खेल खेलेंगे। इस खेल में (अ) वर्ग के बच्चे जो शब्द बोलेंगे, या अभिनय करेंगे उसका विपरीत (आ) वर्ग के बच्चों को करना है। बोले गए शब्द या किया गया अभिनय के बारे में आप श्यामपट्ट पर लिखते जाइए। आप बच्चों से कहिए कि जो वर्ग ज्यादा सही शब्द बोलेंगे या अभिनय करेंगे उन्हें ज्यादा अंक मिलेंगे और वे जीत जाएँगे। ऐसे कहने से बच्चे प्रोत्साहित होंगे।

उदाहरण :

| अ वर्ग | | आ वर्ग |
|-----------|---|--------|
| खड़े होना | X | बैठना |
| रोना | X | हँसना |
| रात | X | दिन |
| ज्यादा | X | कम |

आप अंत में खेल खत्म हो जाने के बाद सारे शब्दों को पढ़कर कहिए कि इन शब्दों को विपरीत शब्द कहते हैं।

जो शब्द अर्थ से एक-दूसरे के विपरीत हो, उन्हें विपरीत शब्द कहते हैं।

उदाहरण : ऊपर X नीचे
अंदर X बाहर
सफेद X काला

अभ्यास के लिए आप कुछ शब्द श्यामपट्ट पर लिखिए और एक-एक बच्चे से उसका विपरीत शब्द श्यामपट्ट पर लिखने के लिए कहिए। विपरीत शब्दों को और विस्तार से पढ़ाने के लिए कार्य-पुस्तिका का उपयोग कीजिए।

समुच्चयबोधक

समुच्चयबोधक को रोचक ढंग से पढ़ाने के लिए आप निम्नलिखित गतिविधि को बच्चों के साथ कीजिए।

आप कक्षा में दो रस्सी लेकर जाइए। अब एक बच्चे को बुलाकर उन रस्सियों को जोड़ने के लिए कहिए। पूछिए कि इसमें गाँठ क्यों हैं ? बच्चे आपसे कह सकते हैं कि दो रस्सियों को जोड़ते समय यह गाँठ पड़ गया। अब आप बताइए कि इसी प्रकार दो वाक्यों को जोड़कर अगर एक वाक्य बनाना है तब कुछ शब्दों का प्रयोग होता है यह शब्द गाँठ की तरह काम करते हैं और इन्हें समुच्चयबोधक शब्द कहते हैं।

उदाहरण : मुझे क्रिकेट पसंद है।
मुझे फुटबाल पसंद है।

ऊपर दिये गये वाक्यों को अगर एक वाक्य में लिखना है, तब इन्हें ऐसा लिखा जा सकता है -

मुझे क्रिकेट और फुटबाल पसंद है।

* मैं कल पाठशाला नहीं आई थी। मेरी तबियत खराब थी।

मैं कल पाठशाला नहीं आई थी क्योंकि मेरी तबियत खराब थी।

ऊपर दिये गये वाक्यों में रेखांकित शब्द समुच्चयबोधक शब्द कहलाते हैं।

जो शब्द दो शब्दों, वा वाक्यों को जोड़ते हैं या मिलाते हैं वे समुच्चयबोधक शब्द कहलाते हैं।

उदाहरण :

और, परंतु, लेकिन।

अभ्यास के लिए आप बच्चों से कुछ वाक्य लिखाइए और समुच्चयबोधक शब्द का प्रयोग करते हुए नए वाक्य लिखने के लिए कहिए।

विस्मयादिबोधक:

विस्मयादिबोधक को आसानी से पढ़ाया जा सकता है क्योंकि शब्द भाव निहित रहते हैं। जिन बच्चों को पढ़ने, लिखने में समस्या होती है, उन्हें सीमित भाव प्रकट करने की क्षमता होती है। इसीलिए आपको इन बच्चों पर ज्यादा ध्यान देना चाहिए। इस पुस्तिका में दिए गए कार्यपुस्तिका बच्चों के लिए सहायक हो सकते हैं।

जो शब्द विस्मय, हर्ष, शोक, धृणा आदि मन के तीव्र भावों को प्रकट करते हैं वे विस्मयादिबोधक अर्थ कहलाते हैं।

उदाहरण :

उफ!, ओह!

व्याकरण के नियम से विस्मयादिबोधक शब्दों का वाक्य के दूसरे शब्दों से संबंधित नहीं रहते हैं।

बाद रखें -

विस्मयविबोधक शब्द के बाद उदाहरण सूचक चिह्न (!) रहता है।

काल:

काल के बारे में रोचक ढंग से पढ़ाने के लिए निम्नलिखित गतिविधियों को बच्चों के साथ कीजिए।

आप तीन बच्चों को कक्षा के सामने आकर गाना गाने के लिए बुलाइए। जूही को गाना गाकर वापस कुर्सी पर बैठने को कहिए। राहुल को गाना गाते रहने के लिए कहिए। राहुल गाना गाने के बाद कुसुमा को गाना है।

अब आप बच्चों से पूछिए कि जूही ने क्या किया था ? बच्चे कहते हैं कि

- जूही गाना गाई ।
- राहुल क्या कर रहा है ?
- राहुल गाना गा रहा है।
- कुसुमा क्या करेगी?
- कुसुमा गाना गाएगी।

आप इन वाक्यों को श्यामपट्ट पर लिखिए और बच्चों से कहिए कि रेखांकित किए गए शब्दों को काल कहते हैं क्योंकि वे क्रिया के होने का समय बताते हैं।

काल: क्रिया के होने अथवा करने / किये जाने के समय को काल कहते हैं। काल में तीन भेद हैं - भूतकाल, वर्तमानकाल और भविष्यत् काल।

उदाहरण :

| | |
|--|--------------|
| नौ बजने से पहले राहुल पाठशाला पहुँच चुका था। | भूतकाल |
| प्रिया साइकिल चला रही है। | वर्तमान काल |
| दो दिन के बाद मैं गाँव गाऊँगी। | भविष्यत् काल |

काल के बारे में बच्चों को अभ्यास कराने के लिए कार्य-पुस्तिका का उपयोग कीजिए।

विराम चिह्न :

विराम चिह्न का ज्ञान रखना बहुत ज़रूरी है क्योंकि पढ़ते समय और लिखते समय बच्चों को यह ध्यान रखना चाहिए कि इनका सही उपयोग कैसे किया जाता है। अभ्यास के लिए आप बच्चों को वाक्य, गद्यांश पढ़ने और लिखने के लिए प्रोत्साहित कीजिए और कार्य-पुस्तिका का उपयोग कीजिए।

समझने की कला

बच्चों में समझने की शक्ति बढ़ाने के लिए परिचित वस्तुओं से संबंधित बातें बतानी चाहिए। प्रतिदिन के अनुभवों से, पढ़े हुए कविताओं से या कहानी से शुरुआत करनी चाहिए। यह बच्चे की रुचि को देर तक बनाए रखने में सहायक होती है। इसी प्रकार के क्रियाकलापों से बच्चों के लिए पढ़ना और लिखना आसान और आनन्ददायक हो जाता है। यह, बच्चों में शब्दों का ज्ञान बढ़ाने में प्रेरित करता है।

गद्य लेखन :

गद्य लेखन के लिए सोचने की क्षमता, शब्द-कोश और सृजन करने की क्षमता होना चाहिए। यह अच्छा होगा कि गद्य लेखन के पहले बच्चे वाक्य की रचना करना सीख जाएँ। बच्चों को ऐसे चित्र दिखाइए जिसमें उन्हें दिलचस्पी हो और चित्र पर आधारित कुछ वाक्य लिखने को कहिए।

सार लेखन :

सार लेखन किसी भी गद्यांश को सरल रूप से लिखने और महत्वपूर्ण विचारों को पहचानने की कला है। जिन बच्चों को पढ़ने लिखने की समस्या होती है, वे कुछ महत्वपूर्ण बातों को क्रमानुसार लिखने में भूल जाते हैं। इन बच्चों को छोटे-छोटे गद्यांश पढ़कर मुख्य विचारों को लिखने का अभ्यास कराना चाहिए।

सार लेखन के समय निम्नलिखित बातों का ध्यान रखना चाहिए।

- गद्यांश के शब्दों की गणना करनी चाहिए।
- गद्यांश को एक से अधिक बार पढ़ना चाहिए।
- सभी महत्वपूर्ण बातों का प्रारूप (draft) लिखना चाहिए।
- पहले वाले गद्यांश और प्रारूप गद्यांश की तुलना करनी चाहिए। यह देखना है कि कोई महत्वपूर्ण बात छूट नहीं गई हो।
- गद्यांश को उपयुक्त शीर्षक देना चाहिए।
- सार गद्यांश पहले वाले गद्यांश से एक तिहाई होनी चाहिए।

उदाहरण :

विज्ञान के आविष्कारों का प्रभाव अब हमारी दिनचर्या पर पूरी तरह से पड़ने लगा है। रेडियो और दूरदर्शन से लेकर कम्प्यूटर तक हमारे दैनिक जीवन में काम आते हैं। दूरदर्शन का अर्थ है - दूर की घटनाओं का दर्शन। अब उपग्रह की सहायता से हम सचमुच दुनिया के दूसरे ओर पर घट रही घटनाओं या अंतरिक्ष में हो रहे प्रयोगों को देख सकते हैं। हिमालय की बर्फीली चोटियाँ, रेत से भरा रेगिस्तान, विश्व के किसी एक कोने में हो रहा फुटबैल मैच, अपने देश का गणतंत्र दिवस समारोह या स्वतंत्र दिवस समारोह, ये सब बटन दबाते ही आपके सामने आने लगते हैं। यही नहीं, ज्ञान-विज्ञान की हर नई खोज खेती-बाड़ी, किसानों के लिए कार्यक्रम दूरदर्शन प्रस्तुत करता है।

कुल शब्द : 117

प्रारूप:

दूरदर्शन :

विज्ञान के आविष्कार रेडियो, दूरदर्शन और कम्प्यूटर का हमारे दिनचर्या पर प्रभाव पड़ने लगा। दूरदर्शन दूर की घटनाओं का दर्शन उपग्रह की सहायता से कराता है। वह दुनिया के एक ओर से दूसरे ओर तक होने वाली घटनाएँ, जगह, ज्ञान-विज्ञान की नई खोज, किसानों के लिए कार्यक्रम आदि प्रस्तुत करता है।

दूरदर्शन :

विज्ञान के आविष्कार रेडियो, दूरदर्शन और कम्प्यूटर का हमारे दिनचर्या पर प्रभाव पड़ने लगा। दूरदर्शन उपग्रह की सहायता से दूर की घटनाएँ दर्शन करता है। वह जगह, ज्ञान-विज्ञान की नई खोज, किसानों के लिए कार्यक्रम आदि को प्रस्तुत करता है।

कुल शब्द : 117

प्रारूप के कुल शब्द : 52

सार लेखन के कुल शब्द : 40

शीर्षक : दूरदर्शन

मुहावरें:

किसी भी बात को रोचक ढंग से कहने के लिए मुहावरों का प्रयोग करते हैं। यह बहुत ही पारिहासिक होता है। क्योंकि इसका अर्थ यथार्थ में कुछ भी नहीं होता है, इसलिए जिन बच्चों को पढ़ने लिखने में समस्या होती है, उन्हें बार-बार अभ्यास के द्वारा इनका प्रयोग सिखाना चाहिए।

उदाहरण : नौ दो ग्यारह होना, आँखों का तारा, ऊँठ के मुँह में जीरा।

DEFICIT LEVEL INSTRUCTION - HINDI

Hindi being the National Language, students undergoing education in Indian schools will have to learn the language at some stage. All state boards of education in Non-Hindi speaking states include Hindi as a third language while in central boards and Hindi speaking states Hindi is second language if the medium of instruction is English. Therefore, an average Indian child has to learn to read and write English, Hindi and mother tongue or one other language before the age of 10.

Children who have learning problems tend to face difficulty in learning three languages. Some of the common difficulties noted are as follows:

1. Mixes Hindi with other languages while writing - बसकेट, रामु.
2. Confuses letter symbols when the same symbol refers to different sounds - S in English, ढ - "da" in Hindi, - ka in Telugu or "1" is "one" in Math, "I" in English and full stop (.) in Hindi.
3. Tries to form sentences in English like Hindi or Hindi like English. English has the sentence structure:

a) *Subject* *Verb* *Object*
Nitin plays Cricket
Hindi has

b) *Subject* *Object* *Verb*
नितिन क्रिकेट खेलता है ।

When both the languages are taught the child may tend to do either of the following:

- a) Nitin cricket plays
(converting Hindi as it is to English)
 - b) नितिन खेलता क्रिकेट है ।
(converting English to hindi as it is)
4. English has no specific respect forms as in Hindi.

तू, तुम, आप are all expressed as "you" in English. Hence the child may use तुम for आप also in Hindi or make wrong sentence such as

आप खा रहे हो,
instead of
आप खा रहे हैं ।

As English sentences have a single and simple structure,

"you are eating"

the student may tend to apply the rule here.

5. English has neutral gender in addition to masculine and feminine.

"he, she, it"

Hindi has only masculine and feminine genders. Non-living things also tend to get a gender in Hindi where "it" will be used in English.

सब्जी is feminine, दूध is masculine in Hindi.

Hence we tend to say,

सब्जी अच्छी है,
दूध अच्छा है ।

This leads to considerable errors in forming Hindi sentences by the students.

6. Hindi has separate symbols for consonants like a)ka, b) kha, or a) ta, b) tha, a) pa, b) pha, a)da, b) dha, a)cha, b) chha a) ja, b) jha.

English does not have sounds noted under (b) in the regular usage. Hence children tend to apply the rule of English and substitute क for ख or च for छ, ज for झ, and so on.

7. In Hindi vowels get converted to matras (मात्राएँ) म+आ = मा, मानस (म+आ+न+स)। Vowel symbols as such are used in the beginning of some word (आज) or very rarely in the middle or at the end (दुआ)। In English, vowel letters are used as they are to form sound. A confusion arising out of this can be,

मानस getting written as "मआनस"

8. When we say numbers in English we say tens first and units next - as in 35 - Thirty-five. In Hindi, we say units first and tens next, 35- पैंतीस, 45-पैंतालीस। This can lead to difficulty in math - writing 35 as 53 (applying the rule as in Hindi).

These are few indicators of one language interfering in the learning of another. The teacher has to be sensitive to such facts and carefully introduce the concept to the child simultaneously highlighting the difference between English and Hindi. This will lead to error prevention, rather than error correction.

In the earlier chapter we have seen the NIMH screening checklist in Hindi indicating problem areas. Some of the most frequently

noticed difficulties in children were compiled using the checklist; suggestion for remediation are given in the following pages.

- ♦ Some difficulties found common in Hindi and English
 - Reversal, transposing letters
 - Omission / addition of letters
 - Shabby handwriting
 - Ignoring punctuation
 - Substitution due to difficulty in visual discrimination (य-प, ब-व, भ-म, ह-न, अ-उ, ब-द)
 - Skipping words while reading
 - Saying loudly before blending
- ♦ Some difficulties found only in English
 - Mispronunciation
 - Use of inappropriate vowel
 - Difficulty in blending letters to form words
 - Prefers to be translated to Hindi or mother tongue for comprehension.
- ♦ Some difficulties found only in Hindi
 - Omission of Matras
 - Inappropriate use of matras
 - Substitution of letters due to difficulty in auditory discrimination (क-ख, प-फ, ज-झ)
 - Inappropriate gender in sentences
 - Inappropriate respect forms (तु, तुम, आप)

Certain tips for overcoming these difficulties are given here:

Difficulty noticed:

? Difficulty in reading similar words such as राम - मार, रहा - हरा।

✓ Try this:

One way to overcome this difficulty is to sensitize the child to the first sound in the word by covering the rest of the letters. For instance cover other letters with the thumb and only expose रा in राम. When he says रा, remove the thumb and he will read with ease. Train him to cover with his own right thumb the letters in a word other than the first one, read the letter, remove the thumb and read the rest. As days pass by he will gain competency. Immediately follow with writing of the word to reinforce.

Difficulty noticed:

? Confuses similar looking letters भ-म, थ-य, घ-ध, ब-द, श-स।

✓ Try this:

The root cause for this difficulty is visual perceptual difficulty in the student. This child may tend to make similar error in English also such as h-n, u-n, b-d, a-u, l-t. The proven way to help overcome this problem is providing the clues with exercises in visual discrimination.

An example can be:

Circle the letter that matches the first letter in each row:

| | | | | | |
|---|---|---|----|----|---|
| अ | उ | अ | ओ | ड | औ |
| इ | इ | ई | ड़ | द | व |
| म | म | भ | प | य | न |
| श | स | श | र | झ | ह |
| व | ब | प | य | त | व |
| च | ज | छ | ट | ढ़ | च |
| घ | छ | म | घ | ह | घ |

Difficulty noticed

? Where reading is involved, dislikes / avoids the activity .

✓ Try this :

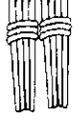
Most of these children with reading difficulty are aware that they are not good at the task and that they will make mistakes. Therefore they tend to avoid the activity. To overcome this, initially give such reading material that is of their interest. For instance, if he likes cricket, make a 4 to 5 line worksheet on cricket.

क्रिकेट :

- क्रिकेट एक रोमांचक खेल है।

- इसमें  और  होते हैं।

- बल्लेबाज़  और  पहनते हैं।

- विकेटकीपर  और  पहनता है।

- गेंदबाज़ बहुत प्रकार के होते हैं।

आपको कौन-सा क्रिकेटर सबसे ज्यादा पसंद है ?

It is alright to have English words in Hindi as seen here, initially as long as it arouses student's interest. Gradually, reduce pictures and increase the complexity of the passage. Remember to give him the basic rules like "Hindi is a phonetic language with vowels blended in matras. This makes it easy to read if one attends to the letter and word forms carefully" and so on.

Difficulty faced:

? Struggles to express thoughts, gropes for words or keeps quiet.

✓ Try this:

Most of the children with learning difficulties have average or above average intelligence and are therefore many a time aware of their limitations. For the fear of getting ridiculed, they keep quiet. Encourage them to speak and appreciate even the slightest of attempts in the beginning. Create situations as if you are facing a problem and you need a solution. Encourage the child to give ideas to solve problem. Simple things like "my scooter is in the workshop. How will I come to school tomorrow?", can encourage child to give you responses. Thank him for the help.

Gradually increase the difficulty level - show a picture and ask him to say five features about the picture that he likes and five features that he does not like - all in Hindi. As he speaks, those words that you think are important to be discussed and learnt, write them down and discuss. Make him write the words / sentences as the case may be.

Difficulty faced:

? Mixes up matras.

✓ Try this:

In English a vowel and consonant together make a sound. In Hindi and most of the Indian languages, to a consonant symbols are added to matra to give a sound. For instance,

| | |
|---------|----------|
| ma - म | maa - मा |
| mi - मि | mee - मी |
| mu - मु | moo - मू |
| mo - मो | |

However, in English the sound of the vowel changes with consonant combination. For instance,

| | |
|---|--------------|
| a | as in cat |
| a | as in hall |
| a | as in hate |
| a | as in assist |

Fortunately, in Hindi the vowel indicators in the form of matras always are responsible for the same sound with only consonant changing.

When the child is given the comparison he starts to feel "Hindi is easy". Now tell him to listen carefully for the sound when produced, to determine whether it is a long vowel or a short vowel and then add the matra.

| | |
|--------|-------------|
| मीरा | long vowel |
| पूजा | long vowel |
| रवि | short vowel |
| कुत्ता | short vowel |

Expose the child to a number of such auditory discrimination exercises and have him write immediately.

Difficulty noticed:

? Instead of writing complete sentences, uses small sentences or words.

✓ Try this:

This problem is found with children who are auditory learners, who prefer to convey main message briefly. They are also aware, the longer they write, the more the mistakes they may commit. Logically, in their thinking, it is enough to answer the question. Therefore, they do not focus on making complete, long sentences.

Provide an attractive picture from a magazine or a picture of a situation like market, or play ground. It can be a picture of the student's choice also. Now, ask him to say 5-10 sentences about the picture - discuss - then let him write. Tell him that he would use correct conjunction, adjectives and punctuation to make a nice write up.

Reward by pinning up his write up on the class bulletin board with your positive comments. This will encourage him to improve his writing skills.

Suppose, you have given him a picture of a market place, he may tend to write

"ये बाज़ार है। यहाँ दुकाने हैं। लोग सामान खरीदते हैं।

You encourage him to write more descriptively.

"देखो ! ये कितना बड़ा बाजार है। इस बाजार का नाम सिटी मार्केट है और यहाँ सब कुछ मिलता है। यहाँ कपड़े, तेल और किराने की दुकाने हैं। यहाँ हर तरह की ताज़ा सब्जियाँ मिलती हैं। मैं हर शनिवार अपनी माँ के साथ सिटी मार्केट आता हूँ।"

Initially prompt him if needed, so that he uses appropriate adjectives for description and suitable conjunction to make long sentences. Once he has learnt to make long sentences, help him to apply the skill in his class work

also. Remember, adjectives, analogies and conjunctions help in making long sentences.

Difficulty noticed:

? Uses long vowel matras for short vowels or uses wrong matras.

✓ Try this:

One way to correct this is to read the word to him, the way he has written. Example: If पहचान is written as पेहचन, read it as पेहचन। Let him listen... He will certainly be amused as it "does not sound right" . Now tell him to see the word carefully and correct. A number of such exercises will sensitize him to his error pattern. Tell him to read it by himself and see if it sounds "right" before he gives it for correction. This will lead to self correction, thus avoiding future errors.

Difficulty noticed :

? Says the words correctly, but writes incorrectly.

✓ Try this:

Many a time when the thinking speed and writing speed do not match, writing errors occur.

Suppose he wants to write

प्रिया आम खा रही है

If the thinking is faster than writing, by the time he has written प्रिया his thoughts will be at आम and so on. Thus to catch up, he may omit letters / matras resulting in something like this:

प्रिय अम खा रह है।

This is an error found in English and other languages also. One way to correct is to let the child say the words loudly while writing. This will check the thinking speed thus matching with writing speed. Gradually, let him say softly so as not to disturb the class.



कार्य पुस्तिका

सुनो और जवाब दो ।

कविता : दिवाली



सुनो, सुनो रे,
आई दिवाली
आओ दीप जलाएँ ।
जगमग हम,
धरती को कर,
अँधियारा दूर भगाएँ ।

(शिक्षक बच्चों को कविता समझाकर प्रश्न पूछेंगी ।)

प्रश्न:

- 1) सीखे हुए कविता का नाम क्या है ?
- 2) दिवाली के दिन क्या किया जाता है ?
- 3) दिवाली के दिन धरती कैसा दिखती है ?
- 4) दिवाली के दिन क्या दूर भगाया जाता है ?
- 5) दिवाली के दिन क्या जलाते हैं ?

उद्देश्य : सुनकर समझना



सुनो और जवाब दो ।

गद्यांश:

बारिश जुलाई-अगस्त महीने में होता है । गरमी के मौसम के बाद बारिश का मौसम आता है । बारिश होने से पहले आकाश में काले - काले बादल छा जाते हैं । ठंडी हवा बहती है । बादल से पानी जमीन पर गिरता है । यह पानी बहते हुए नदी या समुद्र में मिल जाता है । बारिश के मौसम में सारे पेड़ हरे हो जाते हैं ।

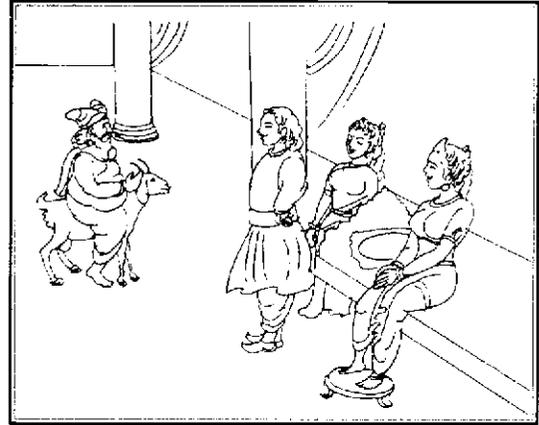
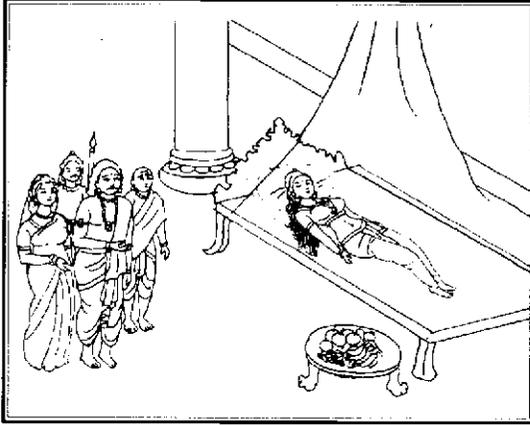
प्रश्न:

- 1) बारिश किस महीने में होती है ?
- 2) बारिश के समय आकाश में क्या आते हैं ?
- 3) ठंडी-ठंडी हवा कब बहती है ?
- 4) पानी कहाँ से बरसता है ?
- 5) बरसात में पेड़ कैसे हो जाते हैं ?



कार्य पुरितका

सुनो और जवाब दो ।



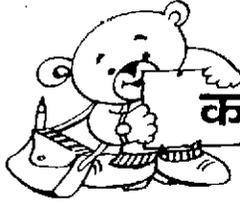
कहानी : राजकुमारी की उदासी

एक राजा था । उनकी एक बेटी बहुत सुंदर थी । वह जिस रास्ते से गुजरती थी, सभी कहते थे- "आह! देखो राजकुमारी जा रही है" । एक बार राजा ने किसी बात पर राजकुमारी को डाँट दिया । राजकुमारी उस दिन से ऐसी गुमसुम हुई कि उसने खाना, पीना, हँसना, बोलना सब छोड़ दी । राजा यह जानकर बहुत दुःखी हुआ । उन्होंने सारे राज्य में सूचना भेजी कि जो भी उनकी बेटी को हँसा देगा, उससे राजकुमारी की शादी हो जाएगी । प्रतिदिन बहुत से लोग आते थे और तरह - तरह के करतब दिखाकर राजकुमारी को हँसाने की कोशिश करते थे । पर राजकुमारी की उदासी दूर नहीं हुई । एक दिन एक आदमी बकरी पर बैठकर राजमहल में आया । उसके वेषभूषा को ही देखकर सभी हँसने लगे । अगर वह अपनी टोपी को उठाया तो उसका पेट गिर जाता था । जब वह पेट उठाता था तो उसकी दाढ़ी गिर जाती थी । यह सब देखकर राजकुमारी बहुत हँसी और राजा ने उन दोनों की शादी करके, उन्हें हँसी - खुशी विदा कर दिया ।

प्रश्न:

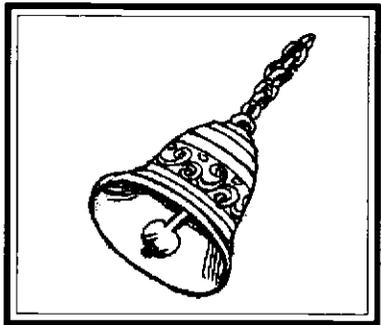
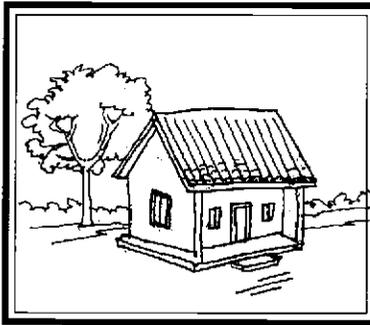
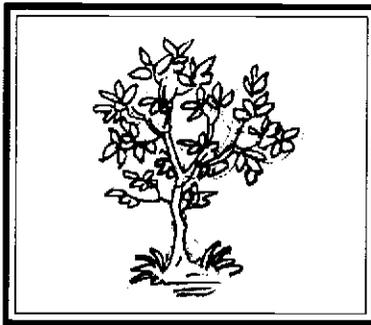
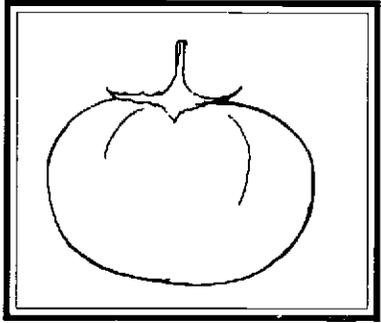
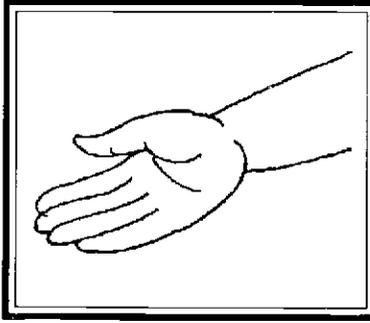
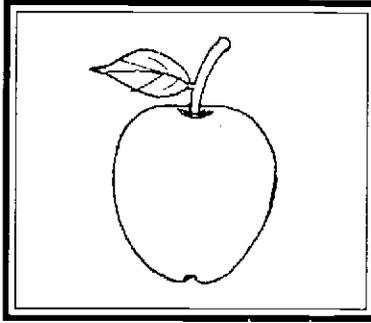
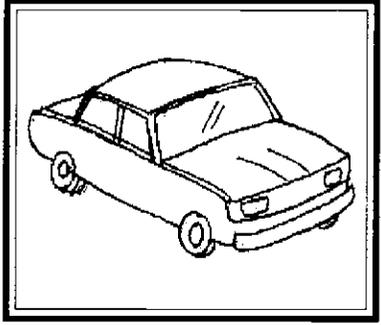
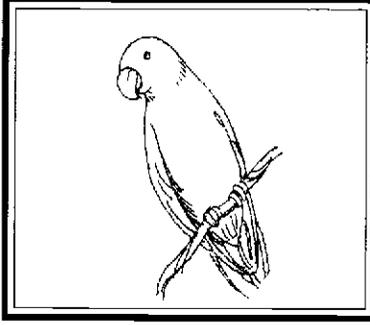
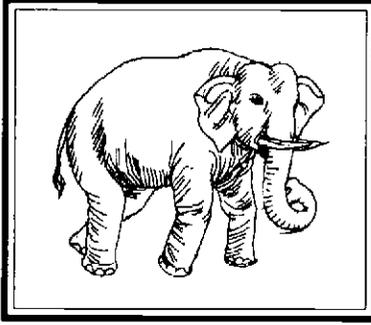
- 1) राजा के बेटी को क्या कहते हैं ?
- 2) राजा और राजकुमारी कहाँ रहते थे ?
- 3) राजकुमारी उदास क्यों हो गई ?
- 4) राजकुमारी क्यों हँसी ?
- 5) राजा ने राजकुमारी की शादी किससे किया ?

उद्देश्य : सुनकर समझना

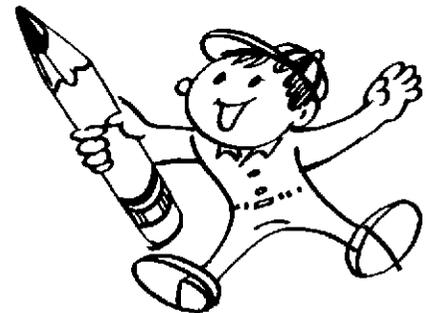


कार्य पुस्तिका

नीचे दिए गए चित्रों के नाम बताइए ।



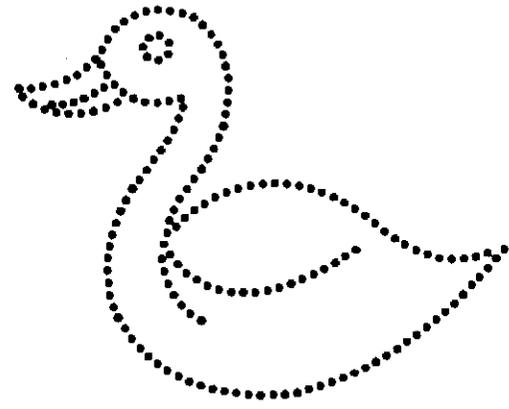
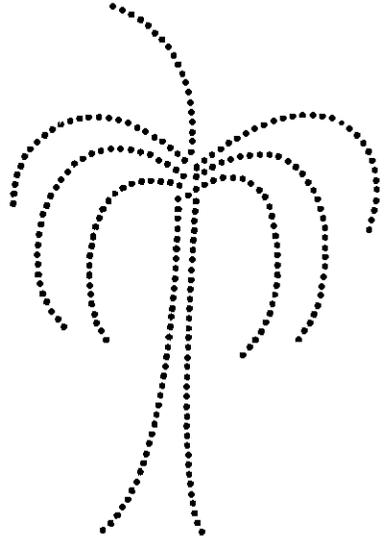
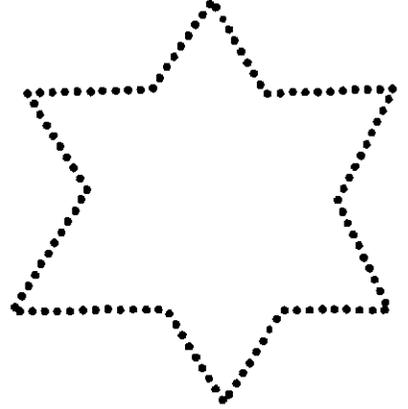
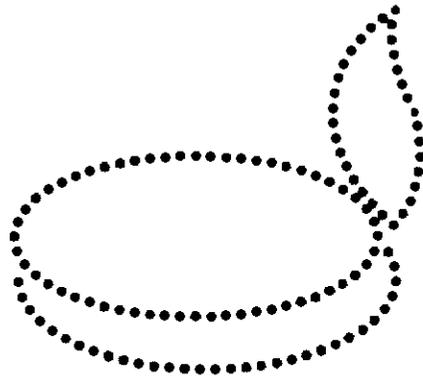
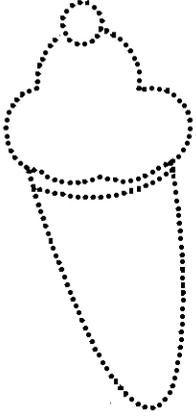
उद्देश्य : पूर्व - पठन (प्री - रीडिंग)





कार्य पुरस्तिका

बिन्दुओं को मिलाकर चित्र पूरा कीजिए।



उद्देश्य : पूर्व-लिखना (प्री-राइटिंग)

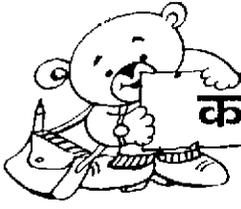


कार्य पुस्तिका

बाएँ तरफ दिए गए अक्षर से दाएँ तरफ दिए गए अक्षर को जोड़िए।



उद्देश्य : दुष्टि विभेदन (विजुवल डिस्क्रिमिनेशन)



कार्य पुरितका

बाएँ तरफ दिए गए अक्षर को पढ़ो ।

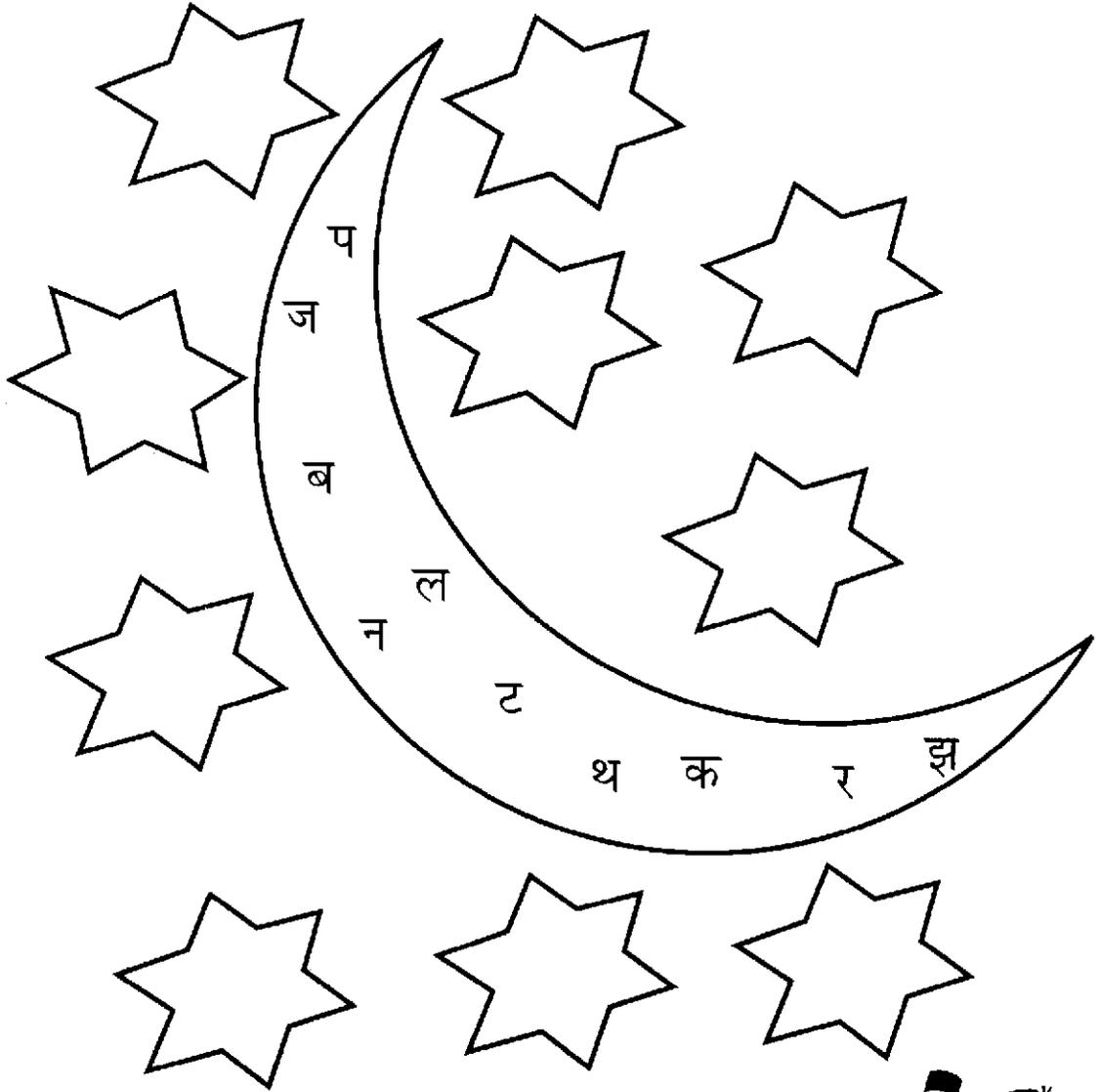
दाएँ तरफ में समान अक्षर पर गोला बनाइए ।





कार्य पुस्तिका

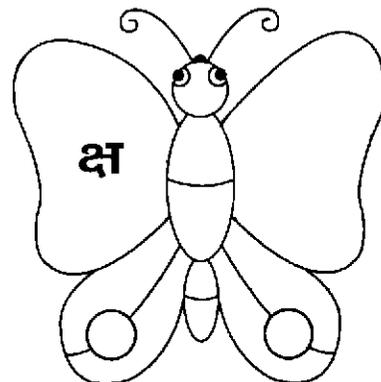
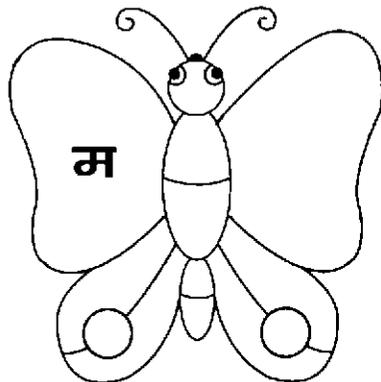
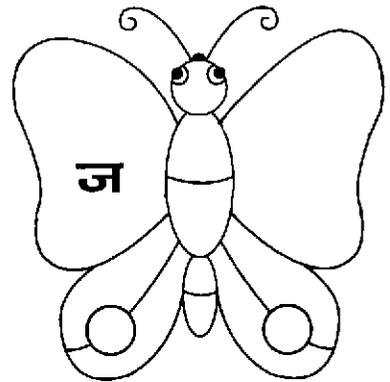
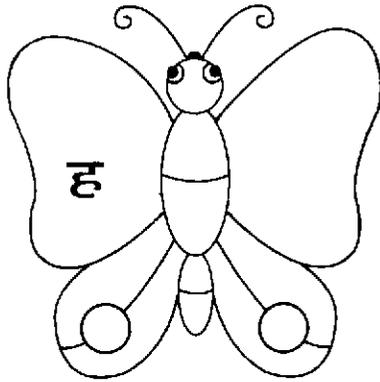
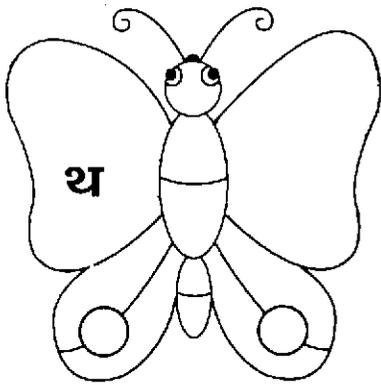
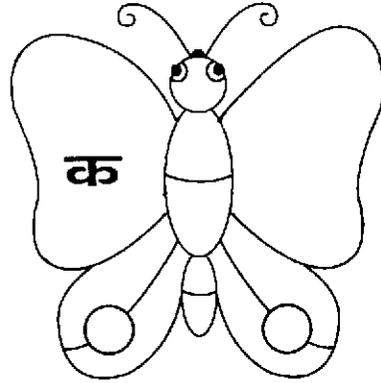
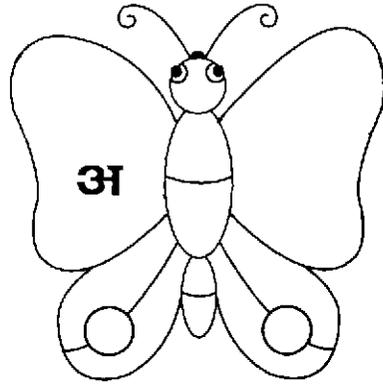
चाँद में बहुत सारे अक्षर हैं । एक-एक अक्षर को एक-एक तारे में लिखिए ।



उद्देश्य : नकल करना (कॉपी करना)



तितली के एक पंख पर लिखे गए अक्षर को दूसरे पंख पर लिखिए।

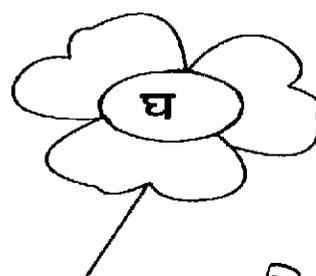
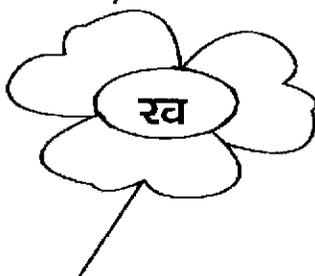
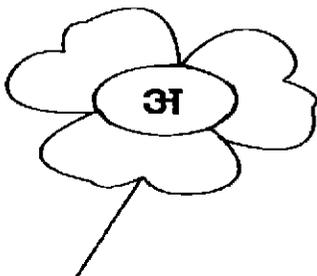
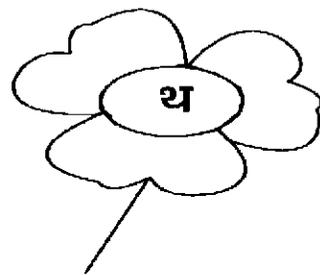
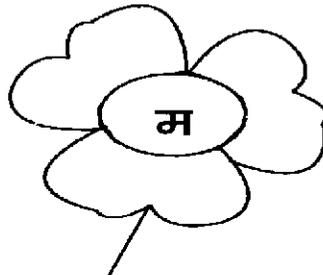
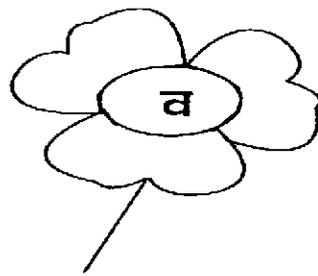
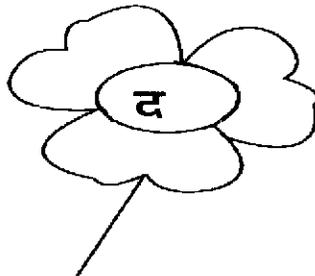
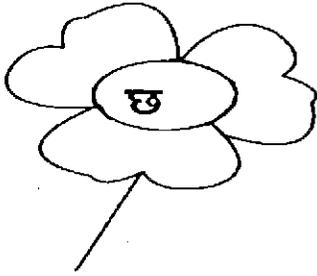
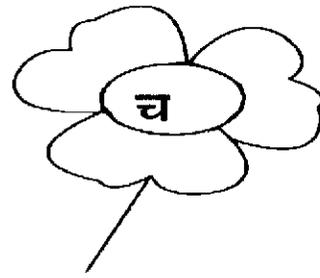
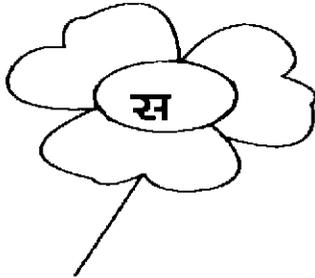
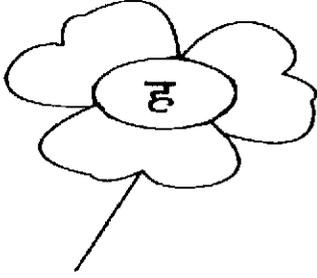


उद्देश्य : कॉपी करना



कार्य पुरितका

चित्र में दिए गए अक्षर को पहचानिए ।

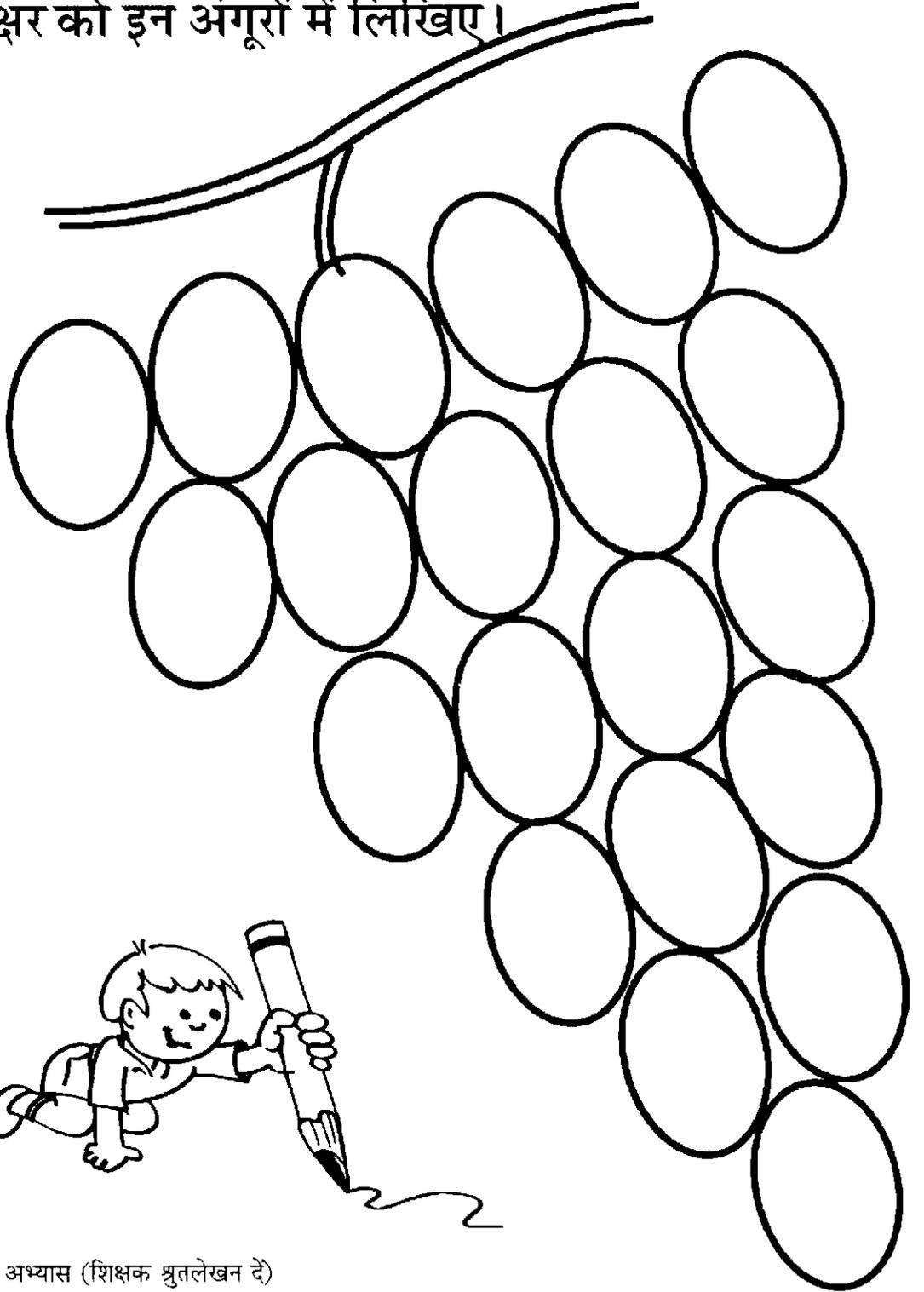


उद्देश्य : पढ़ना



कार्य पुस्तिका

बोले गए अक्षर को इन अंगूरों में लिखिए।



उद्देश्य : श्रुतलेखन का अभ्यास (शिक्षक श्रुतलेखन दें)



कार्य पुरितिका

वर्णमाला को पूरा कीजिए । स्वर

| | | | | | | |
|---|--|---|---|--|---|----|
| अ | | | ई | | ऊ | |
| | | ऐ | | | | अः |

व्यंजन

| | | | | | | | |
|---|---|---|---|---|--|---|--|
| क | | | घ | | | | |
| | छ | | | ज | | | |
| | | ड | | | | | |
| त | | | ध | | | | |
| | फ | | | म | | | |
| य | | | व | | | स | |

संयुक्ताक्षर

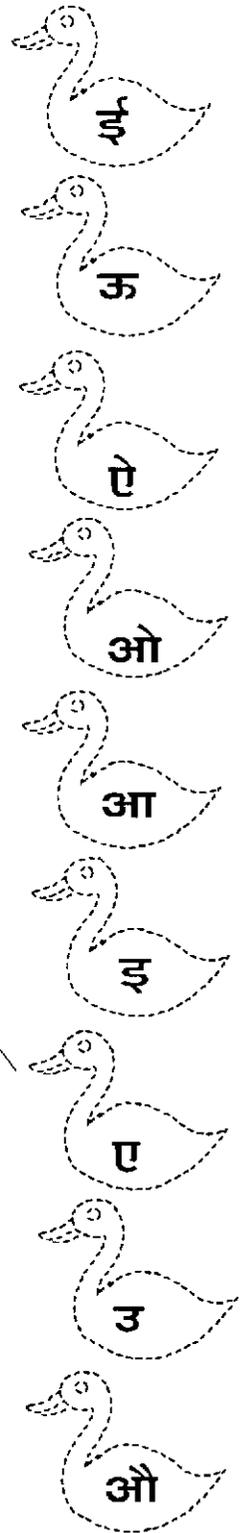
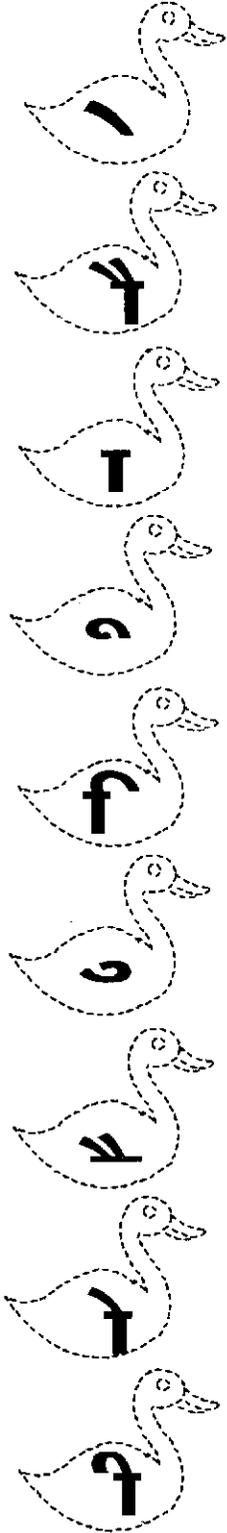
| | | |
|--|-----|--|
| | त्र | |
|--|-----|--|

उद्देश्य : वर्णमाला पढ़ना और लिखना



कार्य पुरितका

मात्रा और स्वर को पहचानकर जोड़े बनाइए।



उद्देश्य : मात्राएँ लिखना



कार्य पुरितिका

बाएँ तरफ दिए गए अक्षर को पढ़िए । समान अक्षर को दाएँ तरफ से चुनकर गोला बनाइए ।

| | | | | |
|----|----|----|----|----|
| मा | फा | मा | भा | धा |
| पे | बे | फे | पे | षे |
| वि | कि | वि | बि | नि |
| है | टै | है | इ | दै |
| तो | तो | लो | नो | को |





कार्य पुरित्तका

नीचे दिए गए व्यंजनों के बारहखड़ी पढ़ते हुए लिखिए।

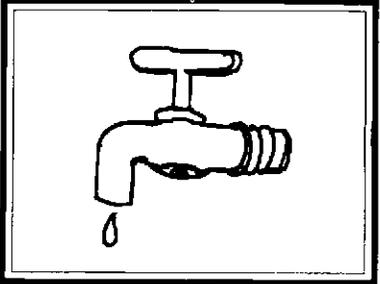
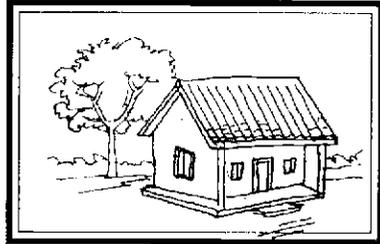
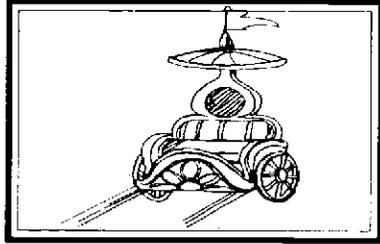
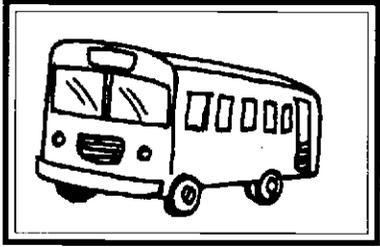
| | |
|---|-------|
| ग | _____ |
| ट | _____ |
| भ | _____ |
| घ | _____ |
| ह | _____ |

उद्देश्य : लिखना



कार्य पुरितका

चित्र को पहचानिए, शब्द को पढ़िए।
चित्र और शब्द के सही जोड़े बनाइए।



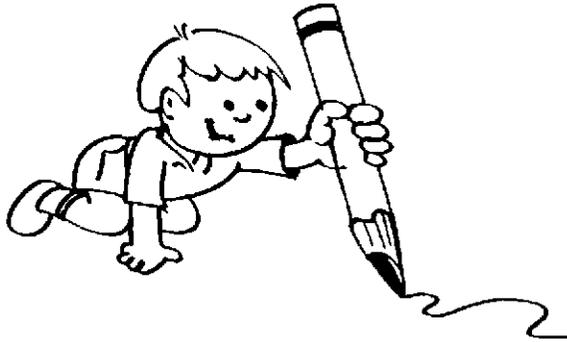
सर

घर

रथ

बस

नल

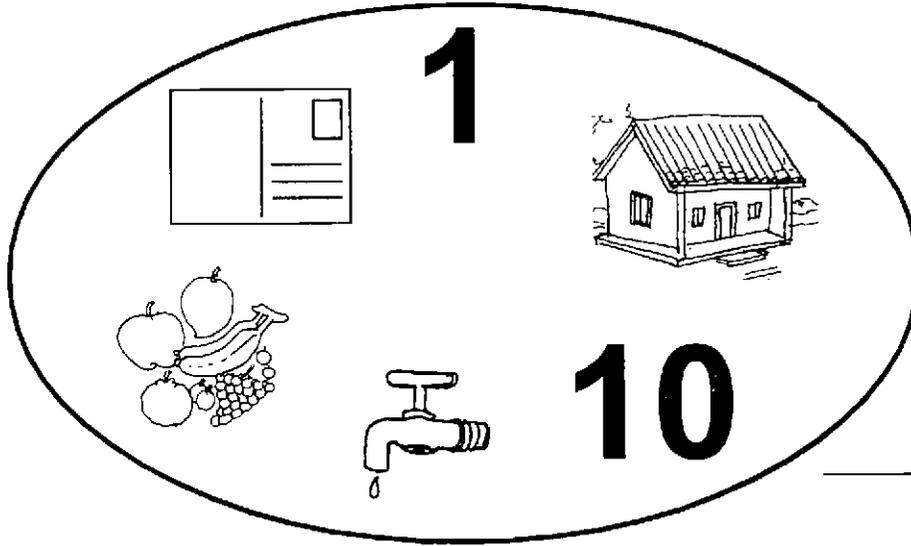


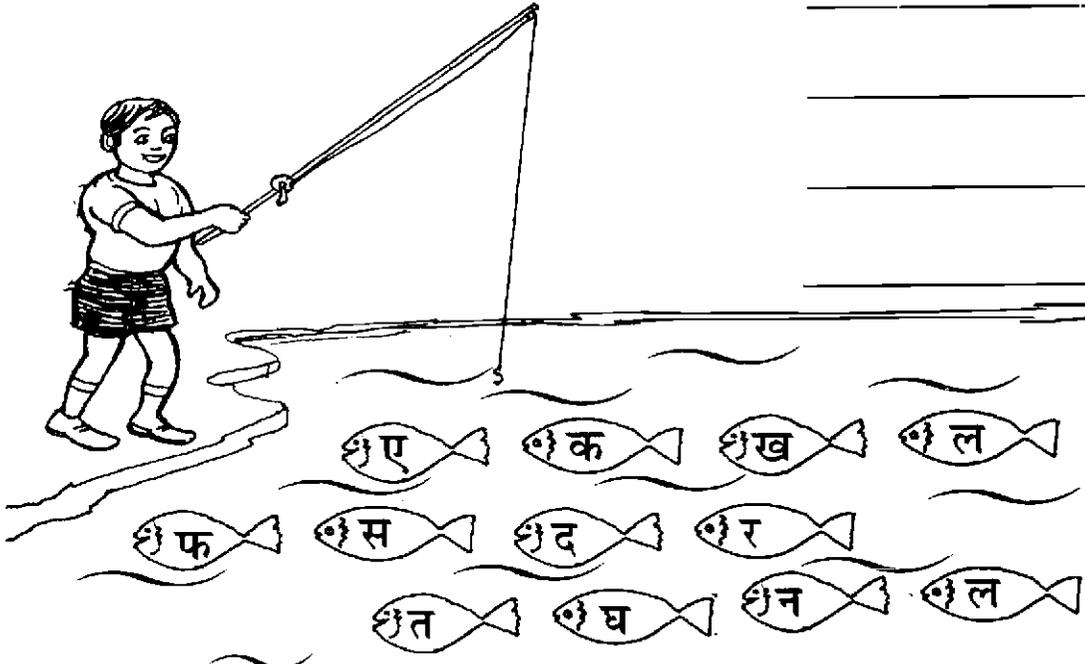
उद्देश्य : शब्द ज्ञान



कार्य पुरित्तका

चित्र के नाम बताइए। छोटे-छोटे मछलियों में दिए गए अक्षरों को जोड़ कर चित्रानुसार शब्द लिखिए।



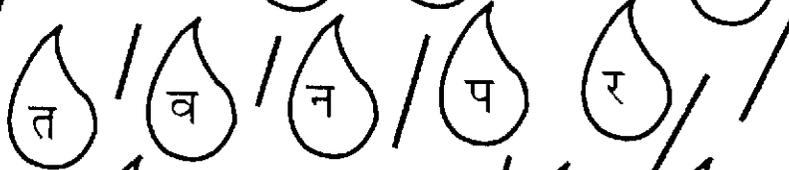
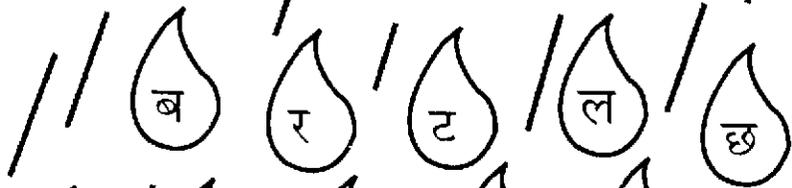
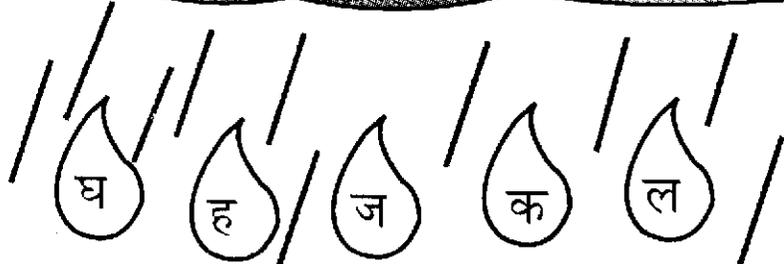
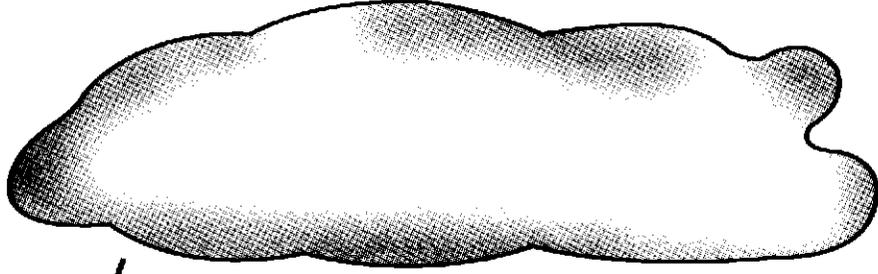


उद्देश्य : पढ़ना और अर्थ समझना



कार्य पुरित्तका

अक्षरों की बारिश हो रही है। अक्षरों से शब्द बनाकर नीचे खाली जगह में लिखिए।

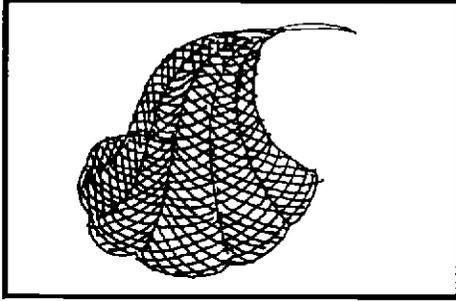


उद्देश्य : पढ़ना

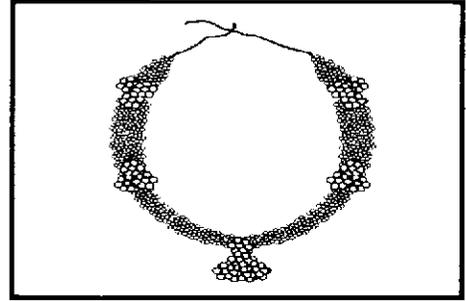


कार्य पुस्तिका

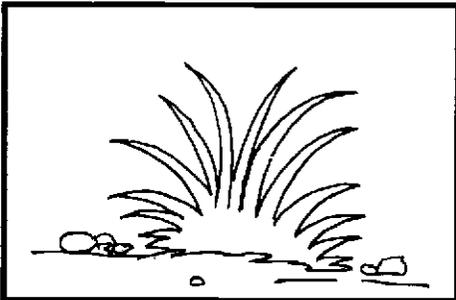
'र' की मात्रा का प्रयोग करते हुए, दिए गए चित्रों को देखकर शब्दों को पूरा कीजिए ।



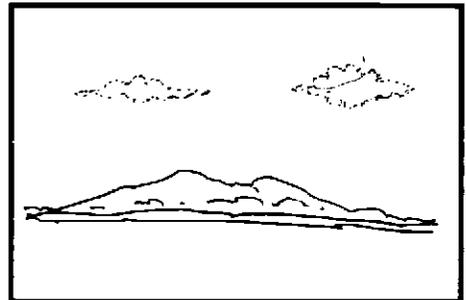
ज_ल



म_ल_



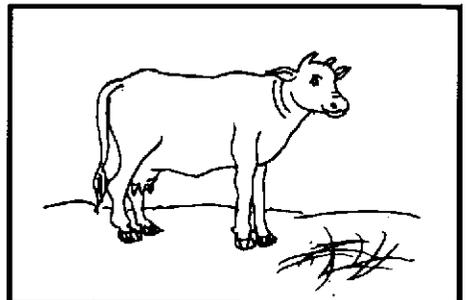
घ_स



अ_क_श



र_ज_



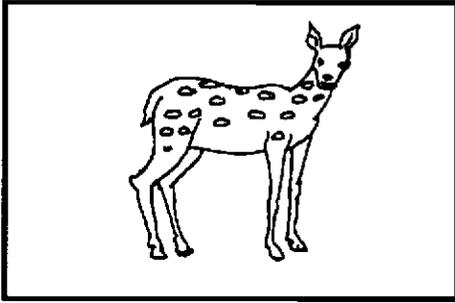
ग_य

उद्देश्य : मात्रा का प्रयोग

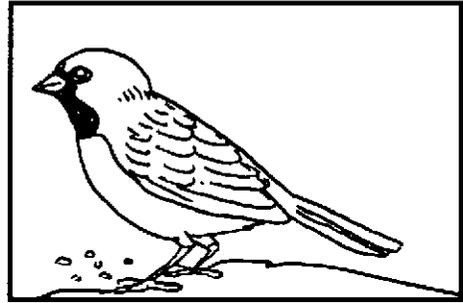


कार्य पुस्तिका

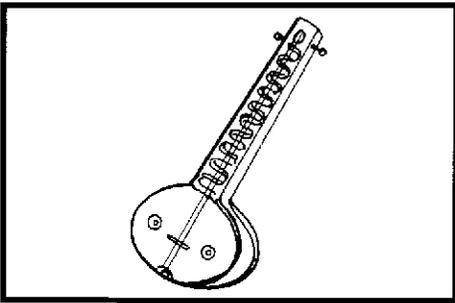
' ि ' की मात्रा का प्रयोग करते हुए, दिए गए चित्रों को देखकर शब्दों को पूरा कीजिए ।



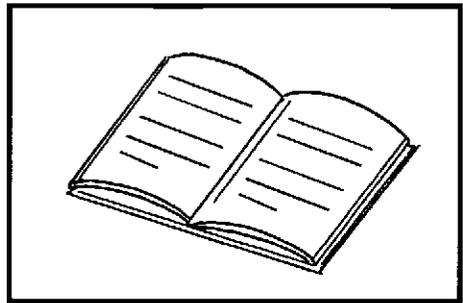
ह_रण



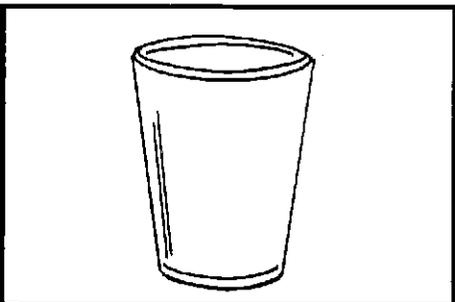
_च_ड़या



_सतार



_कताब



_गलास



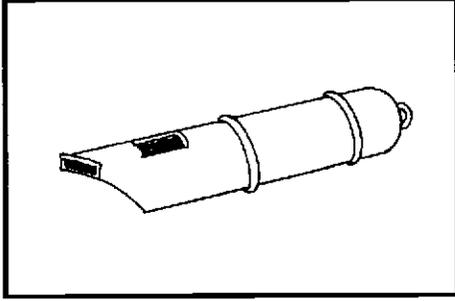
ऋ_ष

उद्देश्य : मात्रा का प्रयोग

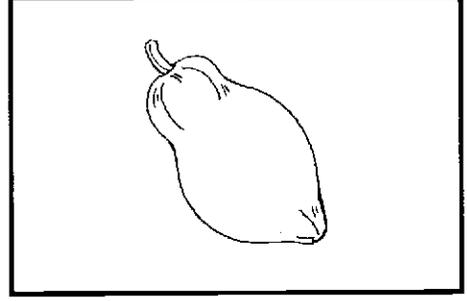


कार्य पुरितिका

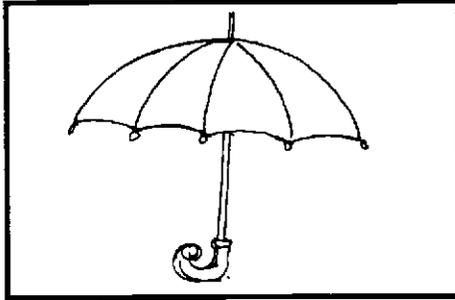
'ी' की मात्रा का प्रयोग करते हुए, दिए गए चित्रों को देखकर शब्दों को पूरा कीजिए ।



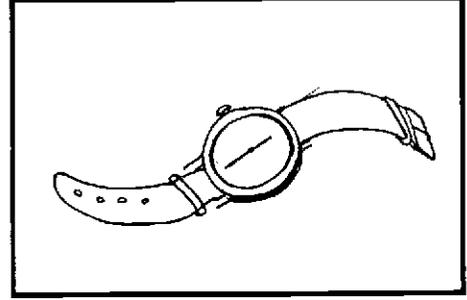
स_ट_



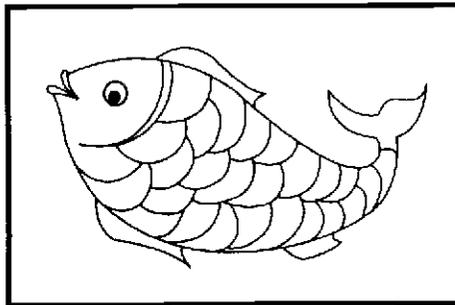
पप_ता



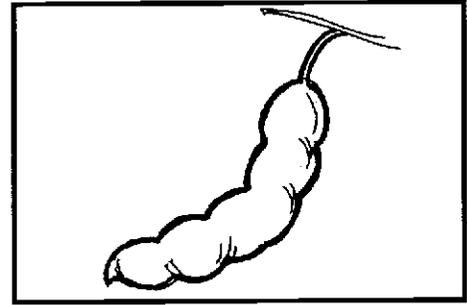
छतर_



घड़_



मछल_

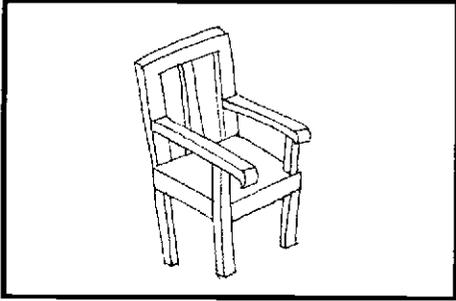


इमल_

उद्देश्य : मात्रा का प्रयोग



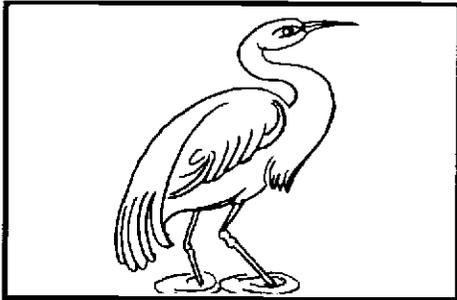
'ु' की मात्रा का प्रयोग करते हुए, दिए गए चित्रों को देखकर शब्दों को पूरा कीजिए ।



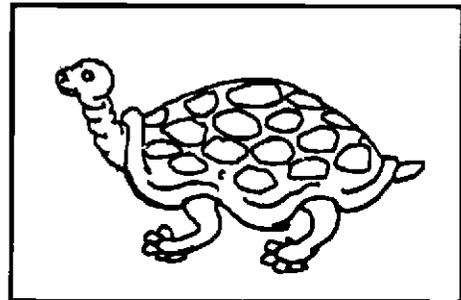
करसी



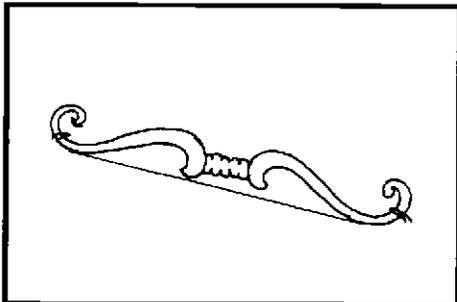
गड़िया



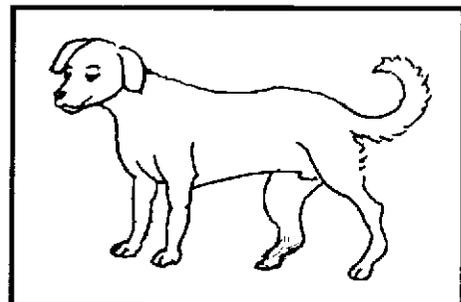
बगला



कछआ



धनष



कत्ता

उद्देश्य : मात्रा का प्रयोग

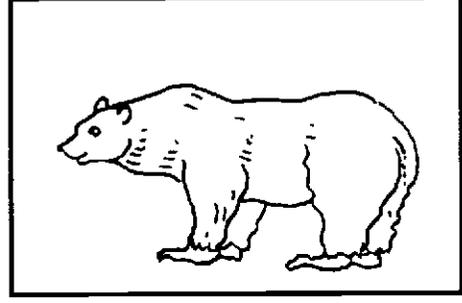


कार्य पुरितका

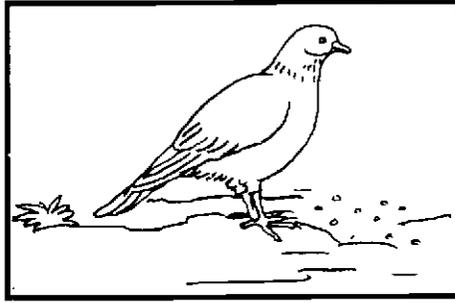
'ू' की मात्रा का प्रयोग करते हुए, दिए गए चित्रों को देखकर शब्दों को पूरा कीजिए ।



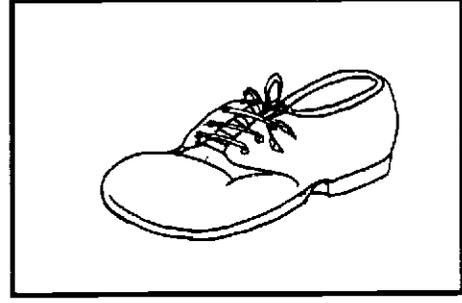
झूला



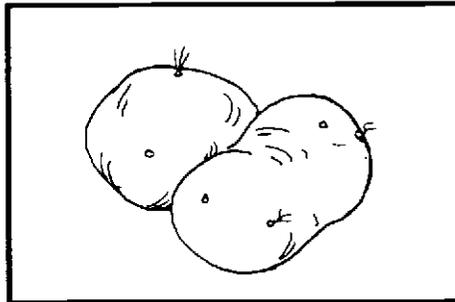
भूल



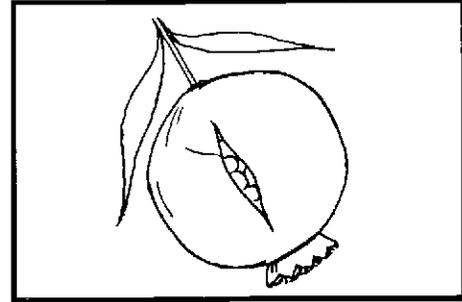
कूबतर



जूता



अूल

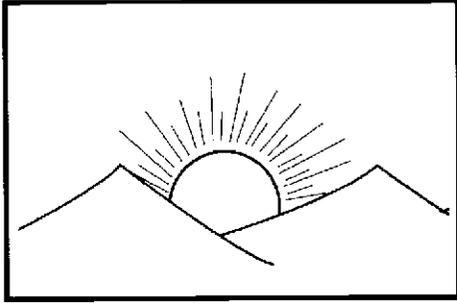


अूमरद

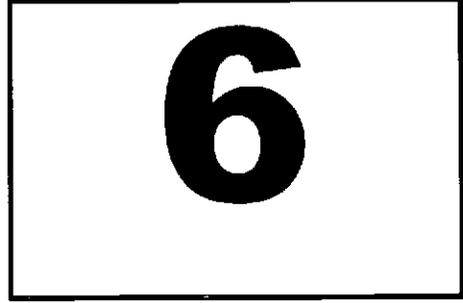
उद्देश्य : मात्रा का प्रयोग



'ः, ु' की मात्रा का प्रयोग करते हुए, दिए गए चित्रों को देखकर शब्दों को पूरा कीजिए ।



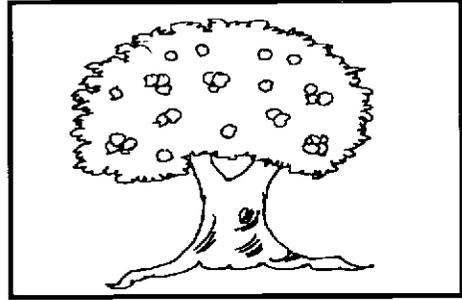
प्रातः—



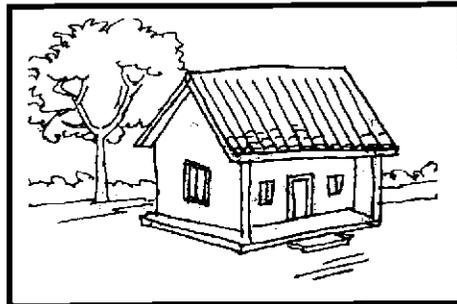
छः—



कृष्णः—



वृक्षः—



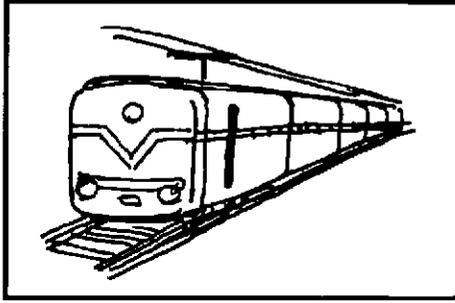
गृहः—

उद्देश्य : मात्रा का प्रयोग

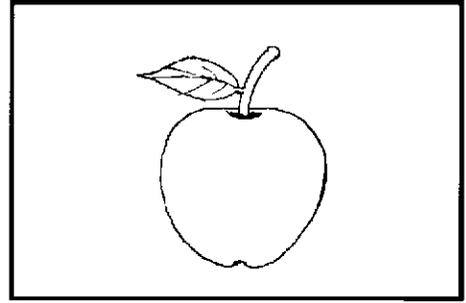


कार्य पुस्तिका

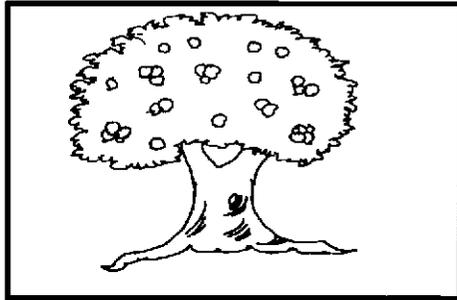
'२' की मात्रा का प्रयोग करते हुए, दिए गए चित्रों को देखकर शब्दों को पूरा कीजिए ।



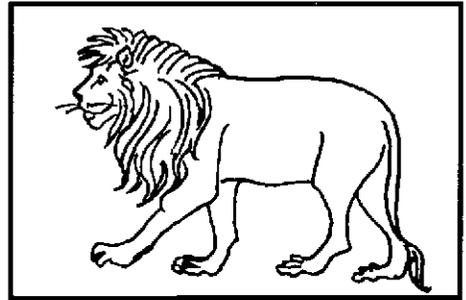
रल



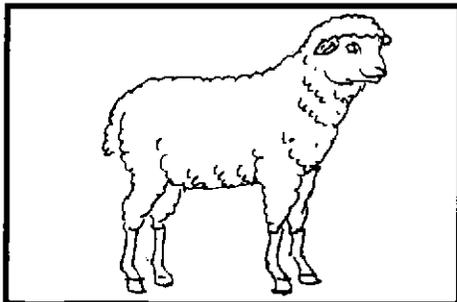
सब



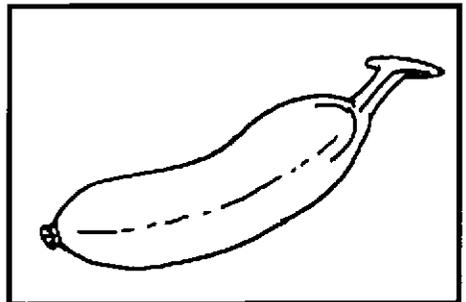
पड़



शर



भड़



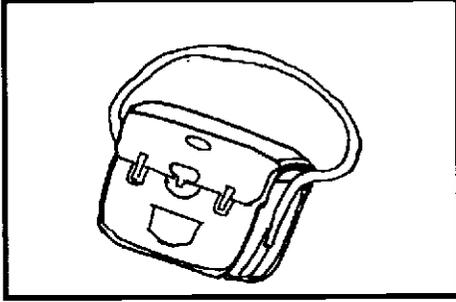
कला

उद्देश्य : मात्रा का प्रयोग



कार्य पुरस्तिका

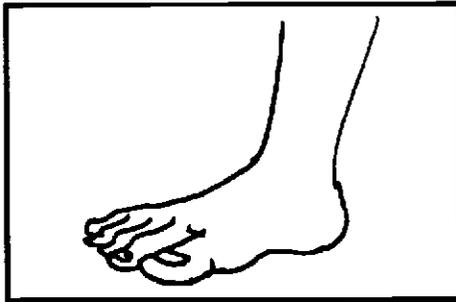
'**प**' की मात्रा का प्रयोग करते हुए, दिए गए चित्रों को देखकर शब्दों को पूरा कीजिए ।



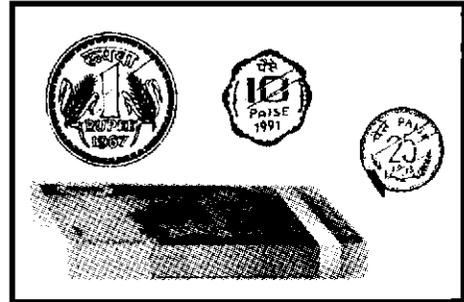
थला



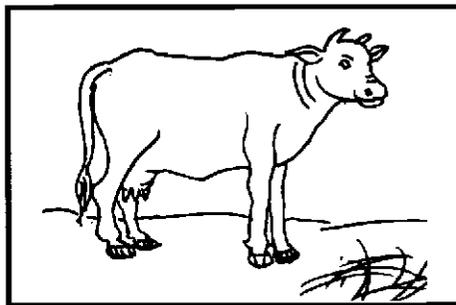
सैनिक



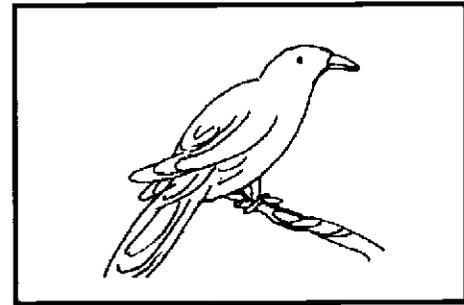
पर



पसा



बल



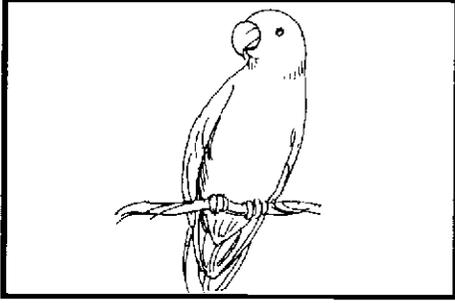
मना

उद्देश्य : मात्रा का प्रयोग

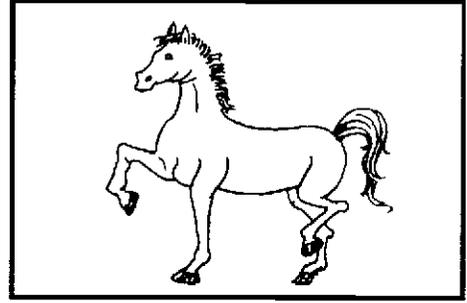


कार्य पुरित्तका

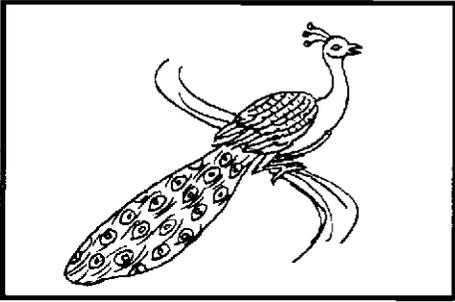
'े' की मात्रा का प्रयोग करते हुए, दिए गए चित्रों को देखकर शब्दों को पूरा कीजिए ।



त_ता



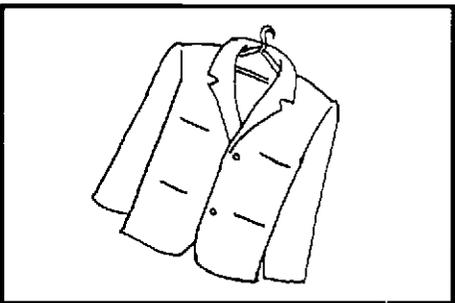
घ_ड़ा



म_र



ध_बी



क_ट



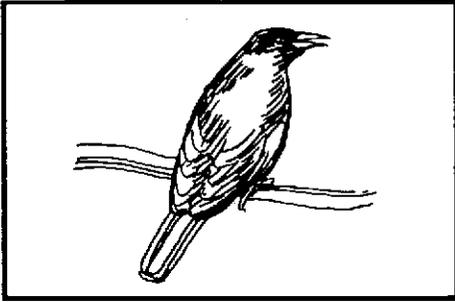
च_र

उद्देश्य : मात्रा का प्रयोग

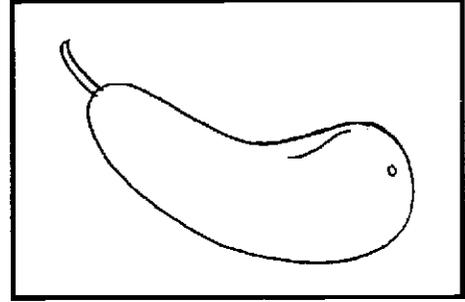


कार्य पुरितिका

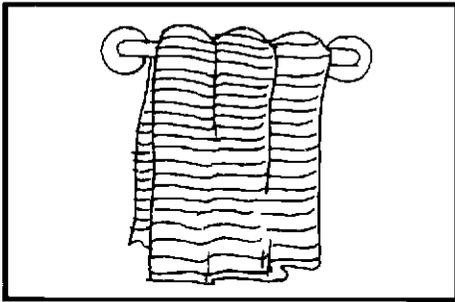
'ऐ' की मात्रा का प्रयोग करते हुए, दिए गए चित्रों को देखकर शब्दों को पूरा कीजिए ।



क_आ



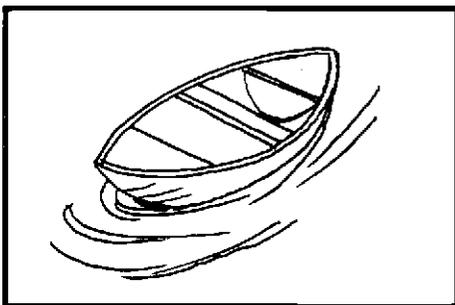
ल_की



त_लिया



अ_रत



न_का



प_धा

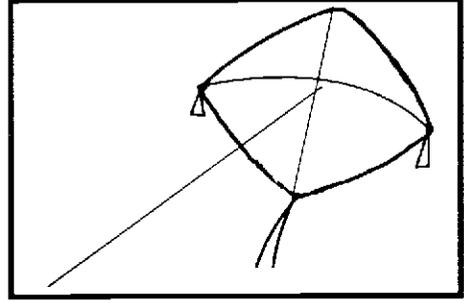
उद्देश्य : मात्रा का प्रयोग



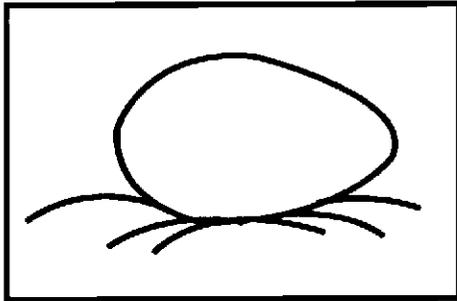
'—' की मात्रा का प्रयोग करते हुए, दिए गए चित्रों को देखकर शब्दों को पूरा कीजिए ।



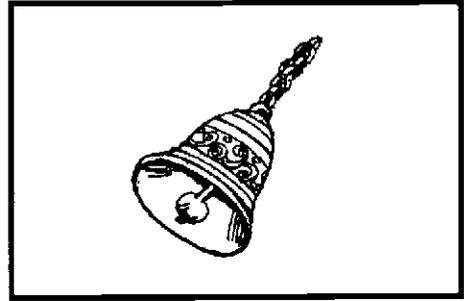
बदर



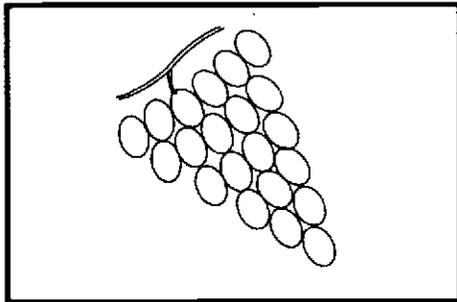
पतग



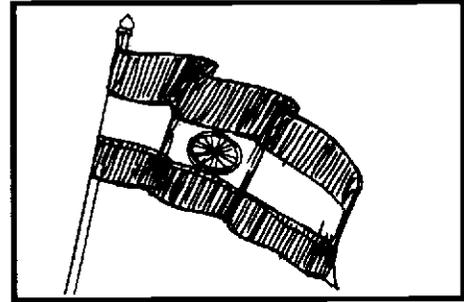
अड़ा



घटा



अगूर



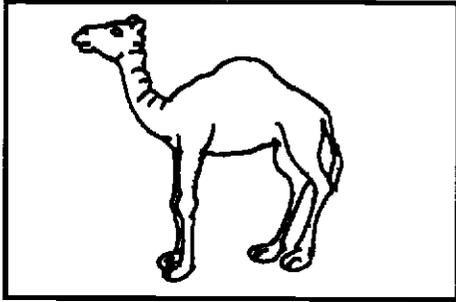
झंडा

उद्देश्य : मात्रा का प्रयोग

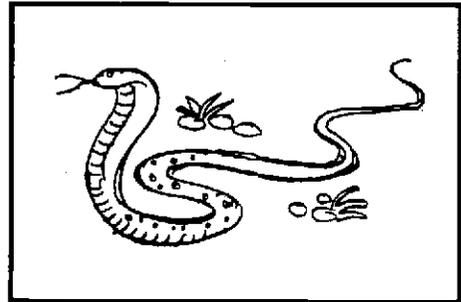


कार्य पुरितिका

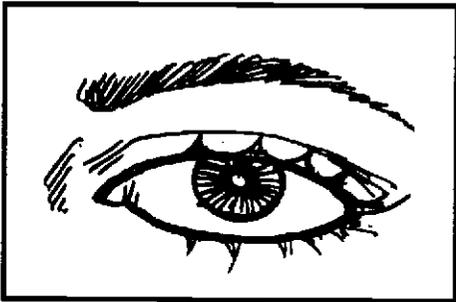
'ँ' की मात्रा का प्रयोग करते हुए, दिए गए चित्रों को देखकर शब्दों को पूरा कीजिए ।



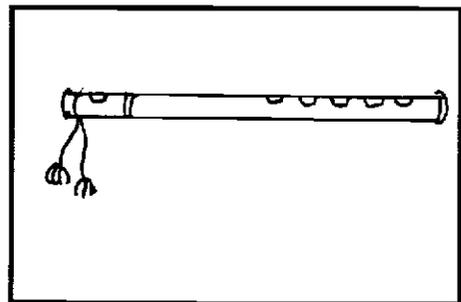
ऊँट



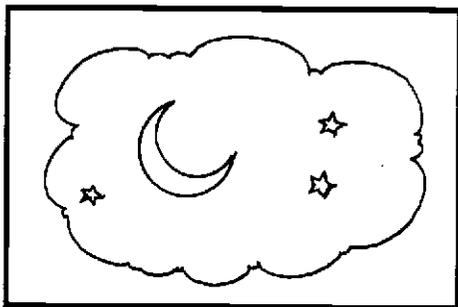
साँप



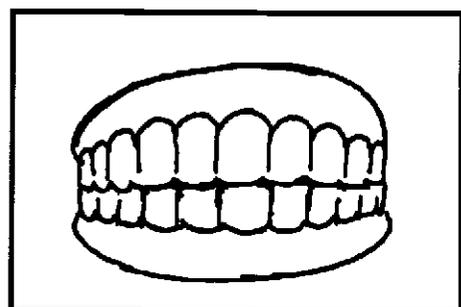
आँख



बाँसुरी



चाँद



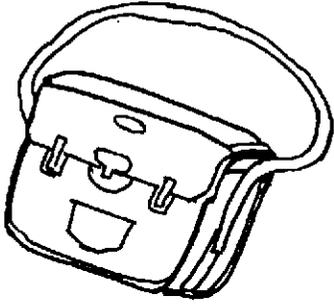
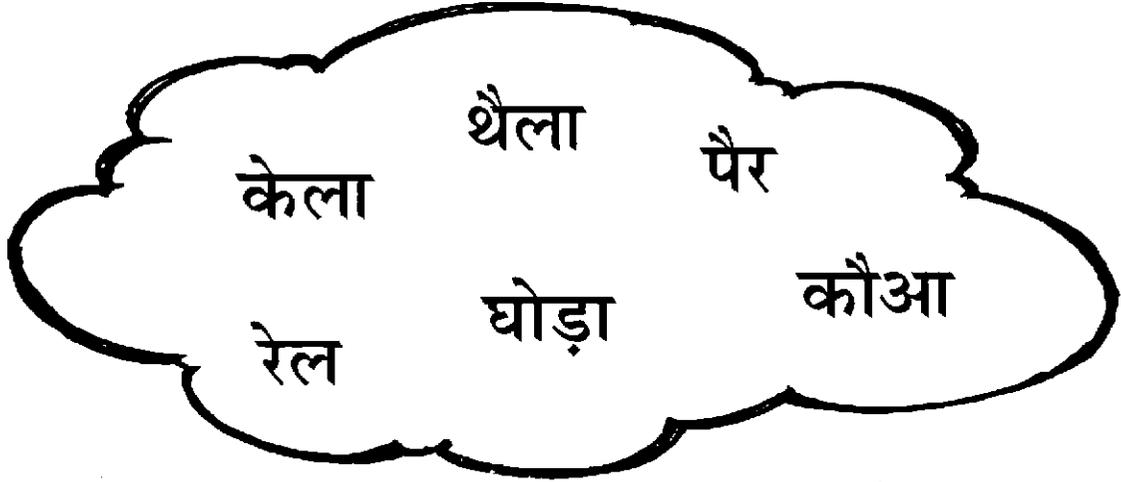
दाँत

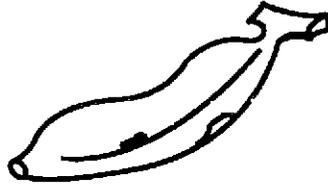
उद्देश्य : मात्रा का प्रयोग

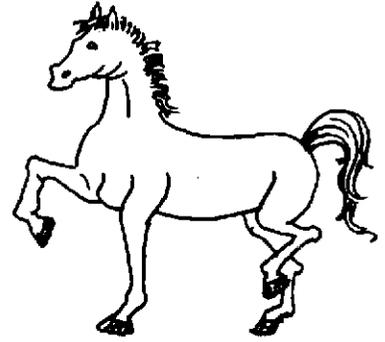


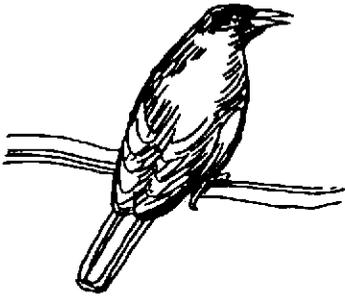
कार्य पुस्तिका

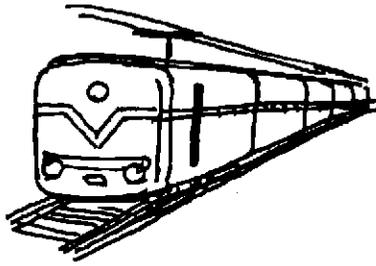
चित्र को पहचानकर, (ए, ऐ, ओ, औ) की मात्रा का प्रयोग करके शब्द लिखिए।











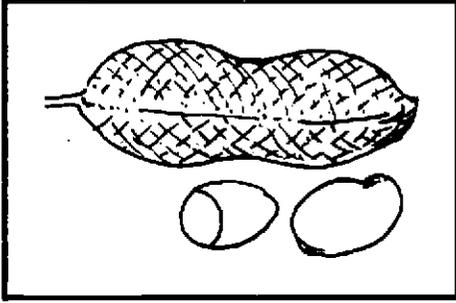


उद्देश्य : मात्रा का प्रयोग

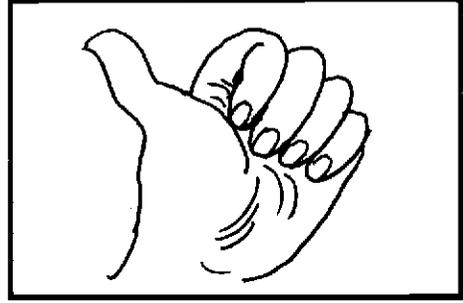


कार्य पुस्तिका

चित्रों को देखकर, दिए गए शब्दों में मात्रा जोड़कर शब्द को पूरा कीजिए।



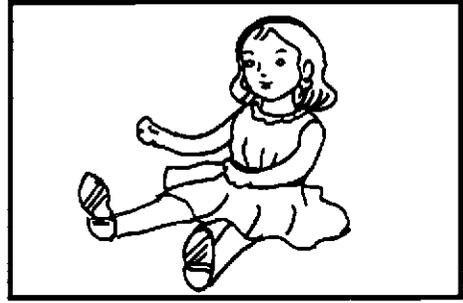
मगफल



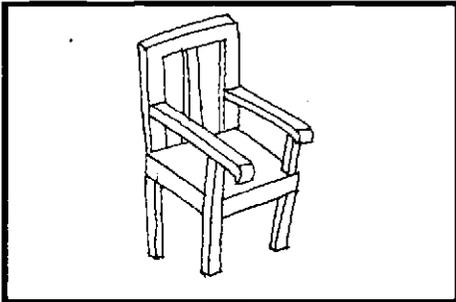
अगठ



पच



खलन



करस



पठशल

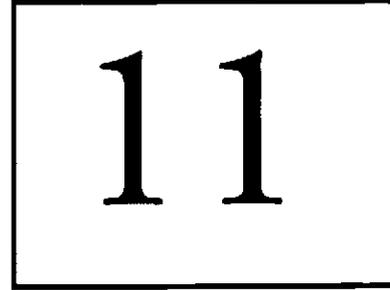
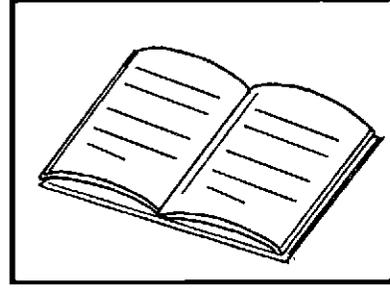
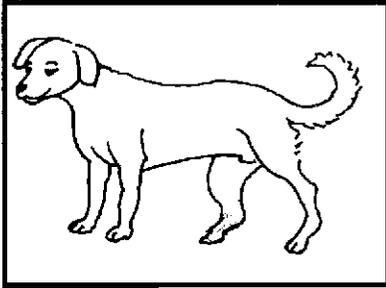
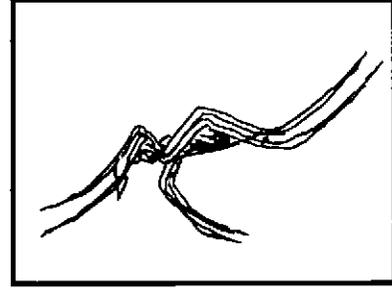
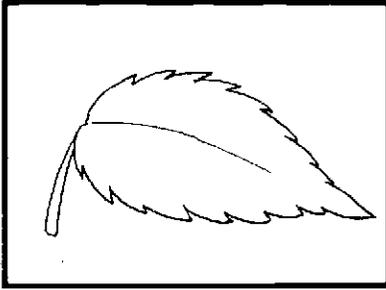
उद्देश्य : मात्रा का प्रयोग



कार्य पुरित्तका

यहाँ कुछ चित्र और शब्द दिए गए हैं। चित्र के नीचे सही शब्द लिखिए।

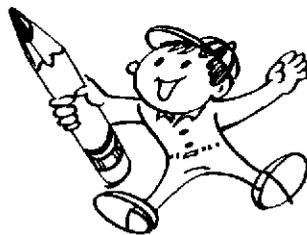
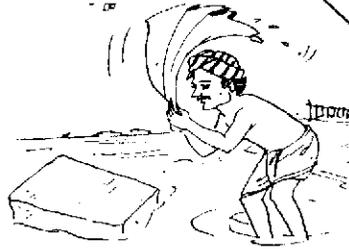
कुत्ता मच्छर पत्ता
बच्चा पुस्तक ग्यारह



उद्देश्य : संयुक्ताक्षर



नीचे दिए गए चित्रों के जोड़े बनाइए।

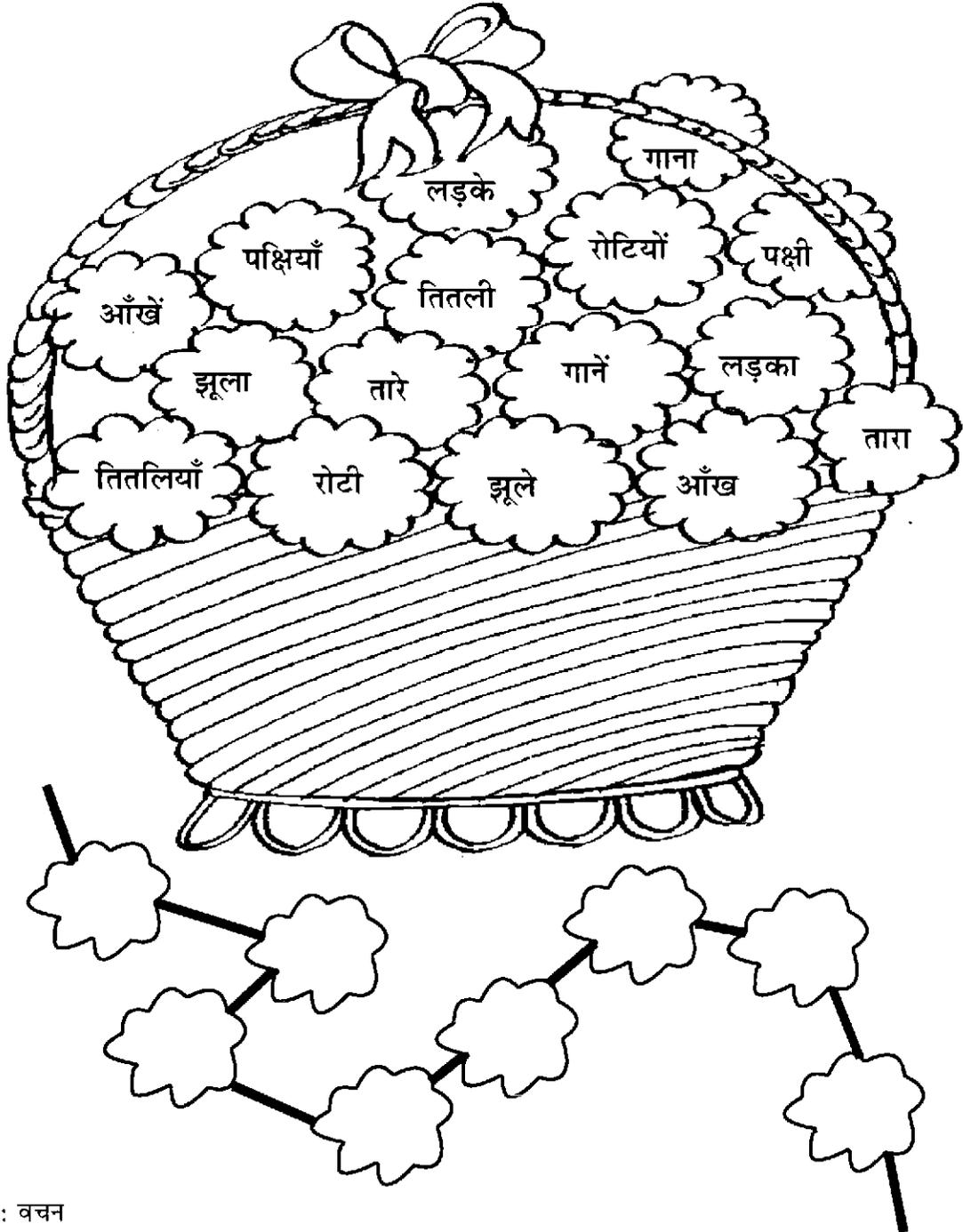


उद्देश्य : लिंग



कार्य पुरित्तका

इस टोकरी में एकवचन और बहुवचन के फूल हैं।
बहुवचन के फूलों की अलग माला बनाइए।

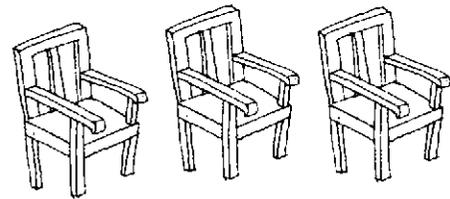
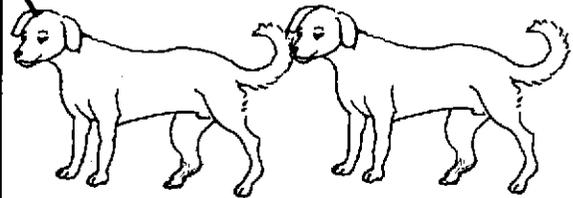
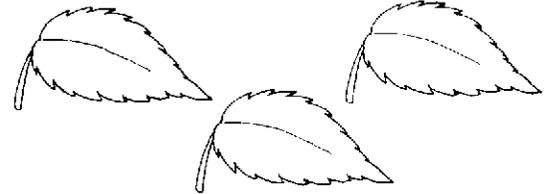
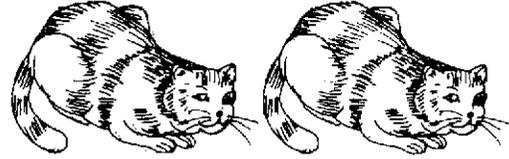
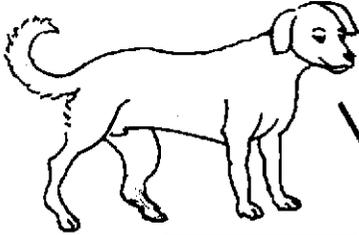
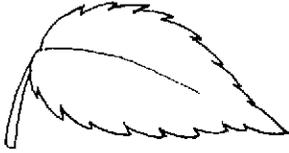
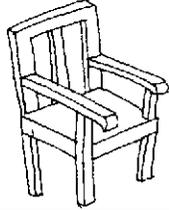


उद्देश्य : वचन



कार्य पुरस्तिका

नीचे दिए गए समान चित्रों के जोड़े बनाइए ।

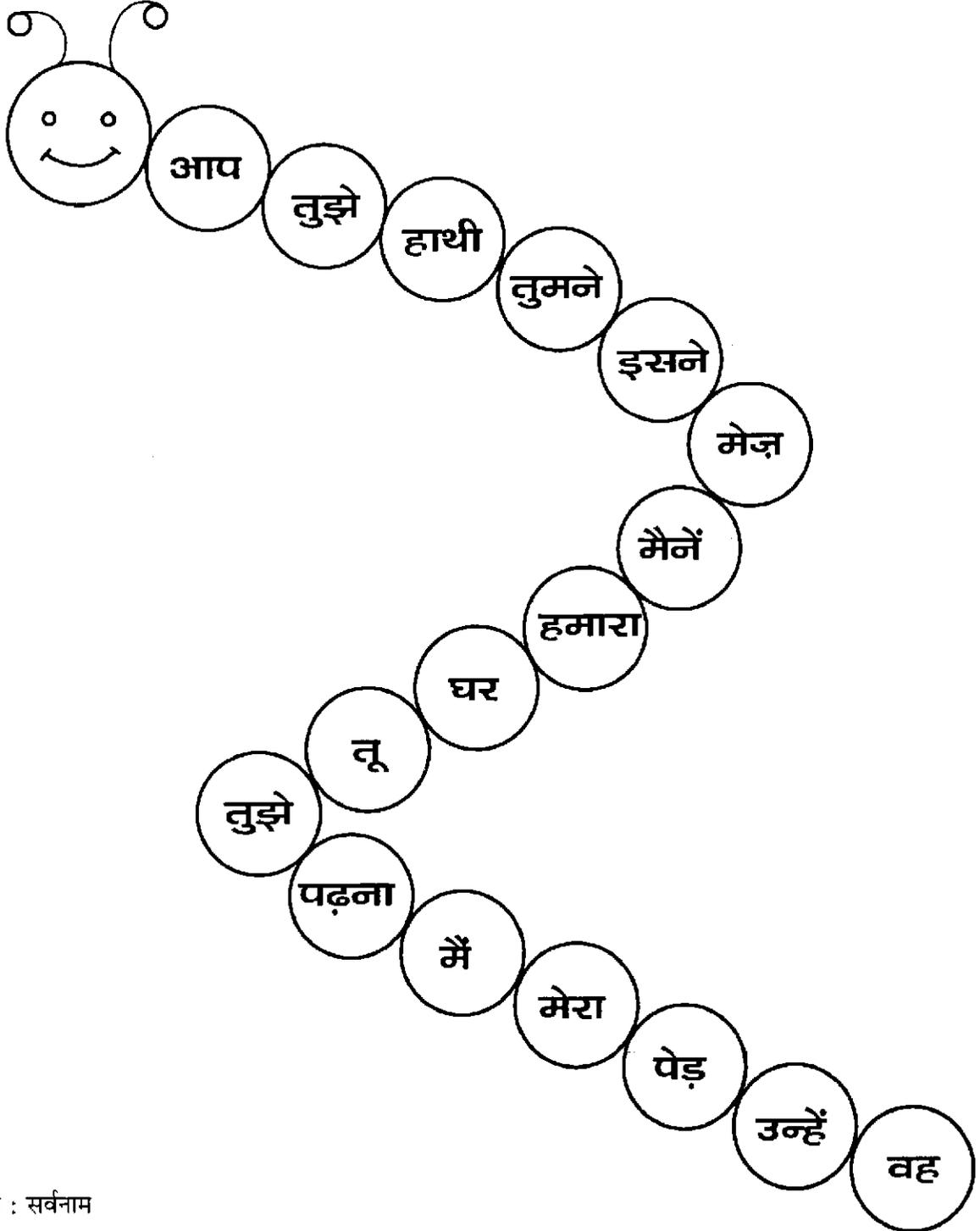


उद्देश्य : वचन



कार्य पुरितका

नीचे दिए गए चित्र में सर्वनाम शब्दों को पहचानकर उसे हरे रंग से भरिए।



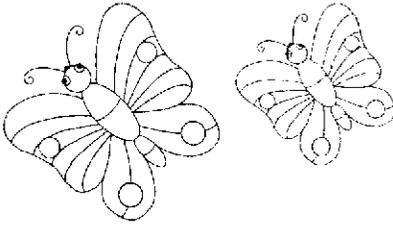
उद्देश्य : सर्वनाम



कार्य पुरस्तिका

नीचे दिए गए चित्रों को पहचानकर रिक्त स्थान में शब्दों को लिखिए।

1) अनुश _____ रहा है।



2) तितलियाँ _____ रही हैं।

3) अनिता _____ रही है।



4) मोहन _____ रहा है।

5) कुसुमा _____ रही है।



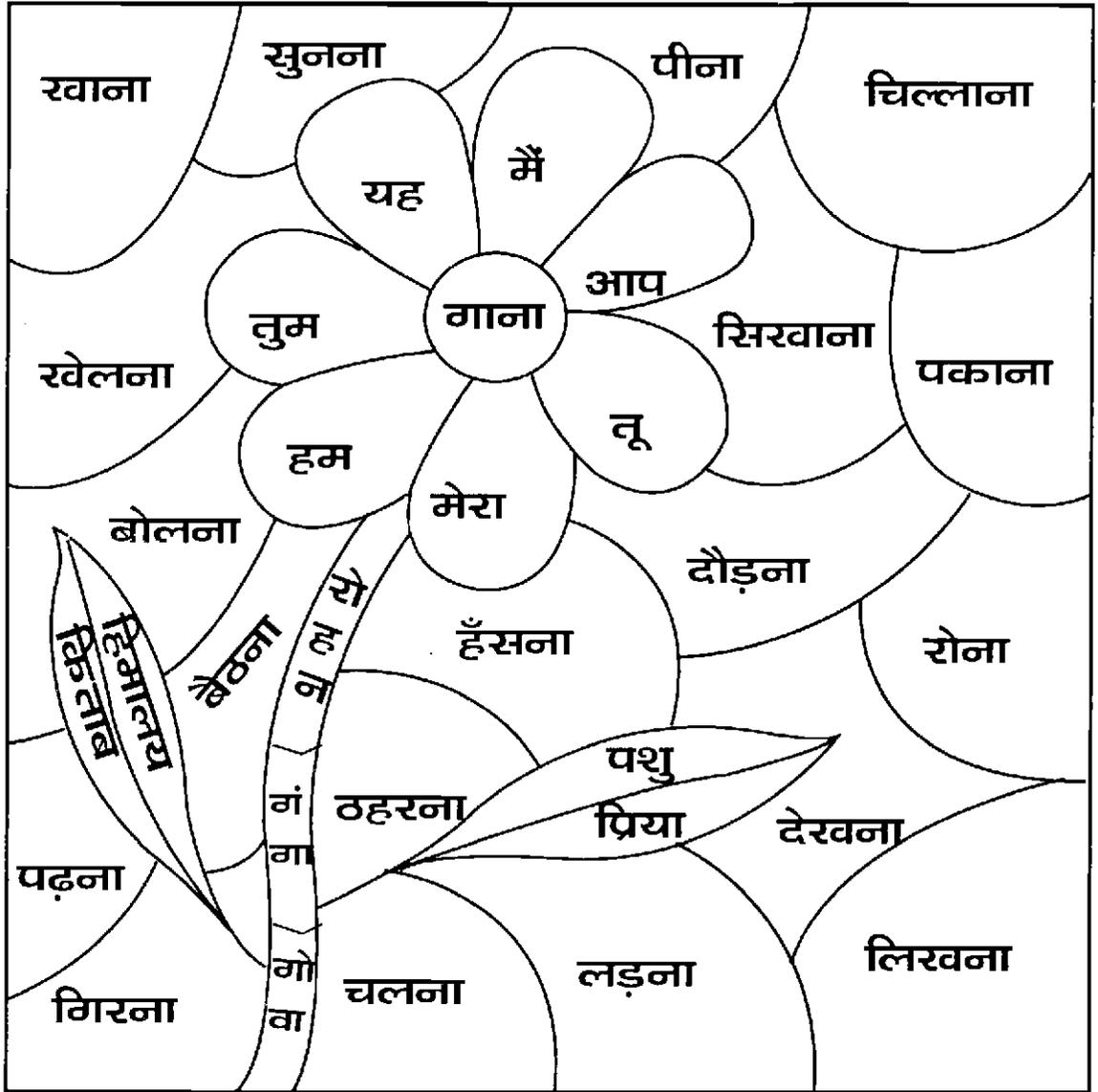
6) माँ खाना _____ रही है।

उद्देश्य : क्रिया



कार्य पुरस्तिका

नीचे दिए गए चित्र में शब्दों को पहचानिए और संज्ञा शब्दों को हरे रंग से, सर्वनाम शब्दों को पीले रंग से और क्रिया शब्दों को भूरे रंग से भरिए।



उद्देश्य : संज्ञा, सर्वनाम और क्रिया शब्द



दिए गए शब्दों में से विशेषणों को चुनकर लिखिए।



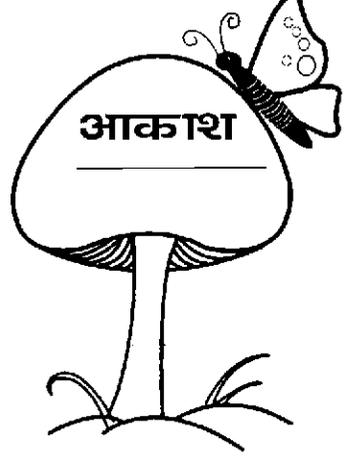
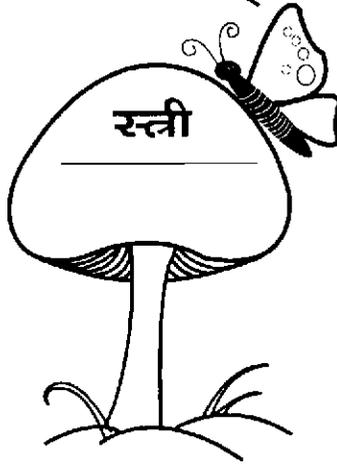
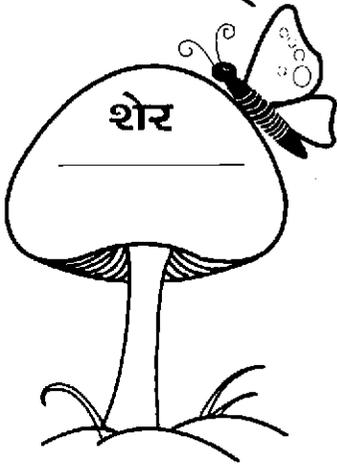
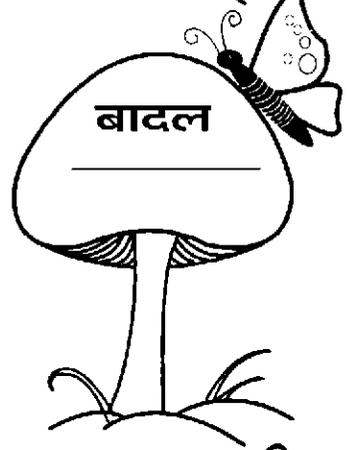
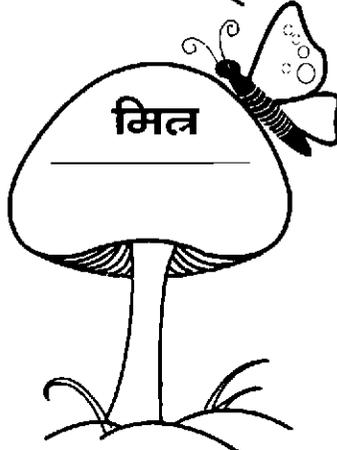
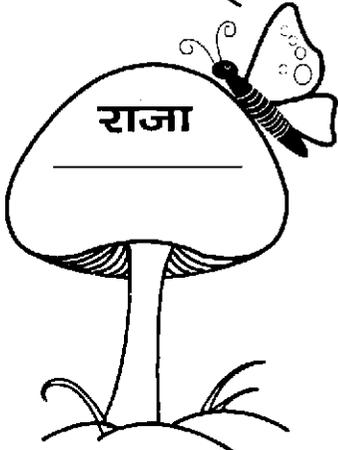
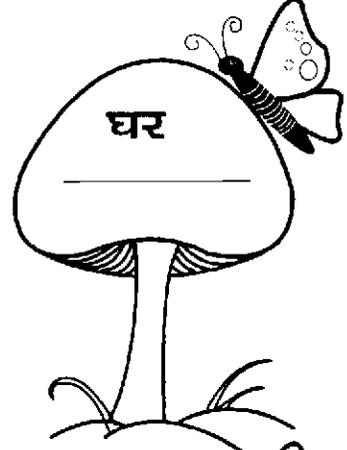
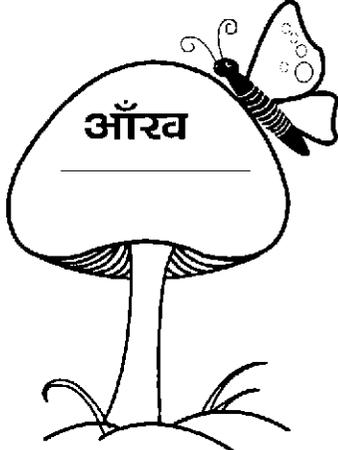
अच्छा, हाथी, सुन्दर, काला, किताब,
तेज़, बड़ा, आप, गोल, मेरा,
छोटा, तुम, आज, लंबी, मोटा, ऊँचा

उद्देश्य : विशेषण



कार्य पुरितिका

समान अर्थ वाले शब्द लिखो और तितलियों को रंगों से भरिए।



उद्देश्य : समान अर्थ वाले शब्द



कार्य पुरितिका

कप पर दिए गए शब्द पढ़कर उसका विपरीत शब्द साँसर पर लिखिए।

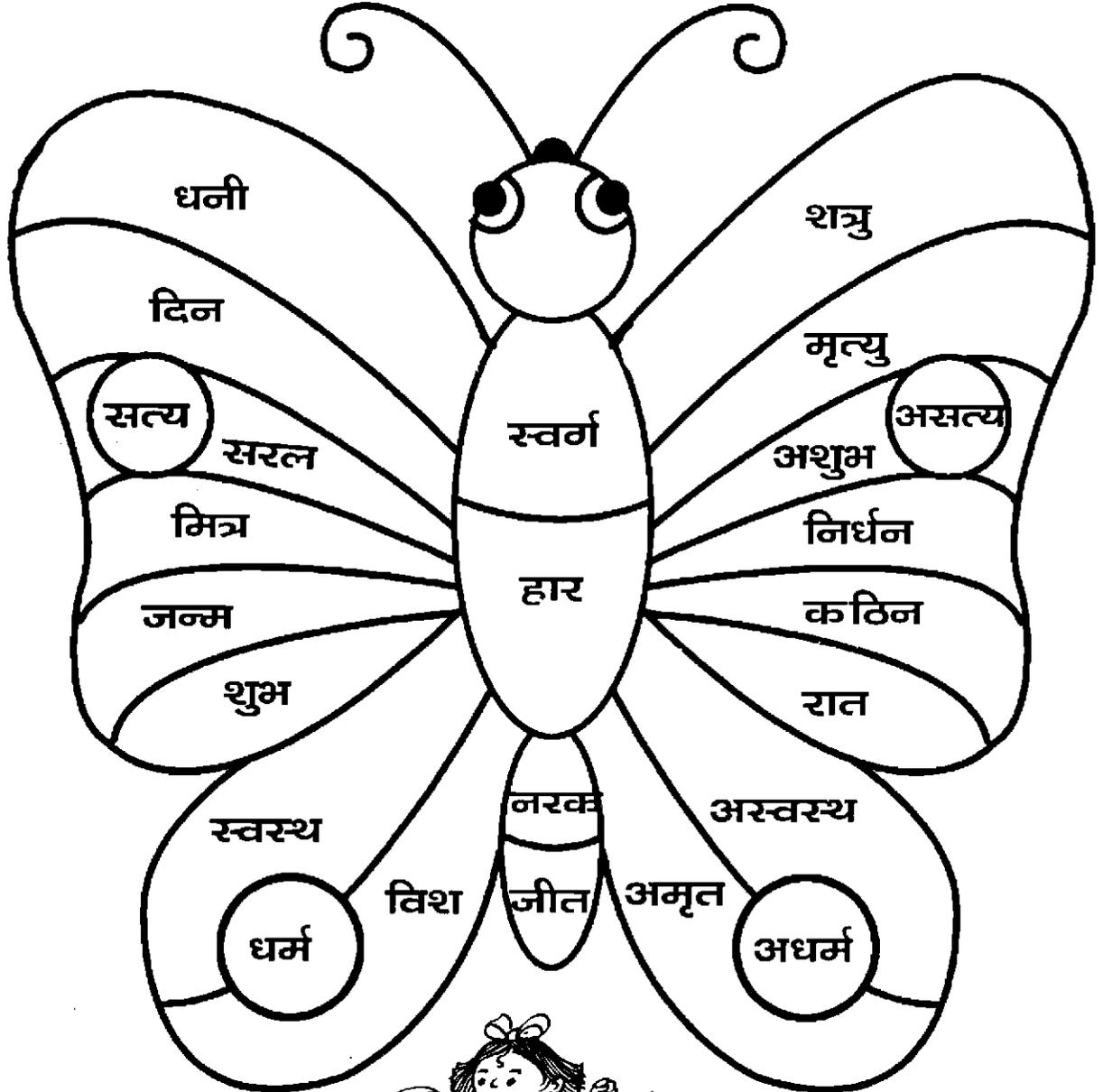


उद्देश्य : विपरीत शब्द



कार्य पुरस्तिका

विपरीत अर्थ वाले शब्दों को पहचानिए और समान रंग से भरिए।



उद्देश्य : विपरीत शब्द



कार्य पुरित्तका

नीचे दिए गए चित्रों में समुच्चयबोधक शब्दों की पहचान कर हरे रंग से भरिए ।



उद्देश्य : समुच्चयबोधक शब्द



कार्य पुरितका

दिए गए गोलों में भूतकाल लिखिए।



उद्देश्य : काल



कार्य पुरित्तका

नीचे दिए गए वाक्य को पढ़िए।
जो सही वाक्य है उसे हरे रंग से भरिए।

एक सप्ताह में सात दिन होते हैं।

मछली हवा में उड़ती है।

गाय हमें पानी देती है।

रात को आकाश में तारे दिखते हैं।

चीनी नमकीन होता है।

पेड़ चलता है।

कौआ का रंग काला होता है।



उद्देश्य : पढ़कर समझना



कार्य पुरित्तका

नीचे दिए गए मुहावरों को वाक्यों में प्रयोग कीजिए।

"ज़मीन - आसमान का अंतर",
"आँखे खुलना", "मुँह में पानी भर आना",
"नौ दो ग्यारह होना", "पानी - पानी होना",
"कान भरना"

उदा : राम और श्याम की लंबाई में ज़मीन-आसमान का अंतर है।

उद्देश्य : मुहावरे

TEACHING MATHEMATICS

CHAPTER-VII

TEACHING MATHEMATICS

Introduction

Mathematics is included as a part of the package for the students with learning problems. Dyscalculia is a mathematical disability in which an individual has a difficult time with mathematics skills, including solving arithmetic problems and grasping math concepts.

Mathematics like other areas, is one of the basic subjects. Young students are expected to acquire the vocabulary of mathematics and to learn to count, recognize and write numerals and mathematical symbols, and understand quantitative terminology. Arithmetic operations are also a part of the elementary curriculum.

Many students encounter difficulty in their attempt to **learn** the basic skills of mathematics and in their efforts to **apply** these skills in mathematical problem solving. Quantitative thinking is necessary in the adulthood. Mathematics based tasks such as handling money, telling time and measurement are essential part of daily life. Therefore when planning educational programme for students with learning disabilities mathematics has a concern and priority.

Research indicates that the mathematics deficiencies of students with learning problems

emerge in the early years and continue throughout high school and higher secondary level. Mathematics problems are common at all age levels.

Specific Math Problems at various levels

During pre-primary and primary stage, the young students face problems in

- sorting objects by size
- matching objects
- understanding the language of arithmetic
- grasping the concept of meaningful counting

During elementary / middle / upper primary school stage, they have difficulty with computational skills, fractions, decimals, percentage and measurement.

The high school level students may continue with problems in the same areas like younger students, such as errors in place value and basic facts.

Warner, Alley, Schumaker, Deshler and Clark (1980) found that progress in mathematics in students with learning disabilities reaches a plateau after seventh grade. The students in the study achieved only one more year's growth in mathematics from seventh through

twelfth grade. The mean math score of students with learning disabilities in the twelfth grade were high that of fifth grade. Therefore, learning package for teaching Mathematics is developed for the primary level students with learning disabilities attending normal schools. This may ensure a strong foundation in mathematics.

Development of Mathematics Skills

Mathematics has a logical structure. Students first construct simple relationships and then progress to more complex tasks. As the student progresses in the ordering of math tasks, the learning of skills and content transfers from each step to the next. The best learning sequences come from arranging instruction in learning hierarchies.

Math hierarchy

I & II grade - Numerals of computation, addition, subtraction, multiplication and division.

III & IV grade - Ability to use the concept of money, measurement and time.

V grade - Fractions, Geometry, Decimals and Percentage

Cognitive factors :

Several cognitive factors are needed for a student to progress in mathematics. The abilities to begin formal mathematics instruction are :

- to form and remember associations
- to understand basic relationships
- to make simple generalizations

More complex cognitive factors are needed as the student progresses from lower level mathematics skills to higher order ones. The concept of learning readiness is important in mathematics instruction.

Readiness for Number Instruction

Piaget (1965) describes the following concepts basic to understanding numbers,

- Classification
- Ordering and seriation
- One-to-one correspondence
- Conservation

Classification

Classification involves a study of relationships such as likeness and differences. Activities include categorizing objects according to a specific property.

For example :

Grouping objects according to colour and size. Children 5 to 7 years of age can judge objects as similar or dissimilar on the basis of properties such as colour, size, texture and function (Copeland, 1979).

Ordering:

The concept of ordering is important for sequencing numbers. They first must understand the topological relation of order. When counting objects, students must order them so that each object is counted only once.

Topological ordering involves arranging a set of items without considering a quantity relationship between each successive item. A seriation task would be arranging items of various length in an order from shortest to longest with each successive item being longer than the preceding item. Children 6 to 7 years of age usually master ordering and seriation.

One-to-one correspondence:

One-to-one correspondence is the basis for counting to determine how many. It is essential for mastering computation skills. Children 5 to 7 years old master one-to-one correspondence.

Conservation:

The concept of conservation is fundamental to later numerical reasoning. Conservation means that the quantity of an object or the number of objects in a set remains constant regardless of spatial arrangement. Copeland, 1979, describes two types of conservation, quantity and number.

Conservation of quantity

Conservation of quantity is illustrated in the familiar Piagetian experiments of pouring identical amounts of water into a tall, thin glass and a low, wide glass and rolling a piece of clay into a ball and a long roll. Students who recognize that the amount of water or clay remains constant probably understand conservation of quantity.

Conservation of number involves understanding that the number of object in a set remains constant whether the objects are close together or spread apart.

The above theory is reflected as readiness skills for preprimary mathematics prepared by the National Council of Educational Research and Training (NCERT), syllabus, minimum level of learning at primary level.

Readiness for Primary Mathematics

The readiness skills listed by NCERT are given below :

1. Arrange objects in order according to size, length, thickness, weight and volume and use vocabulary describing the relationship.

The Mathematics deficiencies of students with learning problems emerge in the early years and continue throughout high school and higher secondary levels. Problems are common at all age levels.

Example : 'bigger than', 'smaller than', 'the same as', 'heavier', 'heaviest' etc.

2. Classify groups of objects according to various properties. Example : size, shape, length, etc.
3. Compare positions of things and persons in terms of the distance from a given point of reference and use vocabulary describing the relationships. Example : 'near', 'far', 'nearest', etc.
4. Perceive and reproduce simple patterns relating to shape, colour, position and quantity.

Primary level mathematics – Minimum levels of learning (NCERT)

Curricular areas

1. Understanding whole numbers and numerals
2. Ability to add, subtract, multiply and divide whole numbers
3. Ability to use and solve simple problems of daily life relating to

Money
Length
Mass (weight)
Capacity
Time

4. Ability to use fractions
5. Ability to use decimals
6. Ability to use percentage
7. Understanding of geometrical shapes and spatial relationship

Readiness for Advanced Mathematics

Some equations that are especially important for teaching mathematics skills to students with learning problems are the following.

Commutative property of addition

The sum remains constant even if the same numbers are combined in any manner.

$$a + b = b + a$$

$$2 + 4 = 4 + 2$$

Commutative property of addition and multiplication

The sum of the product is unchanged regardless of grouping arrangements.

Addition

$$(a+b) + c = a + (b+c)$$

$$(3+4) + 2 = 3 + (4+2)$$

Multiplication

$$(a \times b) \times c = a \times (b \times c)$$

$$(5 \times 4) \times 3 = 5 \times (4 \times 3)$$

Distributive property of multiplication

Over addition : This rule relates the two operations

$$a (b + c) = (a \times b) + (a \times c)$$

$$5 (4 + 3) = (5 \times 4) + (5 \times 3)$$

Inverse Operations

These equations relate to operations that are opposite in their effect. The following equations demonstrate inverse operations.

Addition and Subtraction

$$a + b = c \quad 3 + 6 = 9$$

$$c - a = b \quad 9 - 3 = 6$$

$$c - b = a \quad 9 - 6 = 3$$

Assessment of Mathematics

The skill hierarchy in Mathematics is developmental, though it is a complex body of knowledge. The developmental nature of mathematics is reflected in the regular school curriculum. Skills are built one on the other.

It is important to distinguish between Mathematics and one of its components, arithmetic. Reid & Hresko, 1981 provide these definitions:

Mathematics refers to the study of development of relationships, regularities, structures, or organizational schemata dealing with space, time, weight, mass, volume, geometry and number.

Arithmetic refers to the computational methods used when working with numbers. Arithmetic is a computational skill. It is concerned with the operations of addition, subtraction, multiplication and division and algorithms involved in these operations.

Algorithms are step by step procedures for solving computational problems (Ashlock, 1982).

The need to assess mathematics

One of the primary aims of the primary school curriculum is the development in mathematical thinking and computation. The primary level mathematics becomes the foundation for the secondary grade mathematics. In order to meet the expectations of regular curriculum in the acquisition and application of mathematics skill, mathematics became a major assessment concern. The reasons to assess mathematic skills are:

- To evaluate a student's competence in mathematics
- To teach mathematic facts and concepts
- To know whether students have mastered those facts and concepts
- To provide sufficient detailed information to teachers and intervention assistance teams to plan and evaluate instructional programmes

- To make exceptionality and eligibility decisions
- To determine eligibility for employment

Why Teachers Assess Mathematics

Teachers assess all the subjects at regular intervals throughout the classes or grades. The result is used for promotion from one class to another upto high school. Mathematics is one of the important subjects to be assessed at regular intervals.

Why special teachers assess Mathematics

The students who have difficulties in Mathematics are referred for special education. When they are referred, there is a need to find out the student's achievement and difficulty levels. Therefore, the special teachers conduct various types of assessments at various levels.

The initial mathematical assessment determines the need for special education services. Ongoing Mathematics assessment provides detailed information for programme planning. Precise information is the basis for individualized education programme. Assessment continues as long as the student is in need of specially designed mathematics instruction. In current practices, mathematics is assessed by using

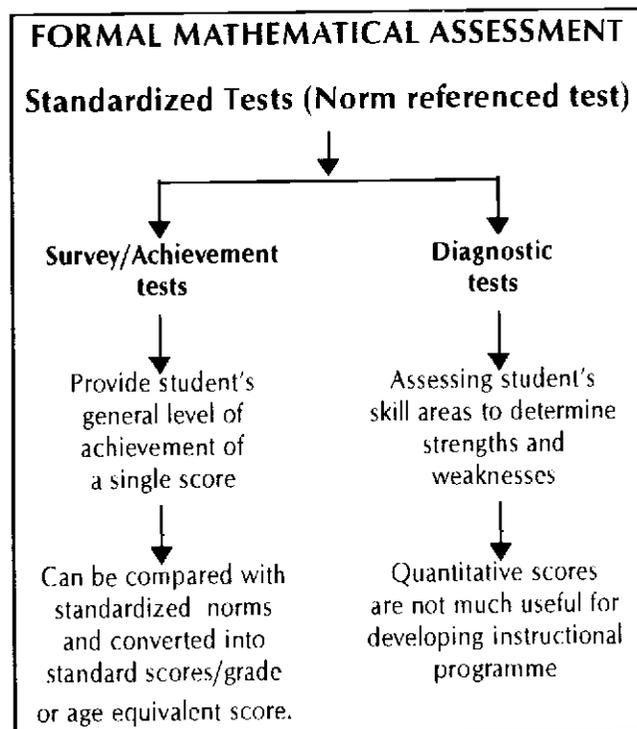
- formal and informal measures
- individual and group tests
- error analysis
- informal inventories
- grade referenced standardized tests

The teachers use daily work samples and teacher conducted tests for informal assessment. It is an efficient way of determining the instructional needs of each

student. The purpose is to determine the student's understanding of mathematics concepts at concrete, semiconcrete, abstract and application levels.

Formal Assessment

Standardized Tests : Standardized mathematic tests are norm-referenced and provide many kinds of information. They usually are classified into two categories: Survey/achievement and diagnostic. Survey tests cover a broad range of mathematic skills and are designed to provide an estimate of the student's general level of achievement. They yield a single score, which is compared with standardized norms and converted into standard scores or a grade-or-age-equivalent score. Survey tests are useful in screening students to identify those who need further assessment. Diagnostic tests, in contrast, usually cover a narrower range of content and are designed to assess the student's performance in mathematic skill areas. Diagnostic tests aim to determine the student's strengths and weaknesses.

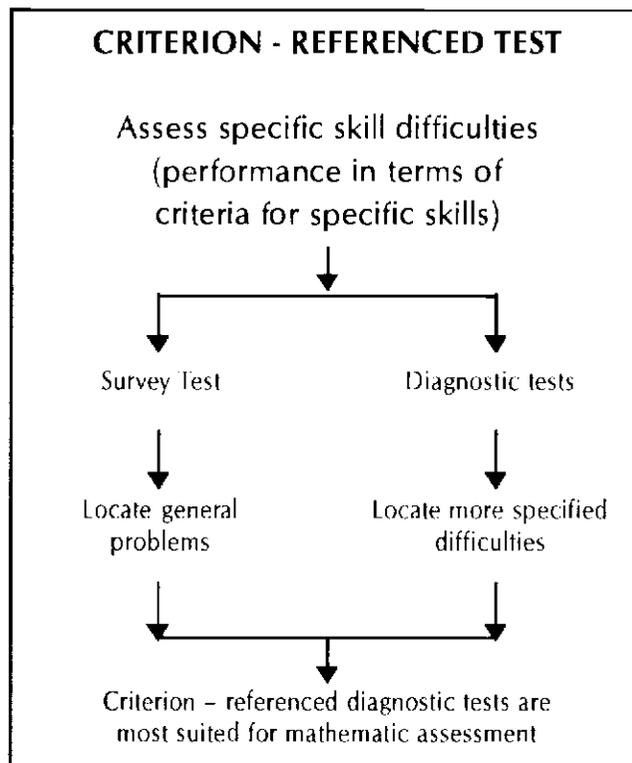


Survey Tests : Most achievement tests include sections covering specific academic areas, such as reading, spelling and mathematics. Each of these specific academic areas is divided into skill areas. For example, a mathematic section may be divided into numerical reasoning, computation and word problems.

Diagnostic Tests: No one diagnostic test assesses all mathematical difficulties. The examiner must decide on the purpose of the assessment and select the test that is most suited to the task. Because quantitative scores are not very useful in developing a systematic instructional programme, most diagnostic tests are criterion-referenced.

Criterion – Referenced Tests : Standardized tests compare one individual’s score with norms, which generally does not help diagnose the student’s mathematic difficulties. However, criterion-referenced tests, which describe the student’s performance in terms of criteria for specific skills, are suited to assess specific difficulties. Like standardized tests, criterion-referenced tests are divided into survey and diagnostic tests.

Criterion-referenced achievement or inventory tests usually cover several academic areas. Each of these areas is further subdivided into skill categories. Whereas survey tests locate general problem areas, diagnostic tests focus on more specific difficulties. Of all available published tests, criterion-referenced diagnostic tests are the most suited for identifying specific mathematic problems.



Informal Mathematical Assessment

Informal assessment involves examining the student’s daily work samples or administering teacher-constructed tests. Informal assessment is essential for the frequent monitoring of student’s progress and for making relevant teaching decisions regarding individual students. Such assessment enables teachers to sample specific skills through the use of numerous test items that are related directly to the mathematic curriculum. Because the content of standardized mathematic tests and the content of mathematic curriculum texts have a low degree of overlap (Tindal & Martal, 1990), the practice of assessing each student’s achievement within the curriculum becomes essential. With informal techniques the teacher also can determine the student’s understanding of mathematic concepts at the concrete, semiconcrete and abstract level. By asking appropriate questions and listening to student’s responses, the teacher can assess not only whether a student can solve a particular

problem but how the problem is solved. Informal assessment thus is an efficient way of determining the instructional needs of individual students.

INFORMAL MATHEMATICAL ASSESSMENT

The teachers use student's daily work samples and teacher conducted tests for informal assessment. It is an efficient way of determining the instructional needs of each individual student.

The purpose is to determine the student's understanding of Mathematic concepts at

Concrete
Semiconcrete and
Abstract levels

Curriculum-Based Measurement

When a teacher assesses progress within the curriculum to measure achievement, he/she is assured that what is being assessed is what is being taught. Curriculum-based measurement (CBM) offers the teacher a standardized set of informal assessment procedures for conducting a reliable and valid assessment of a student's achievement within the mathematic curriculum.

CURRICULUM BASED MATHEMATICAL ASSESSMENT

- **Assess within the curriculum to measure the achievement**
- **What is being assessed is what is being taught**

Uses standardized set of informal assessment procedures for conducting a reliable and valid assessment of a student's achievement within the Mathematical curriculum.

Teacher made checklist

Checklists are a quick and widely used methods for gathering information about the student's performance in mathematics. There are different types of teacher made checklists.

1. Checklists general in nature surveying a wide range of mathematic skills.
2. Checklists specific in nature focusing on a particular set of skills.

The major use of checklist is to assess current level of functioning, document and monitor students acquisition of mathematics skills.

Informal inventories

Informal inventories are easy for teachers to construct and to assess the required area in mathematics. For example, if the student has problem in addition, the following inventory would be helpful to check the student's problems.

One digit addition

| | | |
|-------|-------|-------|
| 6 | 3 | 4 |
| + 2 | + 6 | + 5 |
| ----- | ----- | ----- |
| ----- | ----- | ----- |

Addition involving zeros

| | | |
|-------|-------|-------|
| 4 | 10 | 0 |
| + 0 | + 6 | + 6 |
| ----- | ----- | ----- |
| ----- | ----- | ----- |

Two digit and one digit addition

| | | |
|-------|-------|-------|
| 11 | 26 | 17 |
| + 5 | + 3 | + 2 |
| ----- | ----- | ----- |
| ----- | ----- | ----- |

Carry over

| | | |
|-------|-------|-------|
| 29 | 67 | 75 |
| + 35 | + 89 | + 36 |
| ----- | ----- | ----- |
| ----- | ----- | ----- |

Three digit addition

$$\begin{array}{r} 365 \\ + 402 \\ \hline \hline \end{array} \quad \begin{array}{r} 425 \\ + 62 \\ \hline \hline \end{array} \quad \begin{array}{r} 301 \\ 625 \\ + 10 \\ \hline \hline \end{array}$$

If the teacher wants to know the students understanding of place value concepts, the teacher can device another set of questions as given below:

• $26 = \underline{\quad}$ tens + $\underline{\quad}$ ones

$40 = \underline{\quad}$ tens + $\underline{\quad}$ ones

$125 = \underline{\quad}$ hundreds + $\underline{\quad}$ tens + $\underline{\quad}$ ones

Mathematics skills are usually assessed with paper and pencil tasks. There are many other alternatives.

- Orally ask: $5 + 8$; how many?
- Horizontal notation. $2 + 5 = \underline{\quad}$
- Timed inventories to measure speed.

Error Analysis

Error analysis is a traditional technique in mathematics assessment. Mathematics is one of the school subjects best suited for error analysis. Cox (1975) differentiates between systematic computation errors and errors that are random or careless mistakes. With systematic errors, students are consistent in their use of an incorrect number fact, operation, or algorithm.

Robert (1968) studied the written computation of elementary grade students and identified four error types.

1. Incorrect operation - The student selects the incorrect operation. For example, if the problem requires subtraction, the student adds.

2. Incorrect number facts - The number fact recalled by the student is inaccurate. For example, the student recalls the product of 5×8 as 50.

3. Incorrect algorithm - The procedures used by the student to solve the problem are inappropriate. The student may skip a step, apply the correct step in the wrong sequence or use an inaccurate method. For example, in a subtraction problem, the student may subtract the smaller number from the larger number ($67-29=42$).

4. Random Error - The students response is incorrect and apparently random. For example, the student writes 100 as the answer to 42×6

Steps for error analysis

The following steps can be used in error analysis.

1. Collect a sample of students work. Samples can be homework assignments, worksheets, work book pages or class room tests.
2. Grade the sample to identify the type of errors the students make. If the students handwriting is not legible, take the students help to evaluate it and separate the problem of handwriting from mathematics.
3. Categorize the errors.
Random errors/
Incorrect operations/
Inaccurate number facts/
Defective algorithm.
4. Analyse whether the errors are systematic. If the student does $6+8=14$, correctly for 5 times, and if he makes a mistake the 6th time, it is only a careless mistake.

Error Clusters

Error analysis is the study of the student's mistakes. The premise of error analysis is that students develop incorrect or faulty ways of doing mathematics much the same way that other students develop correct ways of performing the same skills. The error pattern a student demonstrates, provides the teacher with information regarding how the incorrect answer was arrived. Once this is known the teacher is able to alter instruction to correct the problem. Enright (1985) suggests seven error clusters that organize the errors in a logical manner.

1. **Regrouping** : This cluster shows that the student has little understanding of place value or the arithmetic steps to show it.

$$\begin{array}{r} \text{Example :} \quad 28 \\ + 8 \\ \hline 216 \\ \hline \end{array}$$

2. **Process substitution** : In this error cluster, the student changes the process of one or more of the computation steps and creates a different algorithm that results in an incorrect answer.

$$\begin{array}{r} \text{Example:} \quad 42 \quad \text{add 2 and 3 = 5} \\ + 3 \quad \quad \quad 4 \text{ and 3} = 7 \\ \hline 75 \quad \text{The multiplication} \\ \quad \quad \quad \text{pattern is used.} \end{array}$$

3. **Omission** : The student leaves out a step or a part of the answer and reaching at an incorrect answer.

$$\begin{array}{r} \text{Example:} \quad .3 \\ + .6 \quad \text{Omits the decimal} \\ \hline 9 \\ \hline \end{array}$$

4. **Directional** : The steps are performed in a wrong direction

$$\begin{array}{r} \text{Example :} \quad 24 \\ + 3 \quad \quad \quad 2 + 4 + 3 = 9 \\ \hline 9 \\ \hline \end{array}$$

5. **Placement** : In this set of error pattern the student computes correctly but places the answer in the wrong place.

$$\begin{array}{r} \text{Example:} \quad 9 \\ + 6 \\ \hline 51 \\ \hline \end{array}$$

6. **Attention to sign** : In this set of error patterns the student does not attend to which sign is used. Some students ignore punctuation in reading. Finally this kind of errors lead to wrong answers. Example: Subtracts instead of addition.

7. **Guessing** : In this type of error patterns the student demonstrates no fundamental understanding of the problem at all. It is necessary to go back to the developmental process in readiness and basic concepts.

Example : copies both numerals

$$\begin{array}{r} 2 \\ + 5 \\ \hline 25 \\ \hline \end{array}$$

Other computational difficulties of students with learning problems.

Addition

The sums of ones and tens are each recorded without regard for place value.

$$\begin{array}{r} 48 \quad \quad \quad 28 \\ + 43 \quad \quad \quad + 46 \\ \hline 811 \quad \quad \quad \hline 614 \\ \hline \end{array}$$

All digits are added together. Defective algorithm and no regard for place value.

$$\begin{array}{r} 27 \\ + 46 \\ \hline 19 \end{array}$$

Digits added from left to right

$$\begin{array}{r} 276 \\ + 926 \\ \hline 11013 \end{array}$$

Step 1. $9+2=11$, 1 is carried to the next
 Step 2. $1+7+2=10$, 1 is carried to the next
 Step 3. $1+6+6=13$

Subtraction

The smaller number is subtracted from the larger number

$$\begin{array}{r} 768 \\ - 589 \\ \hline 221 \end{array}$$

Regrouping

Regrouping is used when it is not required.

$$\begin{array}{r} 175 \\ - 54 \\ \hline 1111 \end{array} \qquad \begin{array}{r} 788 \\ - 56 \\ \hline 7212 \end{array}$$

When taking away 4 from 5 is possible, the child has borrowed to make a 15 and subtracted this arriving at 11 which he has written as a product as it is.

Has problems when regrouping is required more than once.

$$\begin{array}{r} 632 \\ - 147 \\ \hline 495 \end{array} \qquad \begin{array}{r} 563 \\ - 382 \\ \hline 281 \end{array}$$

Division

The divisor and dividend are reversed

$8 \div 40$ instead of $40 \div 8$

The zero in the quotient is omitted.

$$\begin{array}{r} 6) 1206 \text{ (21)} \\ \underline{1200} \\ 6 \\ \underline{6} \\ 0 \end{array}$$

After 12, 0 is omitted. Therefore arrives at the answer 21 instead of 201.

Remainders are ignored

$$\begin{array}{r} 5) 356 \text{ (71)} \\ \underline{35} \\ 6 \\ \underline{5} \\ 1 \end{array} \qquad \begin{array}{l} \text{answer } 356 \div 5 = 71 \\ \text{The remainder 1 is ignored} \end{array}$$

Error Analysis in Word problem

Error analysis can be used with mathematical story problems. The following steps can be considered in word problem error analysis.

To determine carelessness in computation, check the magnitude of the discrepancy between incorrect and correct responses.

Check the selection of the proper operation.

If the student shows carelessness in computation and selection of proper operation, the next step is to conduct a clinical interview to determine how the student goes about to solving story problems.

Clinical Interviews

Clinical interviews are the most appropriate techniques for process analysis. It elicits information about the procedures, the students use to arrive at the products.

The techniques used :

- Observation : The professional observes while the student does the mathematics. Takes a note of the observation.
- Interviews are conducted after the student completes the task. The student is asked to verbalize the method he/she used to arrive at the answer.

Guidelines for Mathematical Interviews (Bartel, 1982)

- Select one problem at a time
- Begin with the easiest problem first
- Taper or keep a record of the interview
- The student does the mathematics problem and explains orally while doing the problem itself
- The student should be left free to solve the problem in his/her own way
- Avoid hurrying the student

After completing the task, the professional can interview again. The second task is given after completing the first one. In the class room, teachers can present the student with mathematics problems and then listen to the student's explanation of strategies selected for problem solving.

Clinical interviews can also provide information about the methods a student uses in solving story problems.

Diagnostic probes

Diagnostic probes can be incorporated into the clinical mathematics interviews. The student is given several story problems. Asked to "think aloud". Alternate strategy is provided when the student faces problems or mistakes to complete the task.

The following table provides several diagnostic probes for study of problem solving skills (modified Goodstain 1981)

| Suspected area of difficulty in the story problems | Suggested interventions |
|--|--|
| Decoding the words | Read the story problem aloud and check whether he can understand |
| Meaning of the situation | Ask the student to draw a picture or show a picture drawn |
| Selection of appropriate operation | Ask to explain the meaning of the quantitative terms |
| Remembering number facts | Provide concrete objects to manipulate |
| Selecting the algorithm | Teach the procedure; provide a calculator |

Questionnaires and interviews

Questionnaires and interviews are used in mathematical assessment to collect various information relevant for math remedial instruction. Questionnaires are useful only for the students who can read, comprehend and answer. But interviews can be used for the students having reading problems.

Mathematical Assessment by Teachers at Various Levels

Initial level screening – curriculum based class tests

The usual method of assessment used by teachers is the curriculum based assessment. Curriculum is prescribed and it has a standardized content which is given to every class for instruction, evaluation and promotion. Every teacher assesses the students at various intervals such as monthly, quarterly and annually by setting questions as per the given guidelines. This test is given to all the students in a class room. By analysing the students score in these tests, the teachers can identify students who have problems in mathematics. It is the initial level of screening.

Second level screening – difficulty based screening test using deficit level screening checklist

The deficit level screening checklist can be used at second level screening. The screening checklist gives general information on certain

deficit areas of difficulties in mathematics at primary level.

Third level – curricular areas based test

Primary level mathematics has the following areas

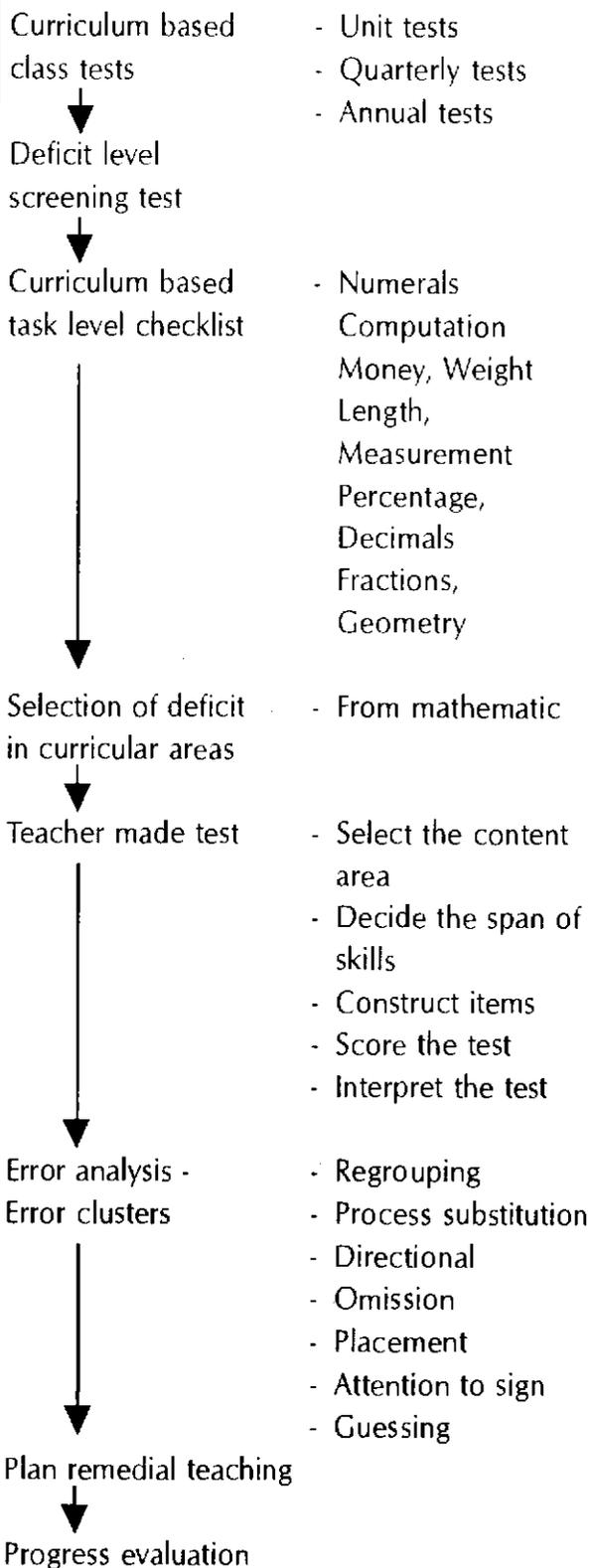
1. Numerals
2. Computation (Whole number)
3. Money
4. Time
5. Weight
6. Length
7. Fractions
8. Decimals
9. Percentage
10. Geometry

Use the task level curriculum including all curricular areas and find out the grade level and difficulty levels. This will lead to specific area assessment using teacher made tests.

Mathematical Assessment Devices :

- Grade Level Assessment Device (GLAD, Narayan J (1990) published by NIMH, Secunderabad)
- Tasks Level Curriculum (based on minimum levels of learning prepared by NCERT)
- Mathematical Achievement Analysis Matrix (MAAM, Thressiakutty A.T. (2000))

Mathematics Assessment and Programming for Remedial Instruction



Teacher made tests / Criterion - referenced tests

Teacher made tests are essential for individualizing mathematic instruction. These tests help the teacher to identify problems, determine level of understanding and monitor progress.

The following steps are useful in developing a test.

1. Select a hierarchy that includes the content area to be assessed. This can be selected from the mathematics text or a curriculum guide. The teacher can select one of the areas from the curricular areas - for example: Numerals
2. Decide on the span of the skills that needs to be evaluated.

The teacher should select which range of skills need to be evaluated from a wide range of skills. In deciding the span begin with items that are easy for the student and proceed to more difficult ones. For example: After selecting numerals, decide the class level. Example: Numerals second class.

3. Construct items for each skill within the range selected.

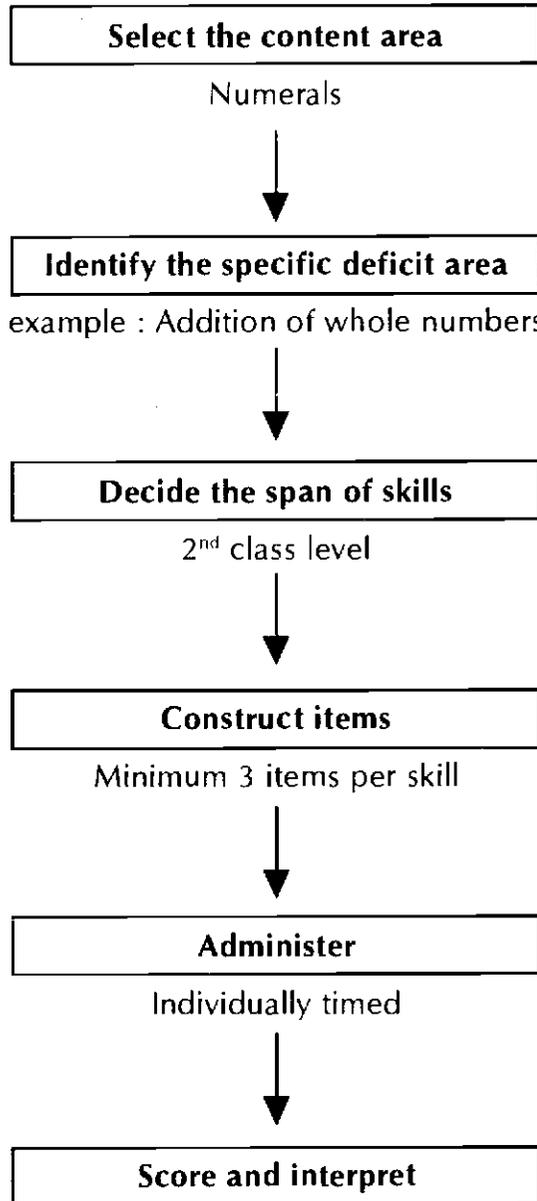
To maintain an adequate sample, it is a good practice to include a minimum of 3 items per skill - see example: If it is decided to test the concept of place value, construct the items to assess the concept of place value at 2nd class level.

4. Score the test and interpret the students performance. While scoring, consider the following:

- Underline each correct digit.
- Score numerals written in reverse form.
- Score a correct digit in correct place.

- Award full marks when the answer is correct, even when algorithms are not shown.
- Give credit for each digit done correctly.
- Give credit for any correct digit if the problem has not been completed.

Teacher made tests – How to construct



Encourage the student by pointing out his strengths. Consider his attempts.

Teacher made test - Sample

Content – Computation

Deficit area – Addition

Range of skill level – 2nd class

1. Single digit addition

| | | |
|-----|-----|-----|
| 4 | 5 | 8 |
| + 1 | + 0 | + 4 |
| — | — | — |
| — | — | — |

2. Two digit addition with single digit without regrouping

| | | |
|-----|-----|-----|
| 16 | 28 | 73 |
| + 3 | + 1 | + 5 |
| — | — | — |
| — | — | — |

3. Two digit addition with regrouping

| | | |
|------|------|------|
| 23 | 20 | 16 |
| + 44 | + 13 | + 20 |
| — | — | — |
| — | — | — |

4. Two digit to two digit with regrouping

| | | |
|------|------|------|
| 26 | 47 | 87 |
| + 58 | + 34 | + 69 |
| — | — | — |
| — | — | — |

Score : /12

Teaching Mathematics

Educators who have examined the mathematical deficits of students have suggested a number of initial teaching and remedial methods. The learning takes place at four levels.

Concrete level

The instruction starts at the concrete level where the students use three dimensional objects to learn the concepts and to solve computational problems. For example, to learn the concept of 6, the student is given concrete

objects and asked to count upto six and take six objects. The same way to add and subtract, to multiply and divide, concrete objects are given to the students to solve the computational problems. After successfully solving several problems at the concrete level, the student proceeds to the semiconcrete level.

Semiconcrete level

At this level, pictures and drawings are used to learn concepts and computational problems. For example, to solve the problem 5-2, the students are asked to read the problem, draw five lines and remove two from five and count the rest. After solving several problems at this level, the students start to work at the abstract level.

Abstract level

At this level, the students are not using concrete objects and drawings to solve computation problems. The students read the problem, compute mentally and write the answer. It is important that students should reach this level for success in maths.

Application level

As the students learn to compute at abstract level, see that they are related to day to day life. The students who have learning problems are to be instructed to use their ability to compute at abstract level for shopping, banking and other personal matters.

Primary level Mathematics – Readiness Skill

Before beginning with numbers, make sure the child is aware of premath concepts such as more-less, far-near, heavy-light, tall-short and so on.

The important points to be considered

- The content should be arranged in a sequential order, so that task analytic approach can be applied.
- To provide meaning to the concept, concrete materials should be used.
- There should be a gradual transition from concrete – semiconcrete – abstract level.
- Sufficient practice should be given to generalize the concept.
- Special emphasis should be given to apply the learned concepts in day-to-day life.

Before teaching number concepts, the teacher should assess the level of mathematical conceptual development in children. Piagetion theory provides information and methods for assessing the students ability in classifying, ordering, one to one correspondence and conservation.

Teaching precomputational skills

Counting

To begin meaningful counting teach counting by requesting to count the familiar objects in the class, at home and neighbourhood. Teach using concrete objects at this level.

Cardinal and ordinal numbers

Cardinal numbers answer the question "How many?" whereas the ordinal number indicates the position. Make students stand in a row. Ask who is standing first, second, third etc. After that ask "How many are standing in a row?"

Teaching numerals above 10

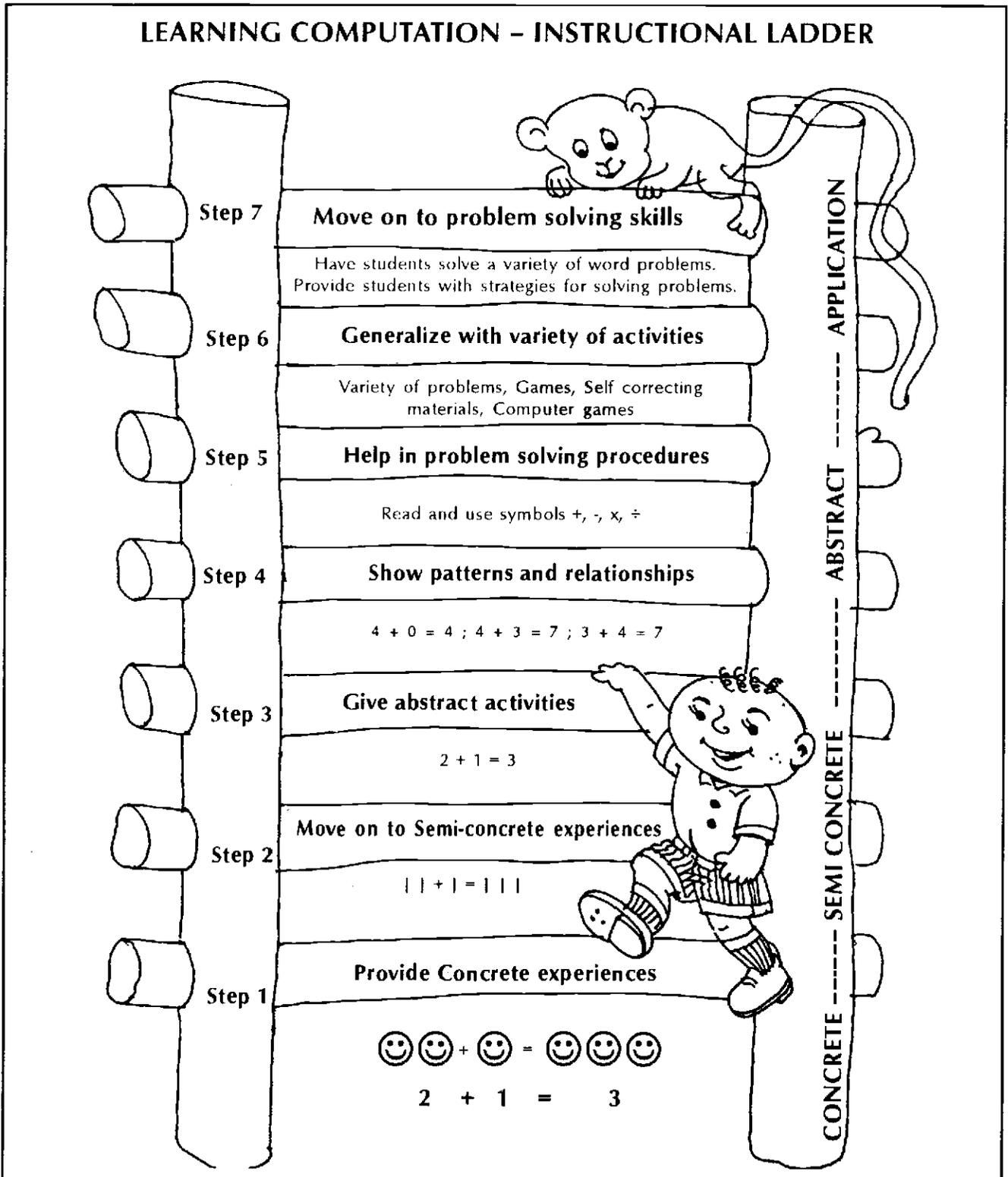
While teaching the numerals above 10, tell the students that the ending on 20, 30, 40 and so on equates 2 or 3 or 4 groups of 10s. While teaching the numbers above 10, first make students to count the blocks upto 10 as a group and continue through other numbers.

Writing number symbols

- Show the number written on a paper
- Allow him to trace
- Tell him to look at the model and write
- As a last step, let him write from memory

As the student writes the number, match the same with concrete objects.

The worksheets will help the students to master the math readiness skills.



Teaching Mathematics - Computation

Instruction of basic terms used in Mathematics is important to begin teaching computation

Addition 3
(Plus) + 2 Putting together

5

Subtraction 3
(Minus) - 2 Taken away

1

Multiplication 8
 x 5 Repeated addition

40

Division $40 \div 8 = 5$
40 - Dividend Equal distributions
8 - Divisor (repeated subtraction)
5 - Quotient

There are six essential areas to learn computational skills.

1. Comprehending the operation at concrete, semi concrete and abstract level.
2. Basic facts are to be memorized. These are the tools of computation (example - tables).
3. Through series of computation exercises of problems, place value concept can be introduced.
4. The student should understand the structures. Structures are the mathematical properties. Example: The commutative property of multiplication.

5. The concept of regrouping which is generally known as carrying and borrowing is also necessary in solving complex problems in computation.
6. Algorithms are the steps used in solving mathematic problems. It is also a pre-requisite in teaching computation.

Instructional Sequence

Pretest

- concrete level teaching
- semi concrete level
- abstract level
- post test
- application level

Instructional Procedures

1. **Select the appropriate lesson in advance**
 - The selected lesson should have a connection to the previous lesson.
 - The lesson should target a skill.
 - The teacher should be clear about the reason for teaching the selected skill.
2. **Describing and demonstrating the skill:**

The teacher selects few problems to demonstrate computation. While demonstrating how to compute, the teacher asks and answers questions aloud. As the teacher verbalizes his/her thoughts, the students understand the thought process. When the teacher arrives at the answer, he/she tells the students to write the answer. For generalization, the teacher gives more similar questions and demonstrates by describing.
3. **Practising with guidance :** Guided practice provides the teacher with the opportunity to instruct and support

students as they move towards independently solving problems on their work sheets. The teacher's role is to prompt and facilitate students thought process. Instead of demonstrating, the teacher asks questions and provides clues to guide the student towards success. The teacher's role is to step back, monitor the student's work and help with clues if necessary.

4. **Practices independently** : At this stage, the teacher can determine whether the student is able to do the work independently. The students are reminded the previously learned skill and techniques to solve the problem independently without assistance.
5. **Practice for problem solving**: At this stage, the teacher uses a graduated sequence of word problems to teach the students the thought process involved in solving problem.
6. **Feed back**: The teacher uses a progress chart to note the scores of each student. Based on this the teacher recognizes the progress of each student and gives appropriate reinforcement.

Teaching Mathematic problem solving

Tips for teachers

- Let the student feel the need for problem solving.
- Create situations in daily life problem solving.
- Write the problems in a simple manner.
- Help the student to read and understand if needed.
- Ask the student to modify and write it in his / her own way.

- Let the student verbalize the process.
- Present adequate similar problems to work out.

The teacher should not

- Give clue words every time to signal an operation
- Jump into conclusion with prejudice that the student makes mistakes always.
- Assume that the student will automatically learn the computation. It will not bring result.
- Fail to understand that problem solving is the important aspect for daily living.
- Present problems in a haphazard manner.

How to promote positive attitude towards Mathematic

- Involve students in setting goals and objectives to learn mathematics.
- Simplify the methods so that students encounter success. Prepare a feed back chart to map the success.
- Discuss the relevance of mathematic problem solving in daily life.
- Point out the strengths of students in mathematics.
- Give proper reinforcement and map the mathematic classes lively with appropriate learning materials.
- Guide the parents and give tips to motivate the children towards mathematics.

For persons with visual impairment

- Precede all instructions by the physical manipulation of objects by the child. Start with physical manipulation in conjunction

with oral instruction.

- Narrate each step after physical manipulations.
- Use textured materials such as sand paper, cloth, sand trays, magnetic boards etc.
- Integrate new learning with old and have control over pacing to slow down or to go faster.
- Provide verbal prompting and develop self monitoring.

For students with hearing impairment

1. Oral instructions should accompany with concrete manipulations or mimed instructions.
2. Let the student 'describe' what they understood.
3. Provide visual summary of each step to make mental images and give opportunity to reproduce these images.
4. Try a nonverbal lesson.

**PRIMARY LEVEL MATHEMATICS
TASK LEVEL CURRICULUM**

| S.No. | Tasks | Classes | | | | |
|-------|---|---------|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| | Curricular area : Numerals | | | | | |
| 1. | Recognizes numerals 1 to 100 | 1 | | | | |
| 2. | Reads and writes numerals 100 to 1000. | | | 3 | | |
| 3. | Reads and writes numbers - 1000 to 10,000. | | | | 4 | |
| 4. | Reads and writes 10,000 to 1,00,00,000. | | | | | 5 |
| 5. | Expands place value of 2 digits. (10-20). | 1 | | | | |
| 6. | Expands place value of 2 digits (10-99). | | 2 | | | |
| 7. | Expands place value of 3 digits (100-999). | | | 3 | | |
| 8. | Expands place value of 4 digits (1000-9999). | | | | 4 | |
| 9. | Expands place value of 5 and 6 digits. | | | | | 5 |
| 10. | Arranges numbers in descending and ascending order 1 to 100. | 1 | | | | |
| 11. | Arranges numbers descending and ascending order 100 to 1000. | | | 3 | | |
| 12. | Arranges numbers descending and ascending order 1000 to 10,000. | | | | 4 | |
| 13. | Arranges numbers descending and ascending order 10,000 to 9,99,999. | | | | | 5 |
| 14. | Compares less than, more than from 1 to 100. | 1 | | | | |
| 15. | Compares numbers from 100-1000 using symbols: <, >, = | | | 3 | | |
| 16. | Compares numbers from 1000 to 10,000 using signs <, >, = | | | | 4 | |
| 17. | Compares numbers 10,000 to 9,99,999 using signs <, >, = | | | | | 5 |
| 18. | Identifies numerals that come before/after/between any numerals from 1 to 100. | | 2 | | | |
| 19. | Identifies numerals that come before/after/between any numerals from 100 to 1000. | | | 3 | | |

Based on NCERT Primary Level Curriculum.. Minimum level of learning

| S.No. | Tasks | Classes | | | | |
|-------|--|---------|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| | Curricular area : Numerals | | | | | |
| 20. | Identifies numerals that come before/after/between any numerals from 1000 to 10,000. | | | | 4 | |
| 21. | Identifies numerals that come before/after/between any numerals from 10,000 to 1,00,000. | | | | | 5 |
| 22. | Makes sets of 2s, 5s, 10s upto 100. | | 2 | | | |
| 23. | Identifies even and odd numbers. | | | 3 | | |
| 24. | Calculates HCF of 2 numbers (within 100). | | | | | 5 |
| 25. | Calculates LCM of 2 to 3 numbers each within 10. | | | | | 5 |
| | Curricular area: Computation | | | | | |
| 1. | Adds numbers, sum not exceeding 0 to 18. | 1 | | | | |
| 2. | Add 2 digit numbers without and with carrying upto 99. | | 2 | | | |
| 3. | Adds 2 to 3 digit numbers without and with carrying upto 999. | | | 3 | | |
| 4. | Adds 2 to 3, 4 digit numbers with carrying and not exceeding 9,999. | | | | 4 | |
| 5. | Adds 2 to 4, 5 and 6 digit numbers with sum not exceeding 9,99,999. | | | | | 5 |
| 6. | Subtracts and finds the difference between 2 numbers (0 – 18). | 1 | | | | |
| 7. | Subtracts 2 digit numbers without and with borrowing. | | 2 | | | |
| 8. | Subtracts 3 digit numbers with borrowing. | | | 3 | | |
| 9. | Subtracts four digits numbers with borrowing. | | | | 4 | |
| 10. | Subtracts five and six digit numbers. | | | | | 5 |
| 11. | Solves daily life problems related to subtraction. | | | | | 5 |
| 12. | Adds one digit numbers mentally. | 1 | | | | |
| 13. | Adds 2 digit numbers mentally – 0-18. | | 2 | | | |
| 14. | Subtracts numbers mentally within 18. | | 2 | | | |

| S.No. | Tasks | Classes | | | | |
|-------------------------------|---|---------|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| | Curricular area: Computation | | | | | |
| 15. | Solves one step problem mentally involving +, - no carrying and borrowing within 50. | | | 3 | | |
| 16. | Multiplies single digit number. | | 2 | | | |
| 17. | Comprehends and uses the symbols +, -, x, ÷ | | 2 | | | |
| 18. | Tells and writes multiplication tables 2-10. | | | 3 | | |
| 19. | Multiplies 2 and 3 digit numbers with single digit with carrying and product within 999. | | | 3 | | |
| 20. | Divides a 3-digit number by a single digit number without borrowing and remainder. | | 2 | | | |
| 21. | Divides a number upto 3 digits by a number not exceeding 10 with borrowing and with remainder. | | | | 4 | |
| 22. | Solves 1 to 2 steps of daily life problems involving +, -, x, ÷ at any stage in the operations. | | | | | 5 |
| 23. | Finds the average cost, height, attendance, etc. | | | | | 5 |
| 24. | Solves one step of density problems of multiplication and division using skills by using multiplication tables. | | | 3 | | |
| Curricular area: Money | | | | | | |
| 1. | Recognizes coins and currency notes of different denomination. | 1 | | | | |
| 2. | Makes any value of upto Rs.1 by using various collection of coins. | | 2 | | | |
| 3. | Solves mentally one step daily life problems involving whole rupees with Rs.50. | | | 3 | | |
| 4. | Solves simple money problems using any of 2 operations +, -, x, ÷ | | | | 4 | |
| 5. | Solves simple problems of profit and loss. | | | | | 5 |
| 6. | Prepare bills giving the rates and quantity upto 5 items. | | | | | 5 |
| 7. | Solves simple problems involving simple interest. | | | | | 5 |
| 8. | Solves mentally one step daily life money problems involving rupees and paise (within Rs.100). | | | | | 5 |

| S.No. | Tasks | Classes | | | | |
|--------------------------------|--|---------|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| | Curricular area – Length | | | | | |
| 1. | Uses non-standard units to measure length. | | 2 | | | |
| 2. | Comprehends the relationship between mts. and cms. | | | 3 | | |
| 3. | Comprehends relationship between kms. and mts. | | | | 4 | |
| 4. | Adds 2 lengths of mts. and cms. without conversion. | | | 3 | | |
| 5. | Converts kms. to mts. | | | | 4 | |
| 6. | Measures straight lines/curves in objects using mts. and cms. | | | | | 5 |
| 7. | Finds difference between 2 lengths of mts. and cms. without conversion. | | | 3 | | |
| 8. | Converts mts. to kms. | | | | 4 | |
| 9. | Solves one step problems relating to standard units involving conversion and only one operations by single digit. | | | | 4 | |
| 10. | Solves one step problems mentally involving kms. and mts. or mts. and cms. with no number exceeding 100, multiplication and division by single digit only. | | | | | 5 |
| Curricular area: Weight | | | | | | |
| 1. | Uses non-standard unit of mass/ weight such as stones, beads, etc. to weigh objects in immediate environment. | | 2 | | | |
| 2. | Comprehends the relationship between the standard units of kgs. and gms. | | | 3 | | |
| 3. | Converts kgs. into gms. and vice-versa. | | | | 4 | |
| 4. | Finds the difference of two objects when the mass of each object is expressed in kgs. and gms. | | | 3 | | |
| 5. | Solves simple daily life problems involving upto 2 of the 4 operations with conversion. | | | | | 5 |
| | | | | | | |

| S.No. | Tasks | Classes | | | | |
|-------|--|---------|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| | Curricular area: Weight | | | | | |
| 6. | Identifies the different block measures 50gms., 100gms., 200gms., 500gms., 1kg., 2kgs. | | | 3 | | |
| 7. | Solves simple one step problems (single digit) including conversion. | | | | 4 | |
| 8. | Solves simple one step daily life problem mentally involving litres and ml.lts. with no number exceeding 100 and no conversion. | | | | | 5 |
| | Curricular area: Capacity | | | | | |
| 1. | Uses non-standard units (such as cup, tumbler, bottle). | | 2 | | | |
| 2. | Comprehends the relationship between litre and milli litre. | | | 3 | | |
| 3. | Converts milli litre to litres and vice-versa. | | | | 4 | |
| 4. | Solves simple daily life problems involving upto 2 of the 4 operations with conversion. | | | | | 5 |
| 5. | Adds and writes the sum expressed in litres and milli litres without conversion. | | | 3 | | |
| 6. | Finds the difference between two quantities of liquids when expressed in litres and milli litres without conversion. | | | 3 | | |
| 7. | Solves simple one step daily life problem mentally involving litres and milli litres with no number exceeding 50 and no conversion, carrying or borrowing. | | | | 4 | |
| 8. | Calculates surface area of rectangular regions using non-standard units. | | | 3 | | |
| 9. | Measures in non-standard and standard units of any surfaces or objects of rectangular shape. | | | | 4 | |
| 10. | Solves simple daily life problems relating to area and perimeter of a rectangle using respective formulae. | | | | | 5 |

| S.No. | Tasks | Classes | | | | |
|-------|--|---------|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| | Curricular area: Time | | | | | |
| 1. | Names the days of week in sequence. | 1 | | | | |
| 2. | Comprehends the relationship between days weeks, months and years. | | 2 | | | |
| 3. | Reads the time on a clock by hour, $\frac{1}{2}$ hour, $\frac{1}{4}$ hours and 5 minutes intervals. | | | 3 | | |
| 4. | Uses a calendar. | | | | 4 | |
| 5. | Calculates the duration of an activity/event across am/pm. | | | | 4 | |
| 6. | Adds hours and minutes without conversion. | | | 3 | | |
| 7. | Reads a clock in hours and minutes. | | | | 4 | |
| 8. | Converts hours into minutes with conversion. | | | | 4 | |
| 9. | Solves simple daily life problems relating to time involving weeks, days, hours and minutes. | | | | | 5 |
| | Curricular area: Fractions | | | | | |
| 1. | Comprehends the meaning of proper fractional numbers as parts of regions with the numerator and denominator not exceeding 10. | | | 3 | | |
| 2. | Comprehends equivalent fractions of a given fraction ($\frac{1}{2} = \frac{2}{4} = \frac{4}{8}$) | | | | 4 | |
| 3. | Arranges in ascending and descending sequence proper fractions with same numerals or same denominators. | | | | 4 | |
| 4. | Solves daily life problems involving comparing, addition and subtraction of fractions and mixed numbers with denominator not exceeding 10. | | | | | 5 |
| 5. | Adds and subtracts simple proper fraction with same denominators. | | | | 4 | |
| 6. | Multiplies and divides 2 fractions with denominators upto 10 and expresses the answer in its lowest terms. | | | | | 5 |
| 7. | Converts fractions and mixed numbers to decimals and decimals to fractions and mixed numbers with value upto 2 decimal places | | | | 4 | |

| S.No. | Tasks | Classes | | | | |
|------------------------------------|---|---------|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| | Curricular area: Fractions | | | | | |
| 8. | Adds and subtracts decimals upto 3 decimal places. | | | | | 5 |
| 9. | Multiplies and divides a decimal number upto 3 decimal places by a single digit number | | | | | 5 |
| 10. | Solves daily life problems involving length, weight, capacity involving comparing, +, -, x, ÷ of decimal upto 3 places. | | | | | 5 |
| Curricular area: Percentage | | | | | | |
| 1. | Converts fractions and decimals into percentage and percentage into fraction in lowest terms and decimal | | | | | 5 |
| 2. | Finds required percentage of a given number or measure | | | | | 5 |
| 3. | Converts simple daily life problems involving application of percentage | | | | | 5 |
| 4. | Converts (mentally) frequently used percentages into fractions and vice versa, eg. 50%=1/2, 25%=1/4. | | | | | 5 |
| Curricular area: Geometry | | | | | | |
| 1. | Recognizes the four basic shapes (○ □ △ ▭) | 1 | | | | |
| 2. | Draws plain shapes using objects having straight/curved lines. | | 2 | | | |
| 3. | Tells the properties of basic shapes. | | | 3 | | |
| 4. | Classifies angles as right angle, obtuse angle, acute angle. | | | | 4 | |
| 5. | Draws angle of different measurement with a protractor. | | | | 4 | |
| 6. | Classifies angles | | | | 4 | |
| 7. | Draws a circle of a given radius with use of a compass and scale. | | | | | 5 |
| 8. | Comprehends various terms that relate to a circle and their relationships. | | | | | 5 |

Indications of problems in doing Mathematics

Disturbance of spatial relationships
Poor sense of body image
Disturbance of visual motor and visual perception abilities
Language and reading problems
Poor concepts of direction and time
Memory problems
Lack of mathematics learning strategies
Mathematics anxiety

I. Problems in mathematics readiness skills

As discussed earlier, the mathematics readiness skills are the ability for

- matching
- ordering and seriation
- one to one correspondence and
- conservation

When the children have deficits in the above areas, they face problems in achieving mathematics readiness skills. The same was revealed while screening the students using the screening checklist. The deficit areas identified at premath and class I levels are:

- Differentiating concepts, same, different, bigger, smaller, etc.
- Identifying the shapes
- Counting numbers in a sequential order
- Meaningful counting and inversions of numerals
- Arranging in ascending and descending order
- Understanding the concept of greater than and smaller than

The remedial strategies are discussed in the following pages.

Principles of instruction for students with mathematics problems

Develop readiness skills
Teach concrete to abstract
Provide opportunities for practice
Generalize the concepts in daily life
Consider the strengths
Build a solid foundation for mathematics
Provide balanced programmes
Use computers

INDIVIDUALIZED REMEDIAL INSTRUCTION PROGRAMME - Sample

1. **Skill :** Counting the objects and writing the numerals not exceeding 9.
2. **Grade :** Class I
3. **Text Book - Class – I** (NCERT Book)
4. **Assessment method**

Use math readiness skills, assessment worksheet given in the next page.

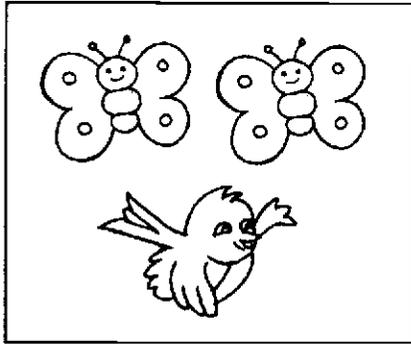
| Current level of functioning | 1 | 2 | 3 | Remarks |
|---|---|---|--|---------------|
| Skills | Mastered Maintenance Strategies needed | Being Taught Remedial teaching | Yet to be taught Developmental strategies | |
| 1. Groups the same objects/pictures | ✓ | | | Use worksheet |
| 2. Separates the different object from a group | ✓ | | | |
| 3. Identifies the biggest object | ✓ | | | |
| 4. Identifies the smallest object | ✓ | | | |
| 5. Counts from 1 to 20 | ✓ | | | |
| 6. Counts objects (upto 9) and writes the number | | ✓ Remedial teaching needed | | |
| 7. Gives the requested number of objects from a group | | ✓ Remedial teaching needed | | |
| 8. Tell the number of fingers without counting (when shown) | | ✓ Remedial teaching needed | | |



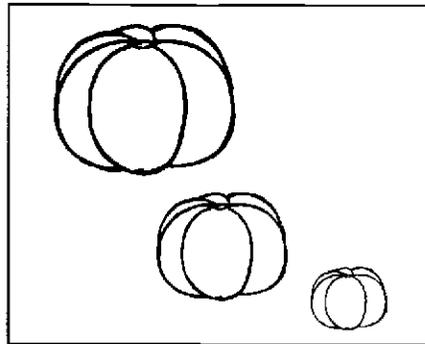
Name of the Student :

Class :

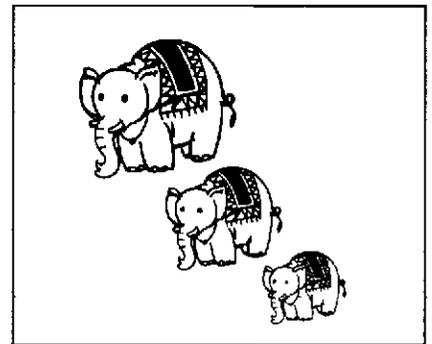
Mathematics Readiness Skills Assessment Format



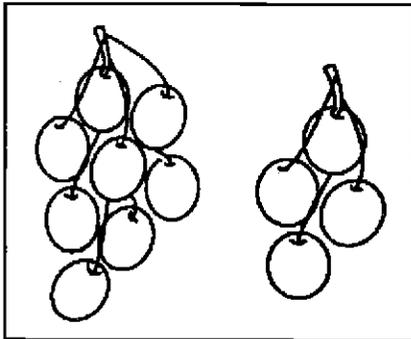
Which is **different**



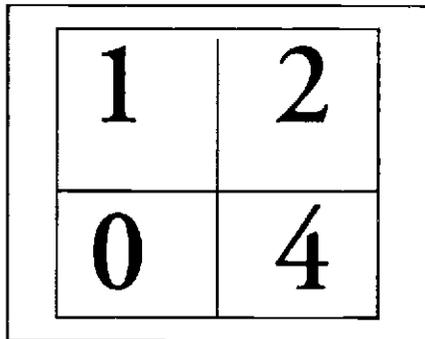
Which is the **smallest**



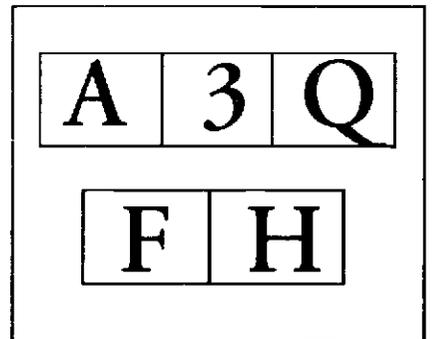
Which is the **biggest**



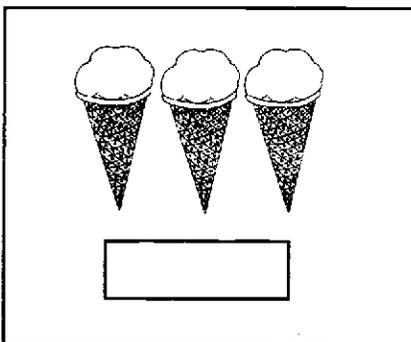
Which is **more** Which is **less**



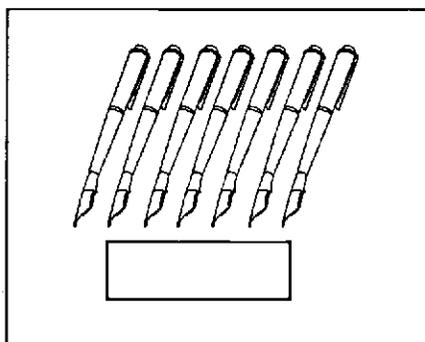
Which is **zero**



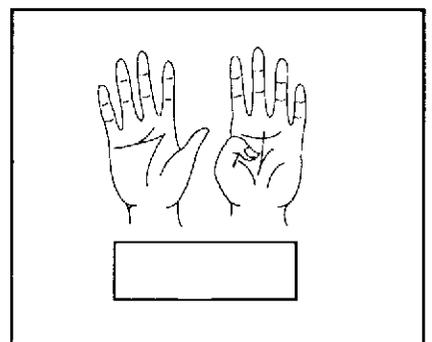
Which is a **number**



Count & write



Count & write



Write / Tell how many without counting

Student underlines/circles the pictures when asked.

Objectives :

- To assess the mathematic readiness skills.
- To enable the student comprehend basic vocabulary used in primary mathematics.

| Remedial teaching | Remedial strategies |
|--|---|
| Errors | |
| <p>1. Inverts the numerals such as 3 7 9</p> <p>This is a perceptual motor problem.</p> | <p>1. Concepts and directions :</p> <ul style="list-style-type: none"> • Present with pencil, paper and models of basic shapes. • Ask the student to identify by pointing, drawing lines etc. Top, middle, bottom, left edge, right edge of the paper. • 100% accuracy in the concepts is necessary before formal writing instruction begins. <p>2. Introduce basic strokes :</p> <ul style="list-style-type: none"> • Make models of basic strokes related to numerals. • Let the student trace and copy these strokes. / C) _ — O • Mastering these strokes are necessary for writing numerals. <p>3. Fine motor coordination :</p> <ul style="list-style-type: none"> • Observe the students fine motor coordination during his daily activities – buttoning, zipping, pouring etc. <p>Eye hand coordination :</p> <ul style="list-style-type: none"> • Ask the student to trace/ to follow the maze without touching the exterior lines. <div style="text-align: center;">  </div> <ul style="list-style-type: none"> • Observe the student while writing the numerals 0-9, how the numerals are made • Backward circles are used in 0, 6, 8. All vertical and slant lines start from top to bottom. All horizontal lines start from left to right. The curves in 2, 3 and 5 make clockwise direction. |

Write the numerals in big size to copy.

- Tell the student to check the directions.
- Write in very big size and ask them to write.

2. Counts faster without understanding the concept of one to one correspondence

Corrective strategies

1. Make columns

- Write 1 to 9 each numeral in each column
- Keep objects to match the objects in each column.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|  |  |  |  |  |  |  |  |  |  |

3. The numeral and the number of objects do not match

2. Mark required number of lines



Give more exercises

3. Show 3 fingers and ask how many ?

Without counting, the student should answer.

- Show 5 fingers, how many ?
- Show 7 fingers, how many ?

4. Tell the student to show 2 fingers on his hands.

- Tell to show 6 fingers on hands. Continue the exercise with various objects and activities.

Give the assessment worksheet again for review, score and select other remedial strategies/next higher level skill.

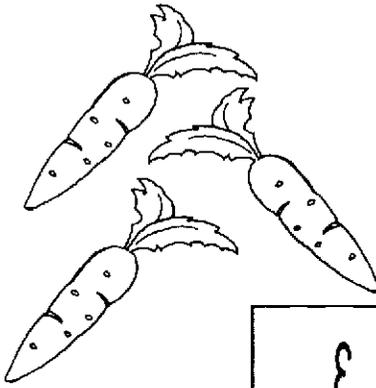
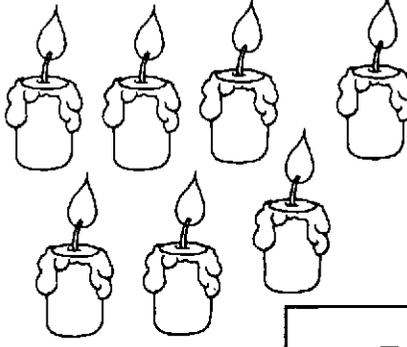
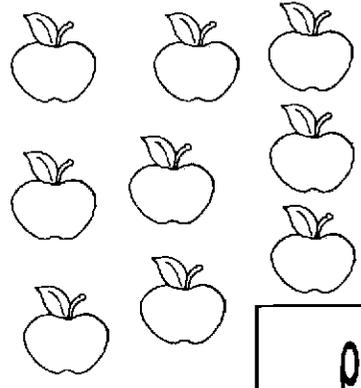


Name of the Student :

Class :

ERROR ANALYSIS AND REMEDIAL TEACHING

Count and Write :

| | | |
|--|--|--|
|  <div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; text-align: center; line-height: 40px;">8</div> |  <div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; text-align: center; line-height: 40px;">7</div> |  <div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; text-align: center; line-height: 40px;">e</div> |
|--|--|--|

Error analysis

| | | | |
|---|---|----|--|
| 8 | 7 | e | Inverts the numerals |
| 4 | 8 | 10 | Counts faster. The numeral does not match the number of objects. |
| 2 | 6 | 8 | Counts correctly but numbers are wrong |

These are the common errors the students with learning problems make during the pre-primary and class I level.

- Inverting while writing
- Problems in one to one correspondence
- Problems to match the numerals with correct number of objects.



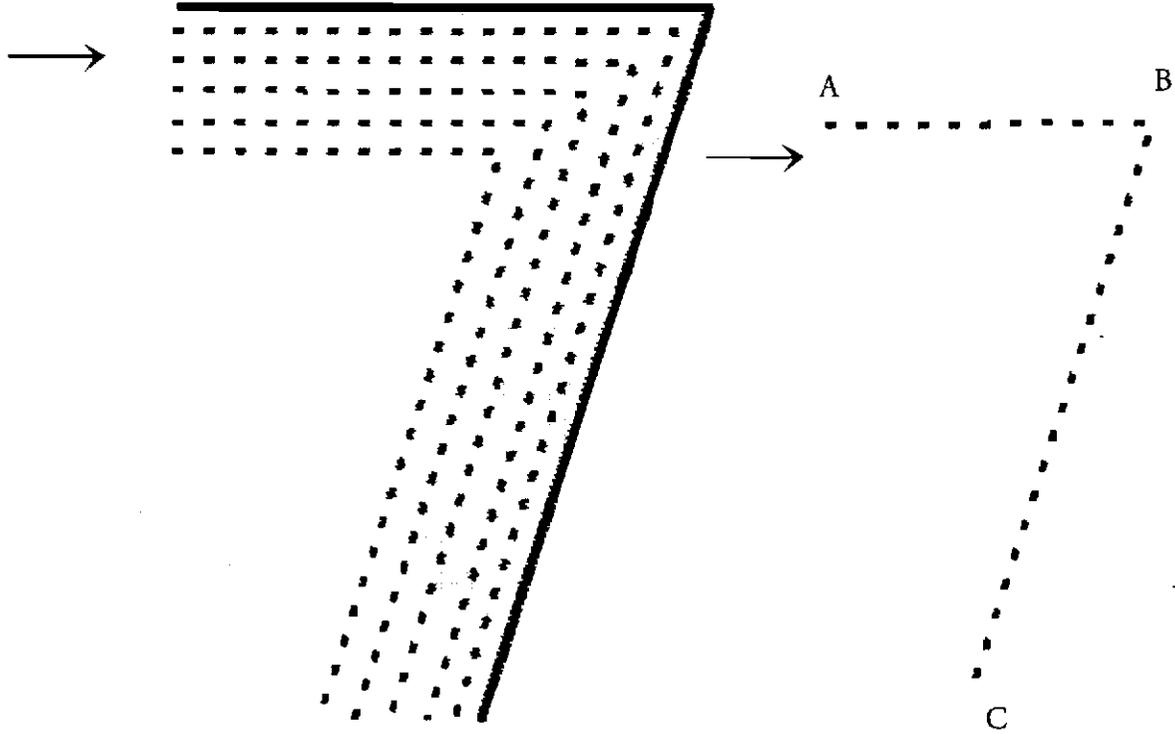
WORK SHEET

Name of the Student :

Class :

Correction of reversal of Numerals

Join the dots begin at A



Write Seven

| | | | | | |
|--|--|--|--|--|--|
| | | | | | |
| | | | | | |
| | | | | | |

Write number 7 in each column

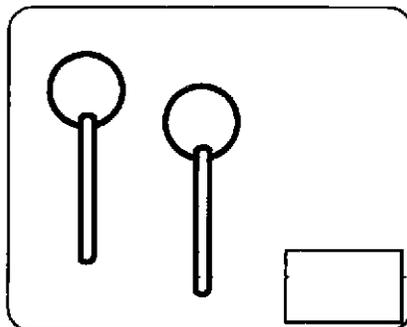
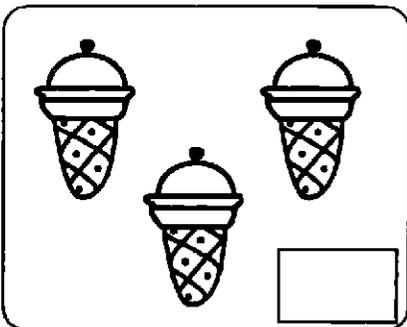
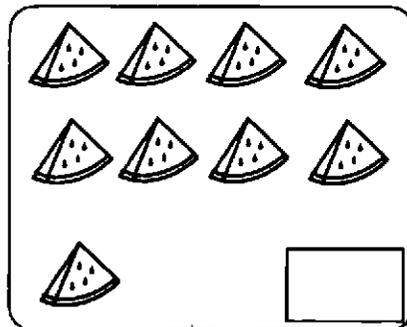
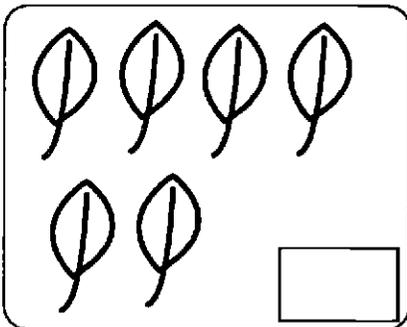
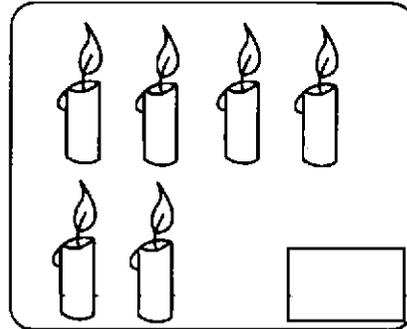
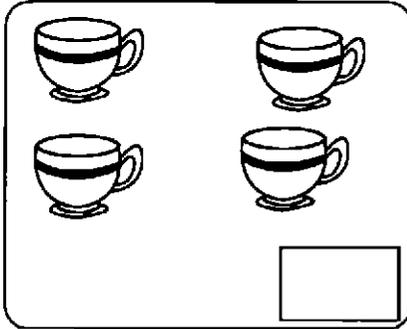
The same way worksheets can be prepared for 3 (ε), 9 (e), 6 (θ) etc.



Name of the Student :

Class :

COUNT AND WRITE



Objectives :

- To evaluate after teaching the skill to count the objects and writing the numerals not exceeding 9.
- To check the students whether they are able to write the numerals 7, 3, 9 correctly without inversion.

Additional Activities :

- The teacher may prepare worksheets as per the need of the students after evaluation.



Name of the Student :

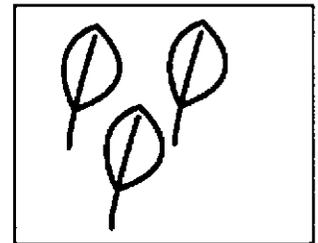
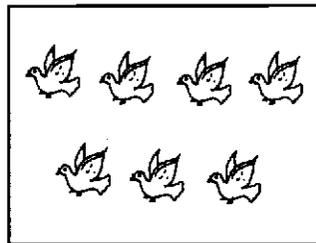
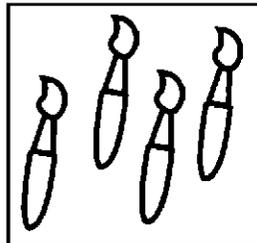
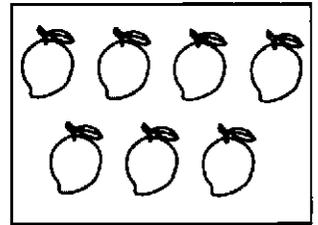
Class :

Deficit area

Remediation

1. One to one correspondence

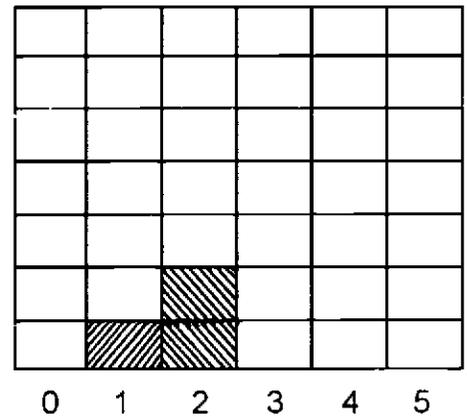
How many mangoes? _____



Which have 7 pictures

2. Graph

Shade as per the numbers given.



3. Ordering numbers in a sequence

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|----|

Write the missing number

| | | | | | | | | | |
|---|---|--|---|---|--|---|--|--|----|
| 1 | 2 | | 4 | 5 | | 7 | | | 10 |
|---|---|--|---|---|--|---|--|--|----|



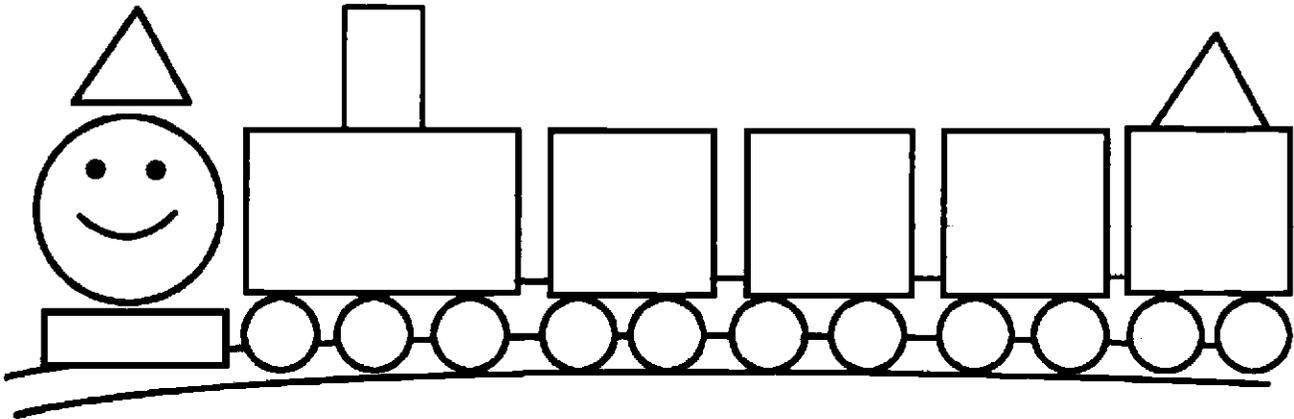
Name of the Student :

Class :

BASIC SHAPES

Readiness Skills – Class – I

Activity :



Count and write the number of various shapes seen in this picture

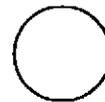
How many circles are there in the picture? _____

How many triangles are there in the picture? _____

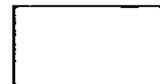
How many rectangles are there in the picture? _____

How many squares are there in the picture? _____

Colour the shapes with the given colour



Red



Blue



Yellow



Green

Objectives :

To enable the student :

- to identify basic shapes and name them.
- to discriminate various shapes seen in surroundings.
- to be familiar with the vocabulary.

The students can be provided with blocks, utensils and other materials with various shapes out of which they can build various things.



Name of the Student :

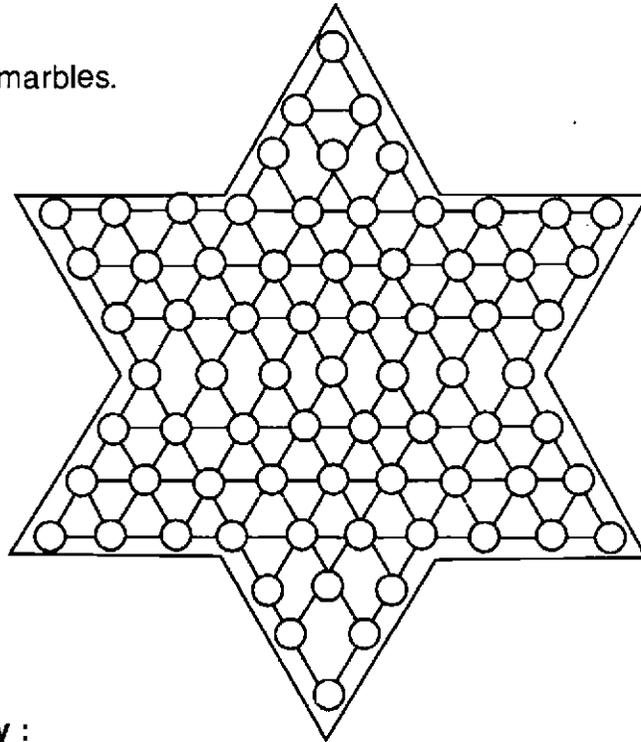
Class :

GROUPING AND MATCHING

Readiness Skills – Class – I

Material :

Chinese checkers with marbles.



Activity :

- Separate the marbles from the board and keep in 6 boxes.
- Give 2 colours to set on the board.
- Give 3 colours to set on the board.
- Give 4 colours to set on the board.
- Give 5 colours to set on the board.
- Give 6 colours to set on the board.
- Mix all the colours to set on the board.
- Request particular number of marbles to separate.

Give more similar activities to strengthen the above skills.

Objectives :

- To introduce the concept of matching and grouping by matching/ arranging coloured marbles.
- To introduce/check the concept of one-to-one correspondence by giving the required number of objects.



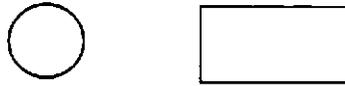
Name of the Student :

Class :

DISCRIMINATION OF CONCEPTS

Readiness Skills – Class – I

1. Which is a Rectangle ?



2. Which is longer ?



3. Which is taller ?



4. Which is lighter ?



5. Which is thicker ?



Objectives :

To enable the student

- to discriminate the concepts such as longer, shorter, taller, thicker, thinner, lighter, heavier etc.

Additional activities :

- Students can be asked to draw pictures and colour them to strengthen the concepts.
- The teacher can select the activities from the daily living / immediate environment.
Example : Ask who is taller among 2 students.
- Giving two books, each in one hand, ask which is heavier.
- Tell the students to compare trees and plants in the garden.

Remember

- *This concept is very important for them to learn the progressive arithmetic skills in computation, measurement, etc.*



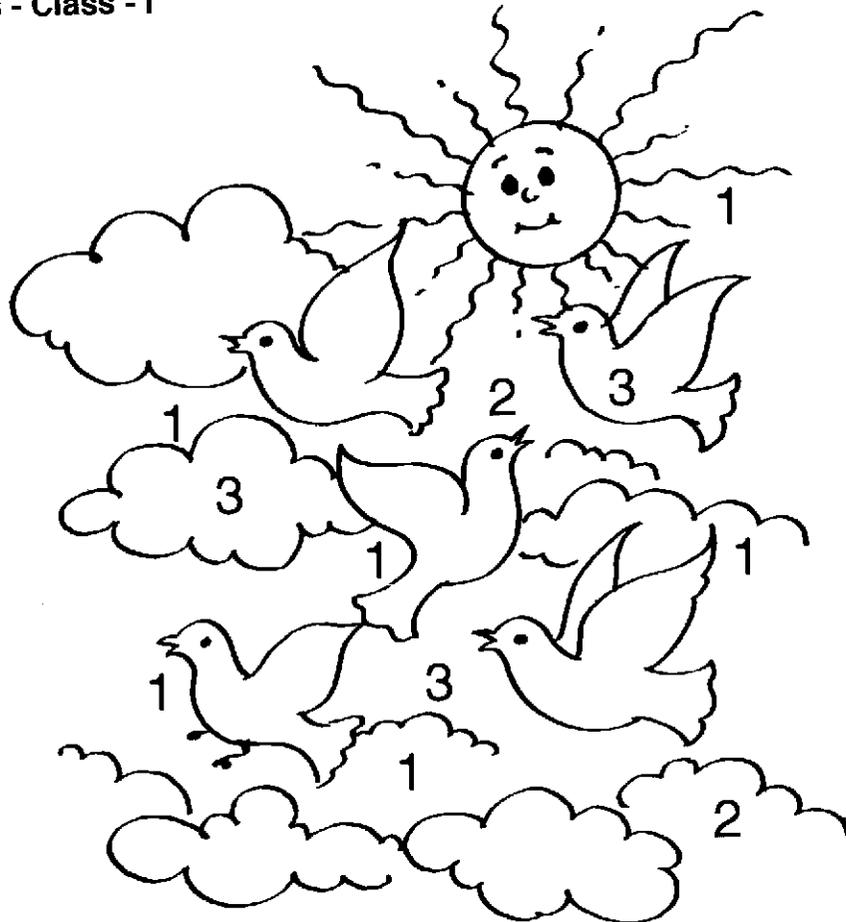
WORK SHEET

Name of the Student :

Class :

FIND THE HIDDEN BIRDS

Readiness Skills - Class - I



- Can you find and colour all the birds in the picture ?
- Circle all the 1's in the picture.
- Strike out all the 2's in the picture.
- Put a box around 3's in the picture.

Objective :

To enable the student

- to identify the required numbers.
- to improve perceptual and motor skills by colouring the figures in the jumble.

Additional activities :

- Make number cards, keep upside down and ask the student to pick up the required number. The student who picks up more numbers will be the winner.
Example : Pick up all the cards which have number 3 on it.



Name of the Student :

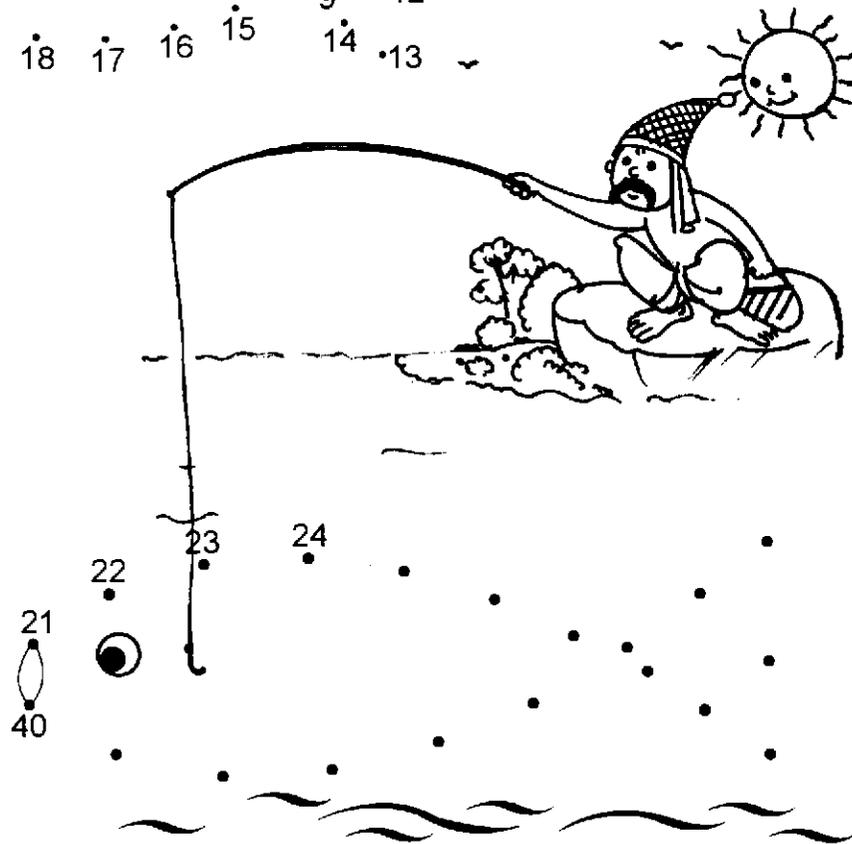
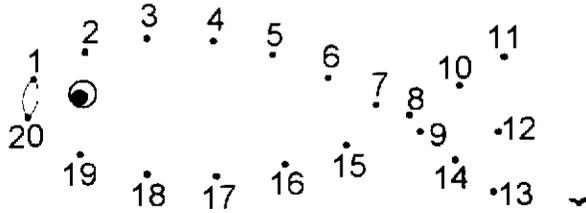
Class :

LET US GO FOR FISHING

Numerals - Class - I

- Join the dots, you will find a small fish... then colour it.
- Write the missing numbers from 21 to 40 and join dots - you will find a big fish.

Example :



Objectives :

To enable the student to

- improve eye 'hand coordination'
- fill the missing numbers.
- recognize numbers 1 to 40.
- read numbers.
- point to numbers when asked at random.



Name of the Student :

Class :

SMALLEST TO GREATEST

Smaller/greater/smallest/greatest – Class – I

Activity :

Write the following numbers in ascending order.

8, 98, 27, 58, 20, 39.

Write in the box from smallest to the greatest.

| | | | | | |
|--|--|--|--|--|--|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Use symbols : > <

27 is _____ 38

58 is _____ 8

39 is _____ 98

20 is _____ 39

_____ is the smallest number.

_____ is the biggest number.

Objectives :

To enable the student

- to arrange the numbers by comprehending the concept of smaller and greater.
- to discriminate between the symbols $<$ & $>$ and use it correctly.
- to apply the concept biggest & smallest in daily living situations.

Prepare similar worksheets and plan more activities to achieve the above objects.

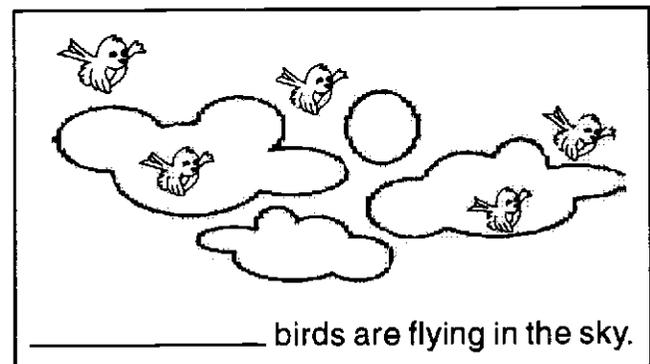
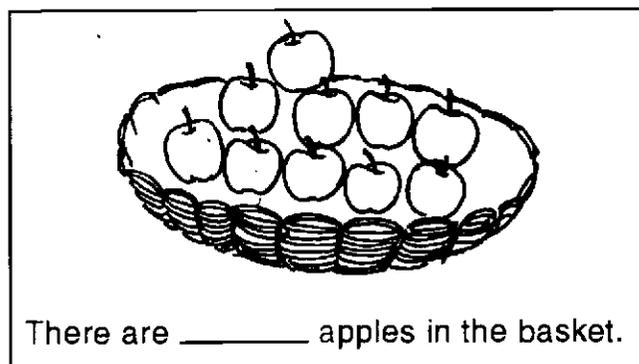
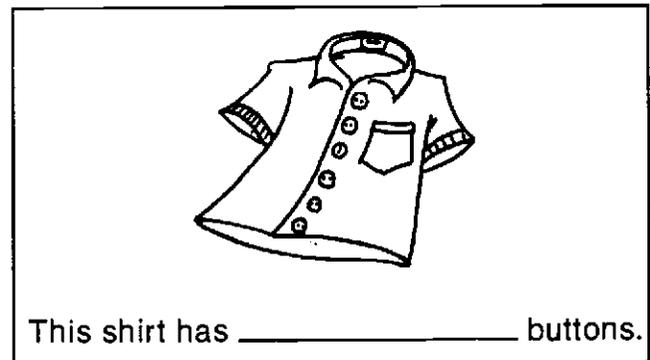
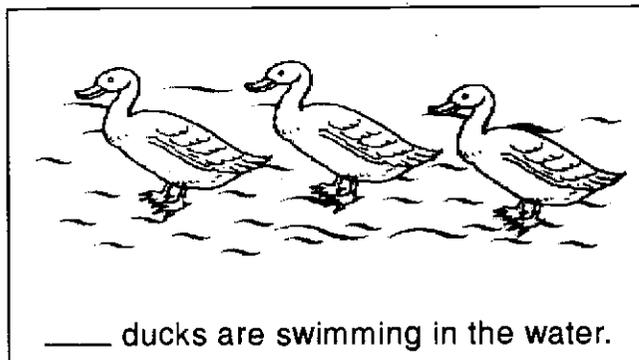
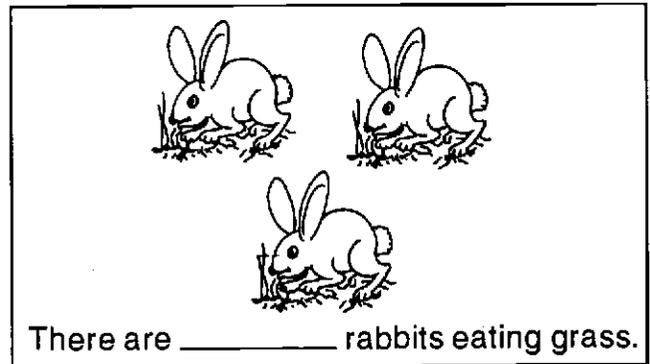
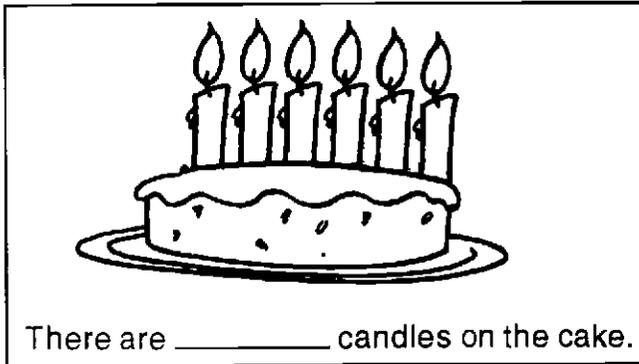


Name of the Student :

Class :

COUNT HOW MANY

Numerals – Class - I



Objective :

- To strengthen the number concept 1-10 and one to one correspondence while counting.
- The teacher can prepare number of similar creative worksheets to strengthen the concept.
- The basic number concept from 1-10 is very important to teach the higher level counting.



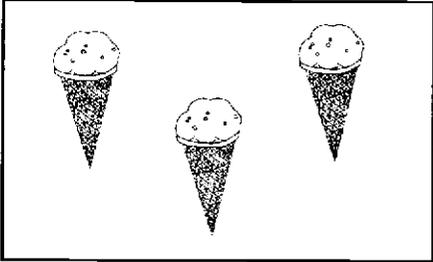
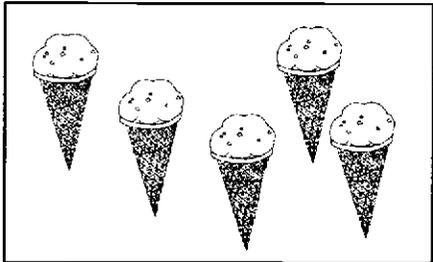
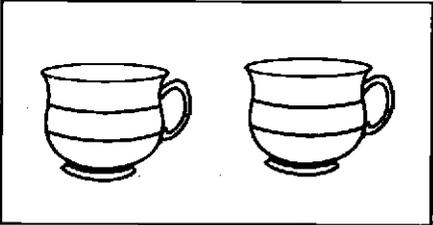
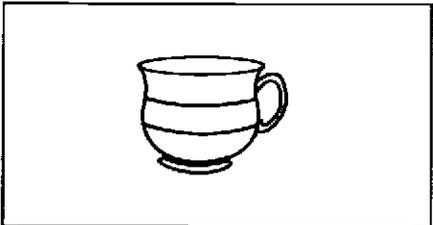
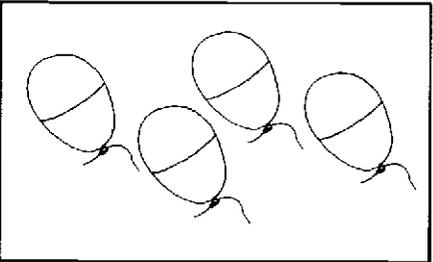
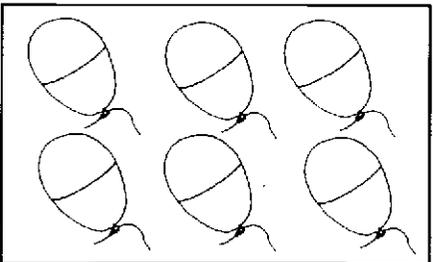
Name of the Student :

Class :

ADD A LITTLE CURVE

Mathematics Readiness Skills - Class - I

Put a smile on the face which has more objects and a frown on the one that has less. Follow the example.

| | | | |
|---|---|--|---|
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

Objective :

To enable the student

- to discriminate between more and less

Additional activities :

- Teach this concept in a concrete situation by providing various objects.
- Ask the student to select less objects in a given situation.
- Slowly introduce the concept of more than, less than, synchronizing with the number concept.
- Explain the difference between less than, more than, greater than, less than.
- Finally introduce the symbols greater than (>), less than (<).



Name of the Student :

Class :

DRAW A STAR

Geometrical Shapes - Class I and III

Let us join the numbers and draw a star.



Activity :

The student joins the numbers 1 to 20.

Name the picture _____.

How many numbers you joined ? _____.

How many triangles are there in the star ? _____.

The shape with five sides is called _____.

Colour each star with different colour.

Mark number 3, 15, 11, 8, 10.

Add more activities :

Make a star.

Play Chinese checkers.

Sing a song.

Objectives :

To enable the student

- to identify the numbers from 1 to 20 and complete a star.
- to identify various shapes
- to introduce related skills – singing, games, drawing, colouring, etc.

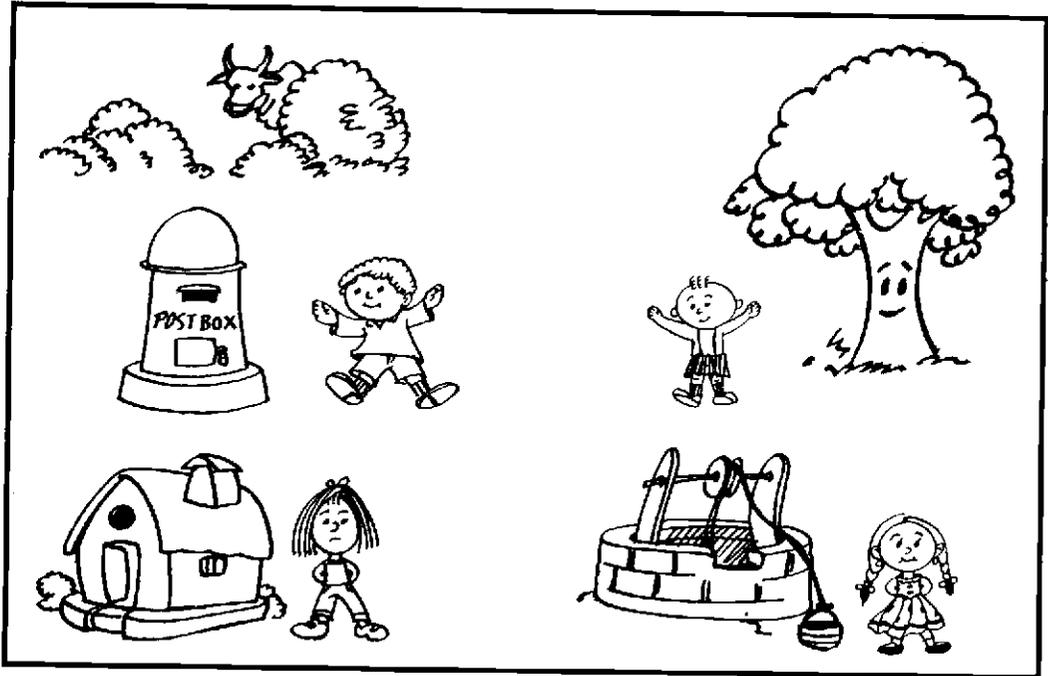


Name of the Student :

Class :

CONCEPT OF NEAR AND FAR

Readiness Skills - Class - I



Names :

Pinky

Candy

Jumbo

Jammy



Answer the following :

- 1) Who is near the well ? _____ (Candy / Pinky).
- 2) Jumbo is near the _____ (Post box / Tree).
- 3) _____ (Candy / Pinky) is near the hut.
- 4) Who is near the tree, Jumbo or Pinky ? _____
- 5) Who is far from the well, Candy or Jumbo ? _____

Objective :

To enable the student

- to comprehend the meaning of near and far.
- to apply the concept in daily situations.



WORK SHEET

Name of the Student :

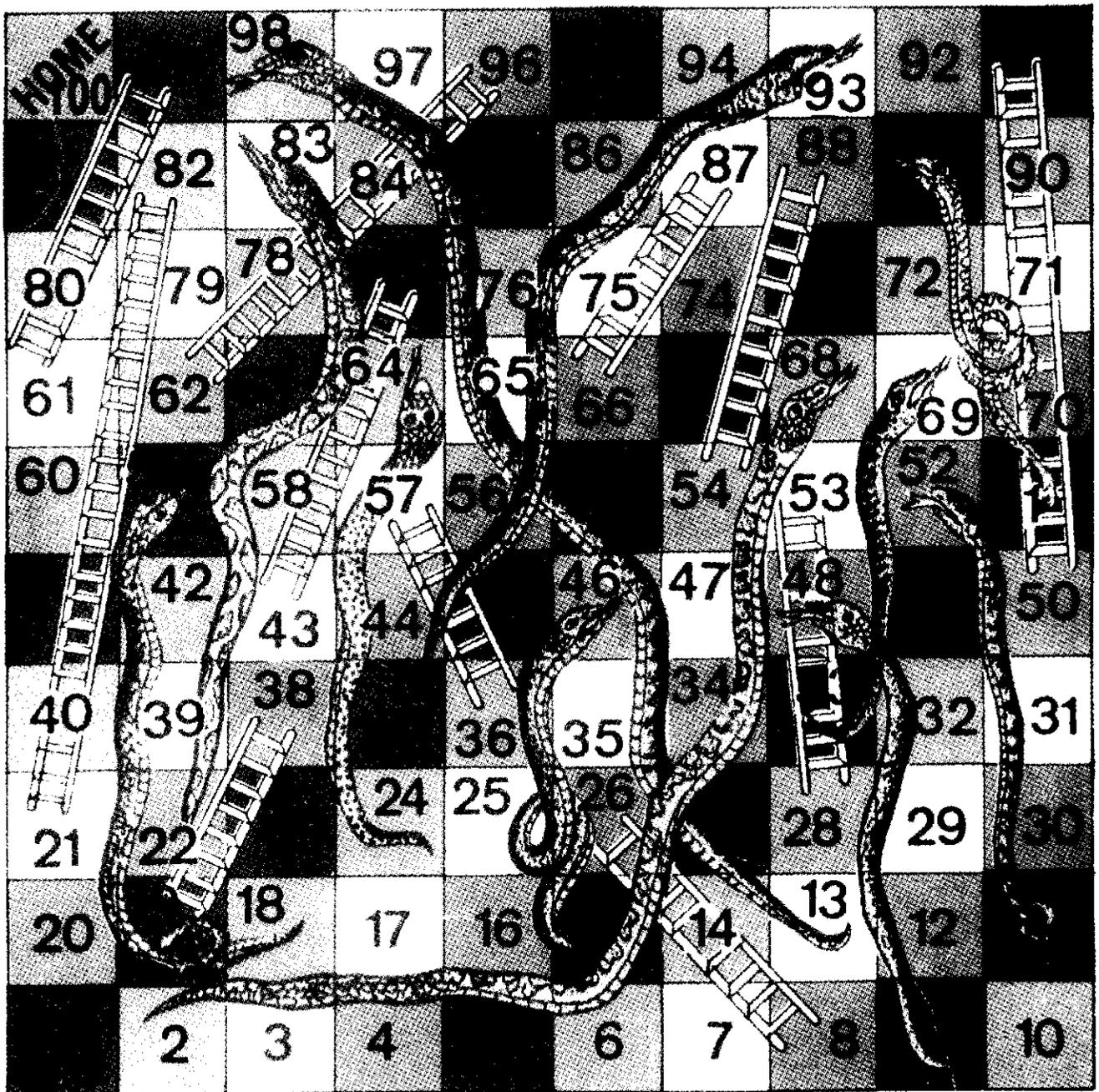
Class :

SNAKE AND LADDERS

Numerals (strengthening) – Class III

Objectives :

- to identify, read and write numbers from 1 to 100.
- to introduce backward counting – 100 to 1, counting by 2s, 5s, 10s.
- to introduce related skills such as leisure time, social skills.....



II. Difficulty in place value

Place value

Concept of place value is one of the major deficit area for the students with learning disabilities. A teacher made checklist would help to decide the current level of the student's performance in finding place value and expanding.

How to begin to teach place value

Tens & Ones : Teaching at concrete level

Materials :

Cups / sticks / straws / marbles etc.

Label the cups Tens and ones

- Count 10 sticks. 1, 2, 3,
- When it reaches 10, tie the ten sticks and keep the bundle in the cup labelled 'TENS'
- Count some more sticks. 1, 2, 3, 4
- Keep 4 sticks in the cup labelled ONES.
- Ask the student.
- How many 'TENS' are there in the TENS cups - One
- How many 'ONES' are there in the ONES cup - Four
- $10 + 4 = 14$
- $14 = 1 \text{ ten and } 4 \text{ ones}$

Repeat the exercise with various objects.

Every ten should be tied as a set of ten.

As the student learns upto 99 and expands in tens and ones using concrete objects, start teaching at semiconcrete level.

Semiconcrete level

- Write a 2 digit number. For example 16 and ask the student to read the number.
- Ask the student to draw 16 circles / squares / lines.
- Let the student count up to 10 and mark and write below 1 ten.

////////// //
1 ten 6 ones

- The student counts the rest of lines - 6 and writes below 6 ones.
- $1 \text{ ten and } 6 \text{ ones} = 16$

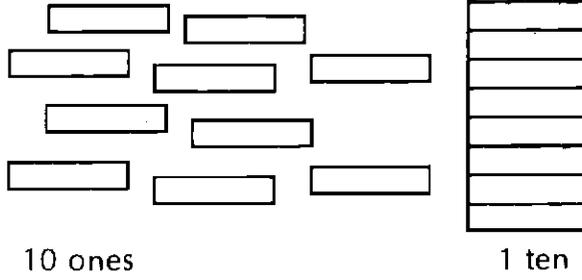
Repeat the activities till the student learns the concept of place value at 2 digits level - 99.

Deficit areas

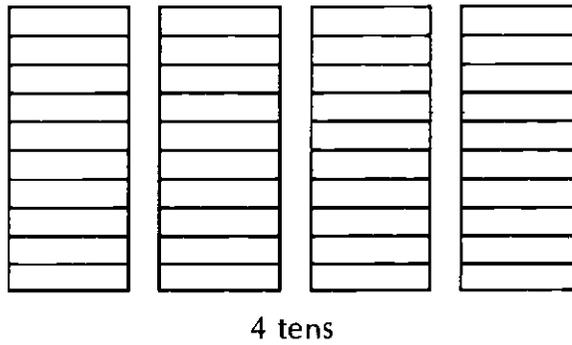
1. Counting tens

Remediation

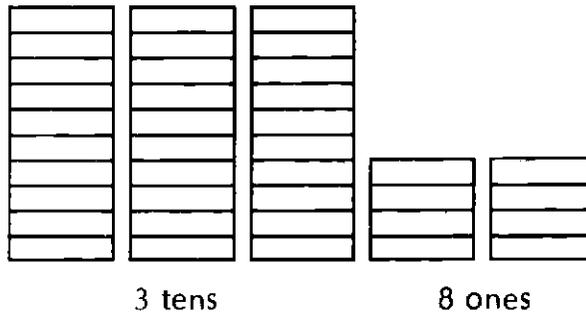
10 ones is 1 ten



2. Count and write

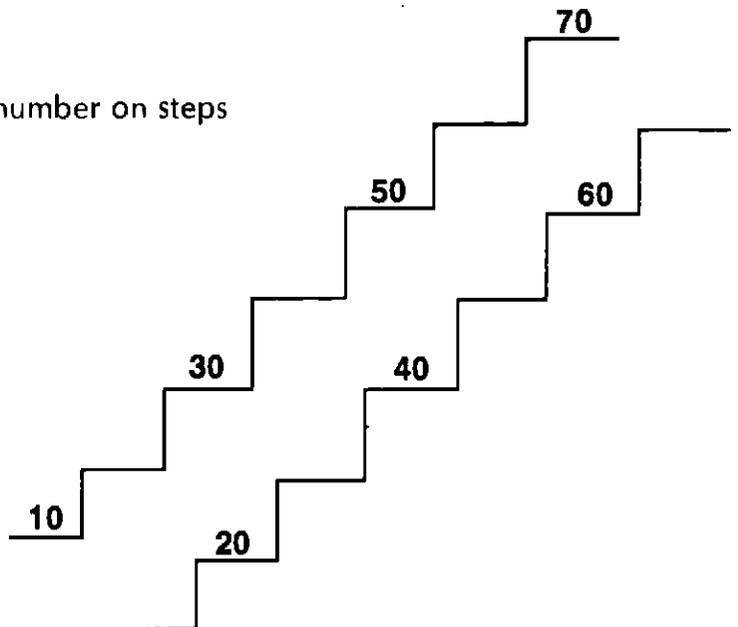


3. Counting in tens and ones



4. Skip Counting

Write number on steps

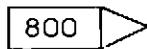


Arrow Cards Game to strengthen place value

The game can be used to strengthen place value at Class-III level.

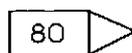
Materials Needed

Make 3 or more sets of cards.

 - First set of cards printed with 100 – 900 is mine cards

100, 200, 300, 400, 500, 600, 700, 800, 900

These cards are known as hundreds.

 - Second set of cards printed with 10, 20, 30, 40, 50, 60, 70, 80, 90

These cards are known as tens.

 - Third set of cards are printed with

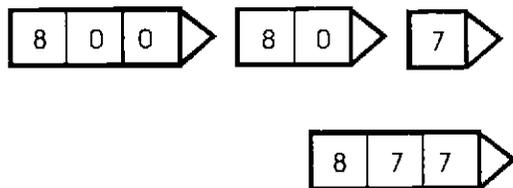
0, 1, 2, 3, 4, 5, 6, 7, 8, 9

These cards are known as units.

How to play :

Give 1 digit, 2 digits and 3 digits number and ask to arrange the number and find out the place value.

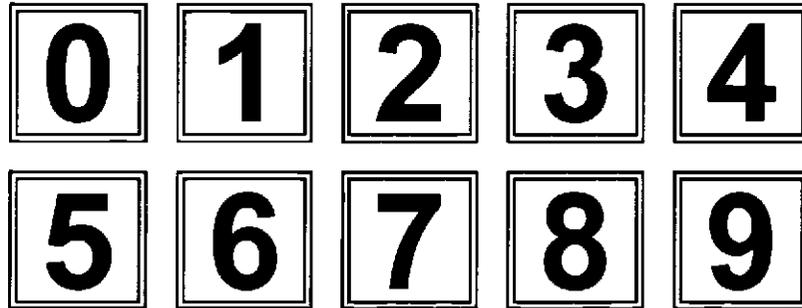
By taking one card from each set, we can make 3 digit number



When you arrange the cards according to the sequences which you have taken i.e., from the 1st set, then from 2nd set, then from the 3rd set, digit will appear with all its place value.

Place value score board game

You need a few sets of shuffled 0-9 cards, placed face down and a place value board for each player.



| Hundreds | Tens | Ones |
|----------|------|------|
| | | |

Before the game starts decide whether the lowest or the highest number wins. Take it in turns to place a card on the place value board in any position, bearing in mind the criteria – lowest or highest – selected for winning. Once a card is placed, it cannot be moved. Change the criteria as often as you wish and include a new criterion ‘nearest’ to a number, say 450.

Set the criteria according to the level of the student. *Gradually increase the criteria at a higher level. Initiate the game for one student first.*

Gradually increase the number of students and make it a group game.

Teacher made test

Purpose - To assess the concept of place value - Classes I to V
Write the place value of numbers in the given columns.

| Classes | Number | Lakhs | Ten Thousands | Thousands | Hundreds | Tens | Units |
|-------------|--------------------------|-------|---------------|-----------|----------|------|-------|
| Class - I | 10 12 18 | | | | | 1 | 0 |
| Class - II | 25 37 89 | | | | | | |
| Class - III | 108 320 578 | | | | | | |
| Class - IV | 1272 5075 9990 | | | | | | |
| Class - V | 55039 84400 810432 | | | | | | |

Teacher made test

Purpose - to assess the ability to convert the number names into numerals Classes I to V. Read number name given in the column of place value and write the number in the last column.

| Classes | Lakhs | Ten Thousands | Thousands | Hundreds | Tens | Units | Numbers |
|-------------|-------|---------------|-----------|----------|-------|-------|---------|
| Class - I | | | | | One | Eight | 18 |
| Class - II | | | | | Seven | Eight | |
| Class - III | | | | Six | Five | Zero | |
| Class - IV | | Five | Zero | Three | Zero | Eight | |
| Class - V | Two | Six | Five | Seven | Two | Nine | |



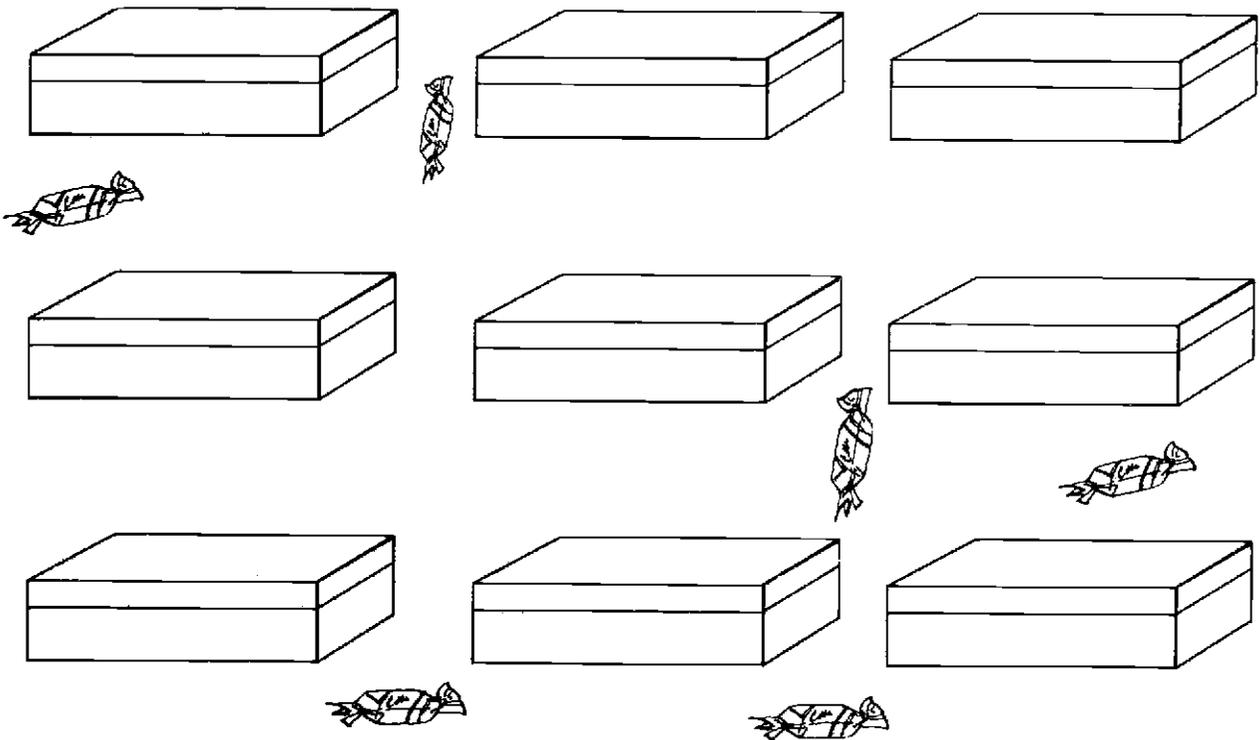
Name of the Student :

Class :

COUNTING IN 10s

Numerals – Class – II

Today is Rahul's birthday. His father gave him 50 chocolates. Help him arrange them in boxes, with 10 in each. Fill in the blank with the number of boxes he would need and strike off the empty boxes.



Answer : Rahul needs _____ boxes.

Objectives :

- To introduce the concept of sets of 10s which is a basic understanding for learning place value.

Additional activities :

- Packing
- Give items like toffees, pencils, pens, books, marbles etc. to make packets of 10.
- After making packets of 10, let them identify that 3 packets make thirty, 6 packets make 60, 8 packets make 80 etc.
- Let them count by tens and write by tens.
- Number names can also be introduced with that.

III. Computation Area

Computation involves addition, subtraction, multiplication and division.

The major problems in computation reflected in the mathematics screening schedule were

- Always counts fingers / draws lines to add or subtract
- Confuses with the place value of '0'
- Confuses between arithmetic signs
- Problem in selecting the correct computation in problem solving sums
- Has problem in regrouping
- Recites tables but does not apply in statement sums

Remedial Strategies

- Always remember teaching should start from concrete to semiconcrete to abstract to application. (See Learning computation – Instructional Ladder).
- The methodology explained in IRIP and given below can be used for assessment, programming and remedial teaching for students with learning problems in regular schools.

Techniques to make computation easy

- Make thorough the premath skills.
- Apply performance cues. example : Coloured dots.
- Use precision teaching – give timed exercises.
- Carry a multiplication table.
- Use mathematics tricks to learn tables.
- Use motor responses – clapping, stepping, chanting paired with actual operations to memorize tables.
- Use pocket calculator.
- Support with a mini reference book of common mathematics vocabulary.
- Create interest in community valid problem solving.
- Use computer assisted instruction.

Curriculum Based Mathematical Assessment for remedial teaching (Primary level)

Name of the student:

Age:

Sex:

Class:

1. Check the student's level/grade in Mathematics (use the curricular area based tasks)

| Sl. No. | Area | Grades/Classes | | | | | Remarks |
|---------|-----------------------------|----------------|---|---|---|---|---------|
| | | 1 | 2 | 3 | 4 | 5 | |
| 1 | Readiness skills & Numerals | | | | | | |
| 2 | Computation (whole number) | | | | | | |
| 3 | Money | | | | | | |
| 4 | Length | | | | | | |
| 5 | Mass | | | | | | |
| 6 | Capacity | | | | | | |
| 7 | Time | | | | | | |
| 8 | Fractions | | | | | | |
| 9 | Decimals | | | | | | |
| 10 | Percentage | | | | | | |
| 11 | Geometry | | | | | | |

2. Check the student's performance in Mathematics

| Sl. No. | Area | Below Average | Average | Above Average | Remarks |
|---------|-----------------|---------------|---------|---------------|---------|
| 1 | Maths work book | | | | |
| 2 | Teacher test | | | | |
| 3 | Unit test | | | | |
| 4 | Home work | | | | |
| 5 | Class work | | | | |

3. Select 2/3 areas of concern (based on No.1)

- 1.
- 2.
- 3.

4. In weak areas identify the most difficult tasks for the student

- 1.
- 2.
- 3.
- 4.

5. Conduct error analysis

1. Regrouping
2. Process substitution
3. Directional
4. Omission
5. Placement
6. Attention to sign
7. Wrong alignment
8. Defective algorithm
9. Guessing
10. Any other (Specify)

6. Check the related problems

1. Carelessness
2. Disinterested
3. Noncooperation
4. Difficulty in comprehension
5. Writing reversal
6. Mistakes while coping
7. Any other (Specify)

7. Mention the remedial teaching methods

**8. Rate the students performance.
Attach sample of student's work**

Date :

Signature :

Mathematical assessment and programming for students with learning problems in regular schools

Individualized Remedial Instruction Programme (IRIP)

1. Curricular Area - Computation - Addition
2. Skill - Adding three digit number to a two digit number, regrouping ones and tens
3. Grade / Class - 2
4. Work book - Book 2
5. Assessment methods - Use curriculum based task level curriculum - find the level

The above mentioned skill comes in class-2 as per the task level checklist.

6. Current level of functioning

| Readiness skills / pre-requisite skills assessment | Skills Mastered (Maintenance strategies) | Skills Previously taught (Corrective strategies) | Skills Never Taught (Developmental strategies) |
|--|---|--|--|
| <ol style="list-style-type: none"> 1. Adding 2 numbers with sum less than 10 2. Adding 2 one digit numbers with sum greater than 10 3. Adding 3 numbers with sum less than 10 4. Adding 2 digit numbers to a 1 digit number with no regrouping 5. Adding 2 digit number to a one digit number regrouping ones 6. Adding 2 digit number to a two digit number regrouping ones | <p style="text-align: center;">✓</p> <p style="text-align: center;">✓</p> <p style="text-align: center;">✓</p> <p style="text-align: center;">✓</p> | <i>Remedial teaching necessary</i> | <p>✓</p> |

Error analysis and remedial teaching

Adding 2 digit number to a one digit number regrouping ones.

| | | | | |
|---|---|---|---|---|
| $\begin{array}{r} 49 \\ + 9 \\ \hline \hline \end{array}$ | $\begin{array}{r} 38 \\ + 7 \\ \hline \hline \end{array}$ | $\begin{array}{r} 68 \\ + 6 \\ \hline \hline \end{array}$ | $\begin{array}{r} 97 \\ + 6 \\ \hline \hline \end{array}$ | $\begin{array}{r} 28 \\ + 6 \\ \hline \hline \end{array}$ |
|---|---|---|---|---|

Common Error

Error analysis

| | | | | | | |
|------|------|------|------|------|--|---|
| 4 18 | 3 15 | 6 14 | 9 16 | 2 14 | <i>The sums of ones and tens are each recorded without regard for place.</i> | |
| 22 | 18 | 20 | 22 | 16 | | <i>All digits are added $4 + 9 + 9 = 22$</i> |
| 418 | 315 | 614 | 913 | 214 | | <i>Digits are added from left to right. When the student does the sum closely observe how he/she does it.</i> |

Review after remedial teaching

Give another 5 similar sums. 80% achievement is necessary to start teaching the next higher level skills.

| | | | | |
|---|--|---|---|---|
| $\begin{array}{r} 27 \\ + 5 \\ \hline 32 \\ \hline \end{array}$ | $\begin{array}{r} 96 \\ + 9 \\ \hline 105 \\ \hline \end{array}$ | $\begin{array}{r} 38 \\ + 7 \\ \hline 45 \\ \hline \end{array}$ | $\begin{array}{r} 27 \\ + 9 \\ \hline 36 \\ \hline \end{array}$ | $\begin{array}{r} 45 \\ + 7 \\ \hline 52 \\ \hline \end{array}$ |
|---|--|---|---|---|

Till the student achieves 80%, continue to give similar sums. Initiate the next higher level skill, after achieving 80% success.

Teacher's Remarks:

ERROR ANALYSIS AND REMEDIAL TEACHING

| Error | Corrective Strategy | | | | | | | | | | | | |
|---|--|----------|------|-------|--|--|--|--|--|--|--|--|--|
| <p>1. The sums of ones and tens written ignoring place value.</p> $\begin{array}{r} 27 \\ + 5 \\ \hline 212 \end{array}$ | <p>1. Use colour box</p> <table border="1" style="margin: 10px auto; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="padding: 5px;">Hundreds</th> <th style="padding: 5px;">Tens</th> <th style="padding: 5px;">Units</th> </tr> </thead> <tbody> <tr> <td style="background-color: #cccccc; height: 20px;"></td> <td style="background-color: #cccccc; height: 20px;"></td> <td style="background-color: #cccccc; height: 20px;"></td> </tr> <tr> <td style="background-color: #cccccc; height: 20px;"></td> <td style="background-color: #cccccc; height: 20px;"></td> <td style="background-color: #cccccc; height: 20px;"></td> </tr> <tr> <td style="background-color: #cccccc; height: 20px;"></td> <td style="background-color: #cccccc; height: 20px;"></td> <td style="background-color: #cccccc; height: 20px;"></td> </tr> </tbody> </table> <p>2. Grid Paper: Write the problem in grids and label the columns (Emphasis that only one numeral can go in a box)</p> <p>3. Trading: Provide the student with blocks, beads, straws which they can trade</p> | Hundreds | Tens | Units | | | | | | | | | |
| Hundreds | Tens | Units | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| <p>2. All digits are added together</p> $\begin{array}{r} 49 \\ + 9 \\ \hline 22 \end{array} \quad 4 + 9 + 9 = 22$ <p>3. Digits are added from left to right</p> $\begin{array}{r} 49 \\ + 89 \\ \hline 1218 \end{array}$ | <p>1. Letter use: The students can be told to start addition from 'A'. The two numbers given under A to be added first $9+9=18$. After writing eight in the ones column ten is to be carried to the tens column 'B' and to be added $1+4=5$</p> $\begin{array}{r} \text{B A} \\ 49 \\ + 9 \\ \hline 58 \end{array}$ <p>1. Remember the slogan "Right to left" for addition, subtraction, multiplication. Most of us write with right hand Start adding from the right hand side. Left Right ←</p> $\begin{array}{r} 49 \\ + 89 \\ \hline 138 \end{array}$ <p>Observe from where the student starts and guide to start from right.</p> <p>2. Making arrows: Make an arrow towards left.</p> $\begin{array}{r} 49 \\ + 89 \\ \hline 138 \end{array} \quad \leftarrow$ | | | | | | | | | | | | |

Review after remedial teaching. See in the Worksheet.

Next Higher Level Skill

Adding 3 digit number to a 2 digit number, regrouping ones

| Developmental Strategies | Learners activities | Teachers activities | Remedial Methods | Remarks |
|--|---|---|--|--|
| 1. Adding 2 digit number to a 2 digit number without regrouping | $\begin{array}{r} 24 \\ + 31 \\ \hline 55 \end{array}$ $\begin{array}{r} 27 \\ + 31 \\ \hline 58 \end{array}$ | Check whether the student <ul style="list-style-type: none"> - adds from right to left - adds mentally using addition table - counts fingers/ making lines to add | Make arrows Label with letters Teach addition facts | Make a list of sums to confirm addition sums |
| 2. Ask the student to find the place value of the above answers | 55 = 5 tens and 5 ones 58 = 5 tens and 8 ones | Check whether student has problem in understanding place value | Use objects | Use the worksheet |
| 3. Adding 2 digit number, to two digit number, regrouping ones | $\begin{array}{r} 28 \\ + 29 \\ \hline 57 \end{array}$ $\begin{array}{r} 78 \\ + 17 \\ \hline 95 \end{array}$ | Check the errors | Repeat/modify methods | Prepare a review worksheet. |
| 4. Adding 3 digit numbers, to a 2 digit number, regrouping ones and tens | $\begin{array}{r} 279 \\ + 63 \\ \hline 342 \\ \hline 568 \\ + 47 \\ \hline 615 \end{array}$ | Explain the rules <ul style="list-style-type: none"> - Start from right to left - Tell clearly what to do, when the sum of 2 numbers are more than 9 - In a grid paper write one number in one column - Initially help the student to do with the help of teacher | Prepare the worksheet and analyse the errors to decide remedial methods. | |
| 5. Finding place value of 3 digit numbers | The student completes the worksheet H T U | <ul style="list-style-type: none"> - Prepare the worksheet and let the student do by himself. - Do the error analysis - Decide correctional strategies - Review to decide the next higher level skill | Based on errors prepare more worksheets. Finds variety of remedial methods. | |

A teacher made checklist to assess the students functioning level in the area of multiplication.

Multiply :

1. Two 1-digit numbers
2. 2-digit number by a 1-digit number, with no regrouping
3. 3-digit number by a 1-digit number, with no regrouping
4. 2-digit number by a 1-digit number, regrouping ones
5. 2-digit number by a 1-digit number, regrouping ones and tens
6. 3-digit number by a 1-digit number, with no regrouping ones
7. 3-digit number by a 1-digit number, regrouping ones
8. 3-digit number by a 1-digit number, regrouping ones and tens
9. 3-digit number by a 1-digit number, regrouping ones, tens, and hundreds
10. 2-digit number by a 2-digit number, with no regrouping
11. 2-digit number by a 2-digit number, with regrouping caused by the ones place digit of the multiplier
12. 3-digit number by a 2-digit number, with no regrouping
13. 3-digit number by a 2-digit number, with regrouping
14. 3-digit number by a 3-digit number, with no regrouping
15. 3-digit number by a 3-digit number, with regrouping caused by the ones place digit and the tens place digit of the multiplier
16. 3-digit number by a 3-digit number, with regrouping caused by all digits of the multiplier
17. 3-digit number with zero in the tens place by a 2-digit number

Practice the students to multiply using the multiplication tables.

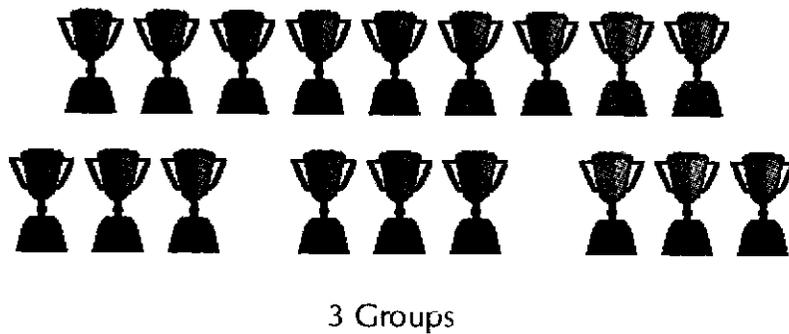
When they recite explain where to start and where to stop to get the product. Use colour coding.

Division

Division is considered as the most difficult of the four operations. For example, long division requires the use of division, multiplication, and subtraction in computing quotients. The concept of division is also to be introduced at concrete, semiconcrete and abstract level.

Concrete level : $9 \div 3$

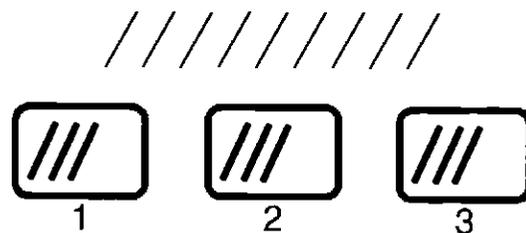
- The student counts the trophies. There are nine (9) trophies
- 9 is to be divided by 3.
- Therefore the student makes groups of 3 trophies.
- There are three groups
- The answer is $9 \div 3 = 3$



Semiconcrete level : $9 \div 3$

The student makes 9 lines

- 9 is to be divided by 3.
- Therefore the student makes lines to separate into groups of 3.
- There are three groups
- The answer is $9 \div 3 = 3$



Abstract level : $9 \div 3$

The student answers the problem from memory or uses an algorithm.

Example: $9 \div 3 = 3$

$$\begin{array}{r} 3) 9 \quad (3 \\ \underline{9} \\ 0 \end{array}$$

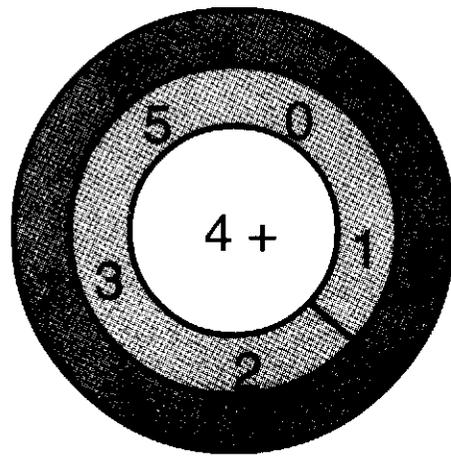
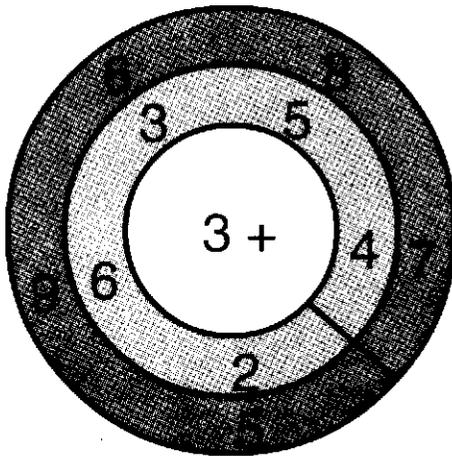


Name of the Student :

Class :

ADDITION WHEELS

Computation (Addition) – Class - I



| |
|-----------|
| $3 + 4 =$ |
| $3 + 2 =$ |
| $3 + 6 =$ |
| $3 + 3 =$ |
| $3 + 5 =$ |

| |
|-----------|
| $4 + 1 =$ |
| $4 + 2 =$ |
| $4 + 3 =$ |
| $4 + 5 =$ |
| $4 + 0 =$ |

Objective :

To check the student's skill in single digit addition.

This can be used in two ways :

1. Add two inner columns and find the answer in the outer column and write.
2. Make 3 wheels separately, fix the numbers and join the wheels with a fastener in the middle. Ask the student to turn the wheel and match the correct answer.



Name of the Student :

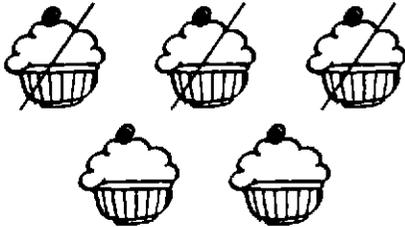
Class :

SINGLE DIGIT SUBTRACTION

Computation (Subtraction) – Class - I

Cut off the number of objects to be subtracted from the given figure. Follow the example.

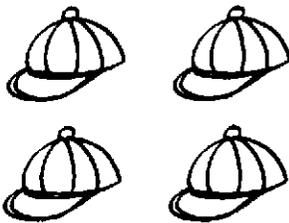
Eg :



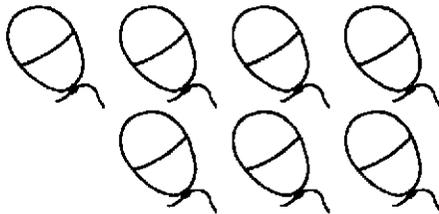
$$5 - 3 = \boxed{2}$$



$$6 - 2 = \boxed{}$$



$$4 - 4 = \boxed{}$$



$$7 - 0 = \boxed{}$$

Objective :

- To enable the student to do the subtraction at semiconcrete level.

Additional activities :

- It is only a sample worksheet. The teacher can make a number of worksheets in an innovative way to strengthen the above concept.
- As addition wheels subtraction wheels also can be prepared.



Name of the Student :

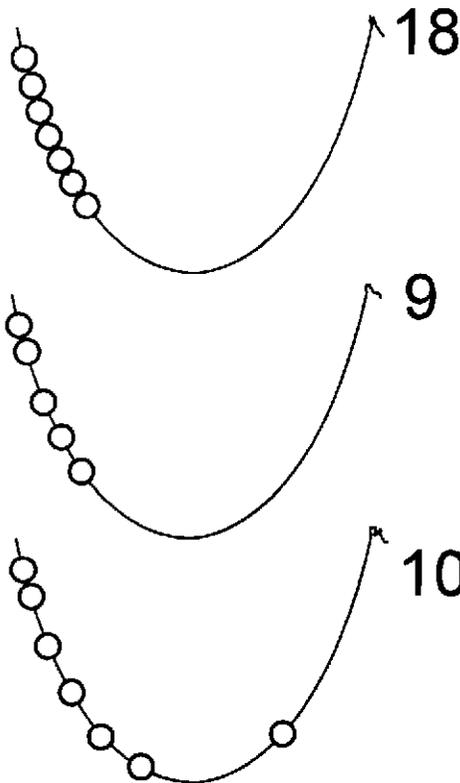
Class :

ADD THE MISSING BEADS

Computation - Class - II

A few beads have fallen off from each chain.

Read the number written next to each chain and draw the missing beads.



Objective :

To enable the student to do the simple sums mentally in day-to-day life.

Additional activities :

- Before doing the worksheet, student can be asked to do the exercise in a concrete situation.
- Provide a string and beads.

Instruction :

Give similar worksheets and problems to calculate mentally.

Example :

1. There were eight birds sitting on a tree.
Three of them went away.
How many birds are there on the tree.
2. Making garlands by tying certain number of flowers.



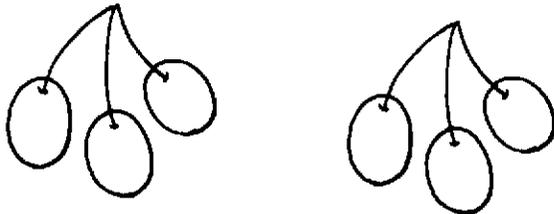
Name of the Student :

Class :

SIMPLE MULTIPLICATION

Computation (Multiplication) - Class - II

Solve the following as shown in the example :



No. of bunches : 2

No. of cherries in each bunch : 3

Total No. of cherries : 2 x 3

Answer :

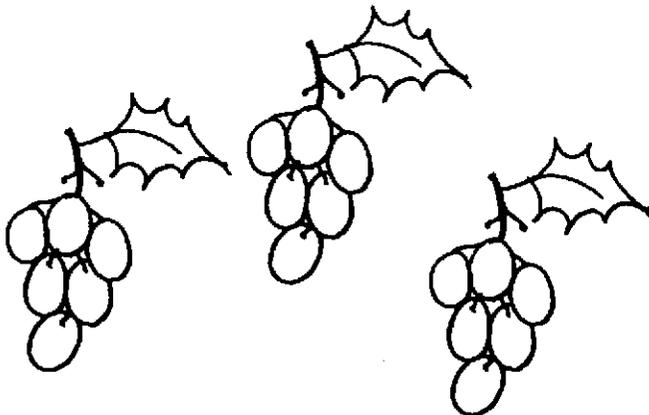


No. of cakes :

No. of candles in each cake :

Total No. of candles : X

Answer :



No. of bunches :

No. of grapes in each bunch :

Total No. of grapes : X

Answer :

Objective :

To enable the student

- to do multiplication in a concrete and semiconcrete ways.

Additional activities :

- Before giving the worksheet, introduce the concept in a concrete situation.

As the students learn the concept, introduce the worksheet to comprehend it in a semiconcncrete situation.



WORK SHEET

Name of the Student :

Class :

MENTAL SUMS

Computation – Class – II (Revision)

$3 + 2 = \underline{\quad}$

$4 + 5 = \underline{\quad}$

$7 - 0 = \underline{\quad}$

$6 - 2 = \underline{\quad}$

$8 + 6 = \underline{\quad}$

$9 + 3 = \underline{\quad}$

$2 + 5 = \underline{\quad}$

$7 - 0 = \underline{\quad}$

$6 - 4 = \underline{\quad}$

$$\begin{array}{r} 8 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ \times 5 \\ \hline \end{array}$$

$12 \div 4 = \underline{\quad}$

$6 \div 2 = \underline{\quad}$

$10 \div 2 = \underline{\quad}$

Objective :

To enable the student

- to identify the signs of computation.
- to select the correct computation.

It is a worksheet planned to evaluate the student's performance in all four areas of simple computation addition, subtraction, multiplication and division.

If the student has problems in selection of correct operational symbols, continue with more worksheets and exercises.

MATHEMATICS STORY PROBLEM CLUES

Class II

Addition
(putting sets together)

How many in all?
How many all together?
What is the sum?
What is the total?

+

Subtraction
(taking sets apart)

Find the difference.
How many more/less?
How much bigger?
How much taller?
(How much older)

-

Multiplication
(putting equal sets together)

How many in all?
How many all together?
Product

×

Division
(taking equal sets apart)

Find the average.
What would one unit be?
Finds the quotient.

÷

Try this method

STEPS IN DOING STORY SUM

Class II

Problem / Sum

Ramu bought a pencil box for Rs. 30-00 and a pen for Rs. 15-00, and an eraser for Rs. 2-00. He pays Rs. 50-00 to the shopkeeper. Will he get a balance ? If so, how much ?

Steps :

Student

1. Read the sum.
2. Read again - Find the key words that help in solving the problem.
3. Let the student draw the pictures of what he comprehends.
4. Teacher asks the student, "Tell the sum in your own words".
5. If he cannot, teacher gives CUE.
6. As he gains competency, teacher fades cues.

Use your imagination, modify/find novel methods.

Steps in cueing – example

Teacher asks; What should we know to solve the problem?

Student: _____ bought _____

Underline bought

What were bought.

Item 1 Cost :

Item 2 Cost :

Item 3 Cost :

Altogether cost : + _____

Next cue word Pay

Next cue word Balance

Bought Pay Balance

Rs. Rs. Rs.

What will you do?

Altogether how much to pay?

How much paid?

Balance = Paid – to pay

IV. Fractions :

The major problems in fractions reflected in the math screening schedule were

- The concept of fractions.
- Differentiating the numerator and denominator in a fraction.
- Computing fractions.

INDIVIDUALIZED REMEDIAL INSTRUCTION PROGRAMME (IRIP)

FRACTIONS

Adding unlike fractions by converting into decimals.

Class: IV

Workbook: 4

Assessment: Use the task level curriculum and decide the level of the student.

| | Mastered | Being Taught | Yet to be taught | Remarks Remarks |
|---|----------|--------------------------|------------------|--------------------|
| 1. Writes fractions when dictated. | ✓ | Remedial teaching needed | | |
| 2. Comprehends the meaning of equivalent fractions ($1/2 = 2/4 = 4/8$) | ✓ | ✓ | | |
| 3. Arranges equivalent fractions in ascending and descending order | ✓ | ✓ | | |
| 4. Adds like fractions | | ✓ | | |
| 5. Converts fractions into decimals | | ✓ | | |
| 6. Adds decimals after converting fractions into decimals | | | ✓ | |

Teaching Method

All the above tasks can be assessed and taught through a fraction game.

Materials : Specially prepared cards with numbers 1 to 10 on it. (See the picture)

Black cards: 1-10 (flexible – according to the number of players)

Red cards: 1-10 (flexible – according to the number of players)

Paper and pencil for scoring.

How to play :

- Cards are separated and kept in 2 places/boxes
- 1st player takes 2 cards (one black and one red)
- Forms the fraction using the value of black card as numerator and the value of red card as denominator
- If the value of black card is 2 and the red card is 9, then the fraction is $\frac{2}{9}$.
- Continues the game like this until he makes the sum 10 or closest to 10.
- The sum may be below or above 10.
- Winner is the player who gets closest to 10.
- A minimum of two people are needed to play the game.
- When the student enters the score, the teacher can check whether the student has the concept of numerator and denominator.
- As the play ends, ask the students to show the equivalent fractions and arrange them in ascending and descending order.
- After every play help them to convert the fraction into decimals.
- Observe very closely and note down the errors which the student makes.
- The errors usually the students make are :
 1. Differentiating between numerator and denominator.
 2. Arranging in ascending and descending order.
 3. Converting into decimals.
 4. Problems in algorithms during computation of decimals.



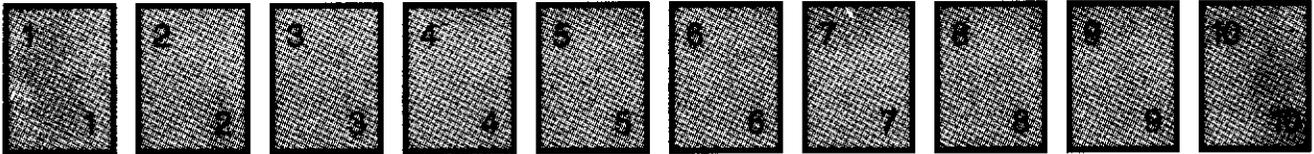
Name of the Student :

Class :

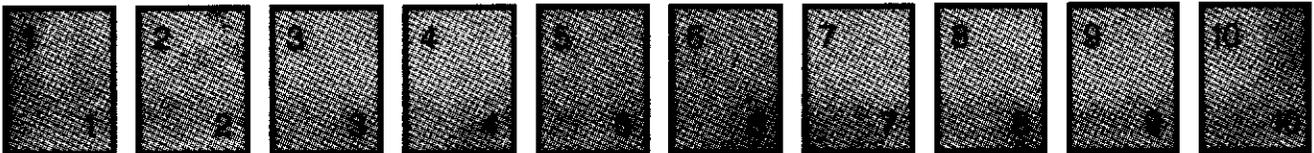
FRACTION GAME

Fractions – Class - IV

Numerator cards



Denominator cards



Example :

| ANIL | | TOTAL | SUNIL | | TOTAL |
|----------------------|--------------|-------|----------------------|----------------|-------|
| 1 st turn | $2/9 = .22$ | .22 | 1 st turn | $3/4 = .75$ | .75 |
| 2 nd turn | $4/8 = .50$ | .72 | 2 nd turn | $9/8 = 1.12$ | 1.87 |
| 3 rd turn | $6/3 = 2.00$ | 2.72 | 3 rd turn | $7/5 = 1.40$ | 3.27 |
| 4 th turn | $8/2 = 4.00$ | 6.72 | 4 th turn | $10/1 = 10.00$ | 13.27 |

Sunil is the winner.

Prepare more worksheets as per the level of the students. Find out the errors for remedial teaching if required.

Modified - Hlurwitz, Goddard, Epstein (1975)



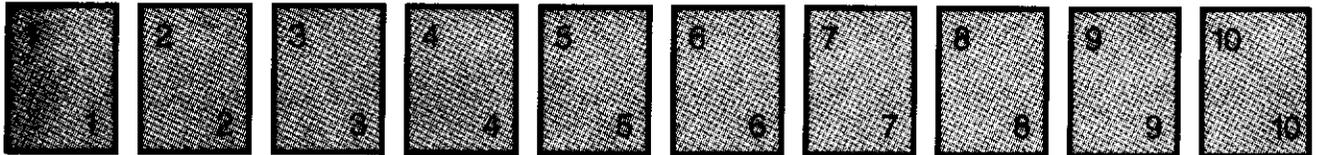
Name of the Student :

Class :

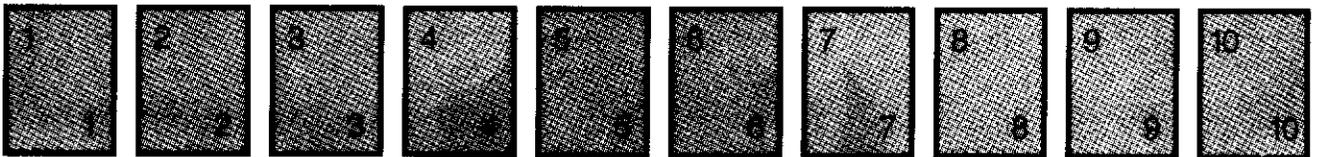
FRACTION GAME

Fractions – Class - IV

Numerator cards



Denominator cards



| PLAYER 1 | TOTAL | PLAYER 2 | TOTAL |
|----------|-------|----------|-------|
| | | | |

Prepare more worksheets as per the level of the students. Find out the errors for remedial teaching if required.

Modified - Hlurwitz, Goddard, Epstein (1975)



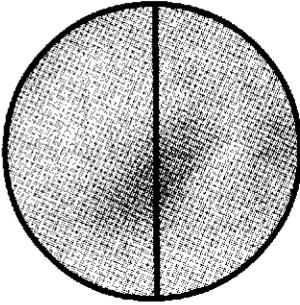
Name of the Student :

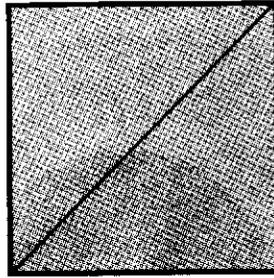
Class :

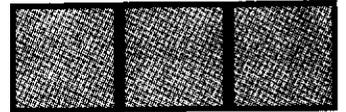
CONCEPT OF FRACTION

Fractions - Class - IV

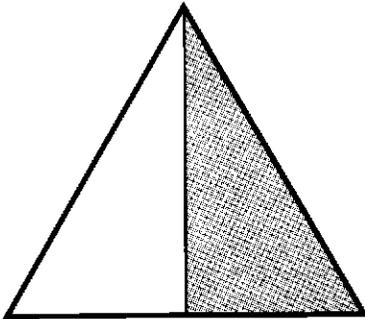
Count the equal parts.



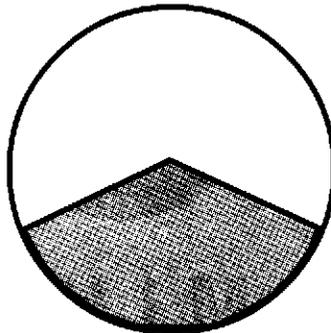




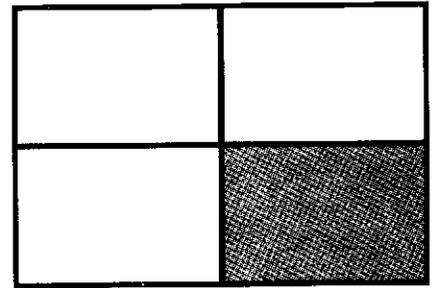
How much is coloured ? Tick the correct answer



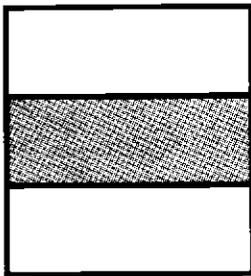
$\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{4}$



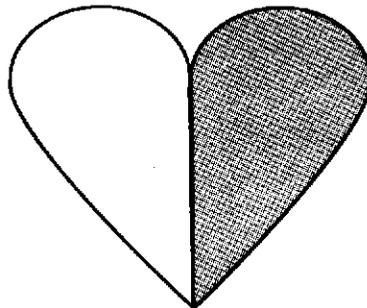
$\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{4}$



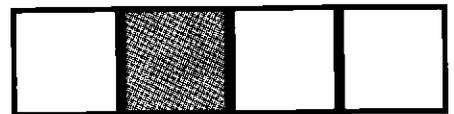
$\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{4}$



$\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{4}$



$\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{4}$



$\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{4}$

CONCEPT OF FRACTION

Objective:

- To enable the student to identify the fractions (half, one third, one fourth) in a concrete situation.
- To name the fraction in a semi concrete situation.

Additional activities :

- Draw shapes and name fractions.
- Cut papers into various sizes (half, one third, one fourth).
- Iron clothes (half, one fourth) - as we fold the cloths while ironing.

Instruction :

Prepare more worksheets similar to the worksheet "facts of fractions"

Combine fractions with the concept of percentage.

$$\frac{1}{2} = 50\%$$

$$\frac{1}{4} = 25\%$$

$$\frac{3}{4} = 75\%$$

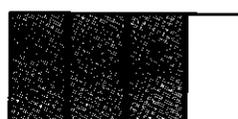
$$1 = 100\%$$



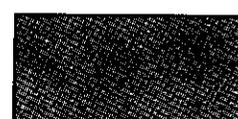
$$\frac{1}{2} = 50\%$$



$$\frac{1}{4} = 25\%$$



$$\frac{3}{4} = 75\%$$



$$1 = 100\%$$



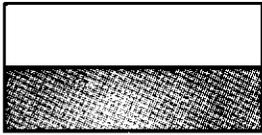
Name of the Student :

Class :

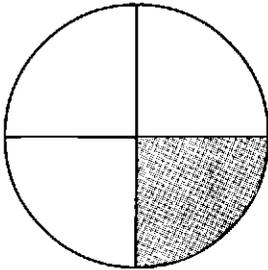
FACTS OF FRACTIONS

Class - IV

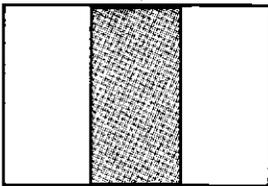
Answer the following : Example :



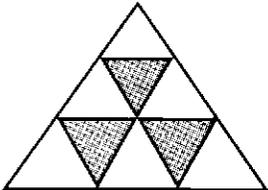
$1/2$ means an object has been divided into equal parts and part has been taken.



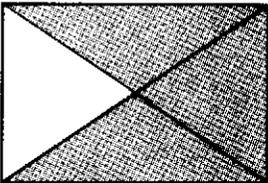
$1/4$ means an object has been divided into equal parts and part has been taken.



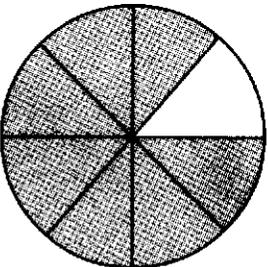
$2/3$ means an object has been divided into equal parts and part has been taken.



$3/9$ means an object has been divided into equal parts and parts have been taken.



$3/4$ means an object has been divided into equal parts and part has been taken.



$7/8$ means an object has been divided into equal parts and parts have been taken.

V Geometry and Measurement

The following problems were identified while screening

- Discriminating between geometrical shapes and drawing using geometrical instruments.
- Confuses between acute angle, obtuse angle and right angle.
- Confuses between radius, diameter and chord of a circle.

Techniques for teaching measurement

- *Teach the concept of volume, weight and length using as many concrete materials as possible.*
-

- *Motivate the students to measure the objects around the home.
example : The door, windows, tables, chairs etc.,*
-

- *Encourage them to measure and find out the relationship.*
-

- *Cooking activities can motivate the students to learn the relationship between various measurements.*

*example : kilograms, litres, standard units
and non-standard units.*



Name of the Student :

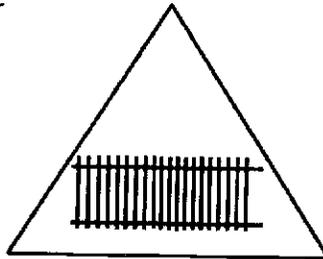
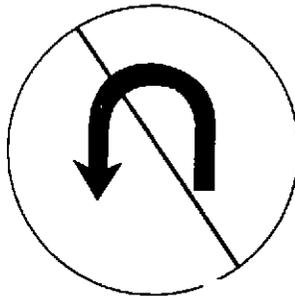
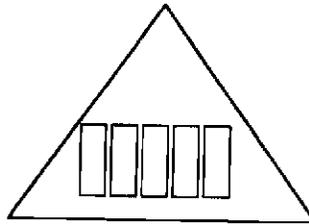
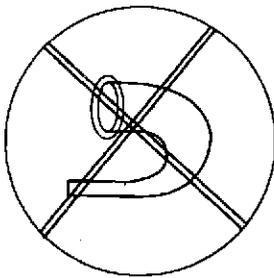
Class :

SHAPES AS SYMBOLS

Geometry - shapes - Class III

Activity :

- Have a discussion on the meaning of the shapes and signs given below



Objective:

To enable the student

- to identify various shapes seen in surroundings and discriminate its purpose.



Name of the Student :

Class :

GEOMETRICAL SHAPES

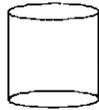
Geometry - Class III

Activities :

- Match the shapes and words correctly



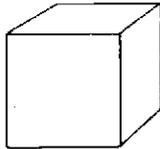
Circle



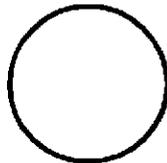
Semi Circle



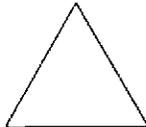
Pyramid



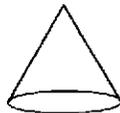
Cuboid



Cylinder



Cone



Triangle



Cube

Objective :

To enable the student

- to identify geometrical shapes and to learn the vocabulary.
- to utilize the shapes and vocabulary in learning higher level geometrical concepts.

Additional activities :

- Give concrete objects. Let the student touch and feel the differences.
- Using the 3 dimensional objects let them draw the shapes and name them.
- Give dictation to learn the spelling....



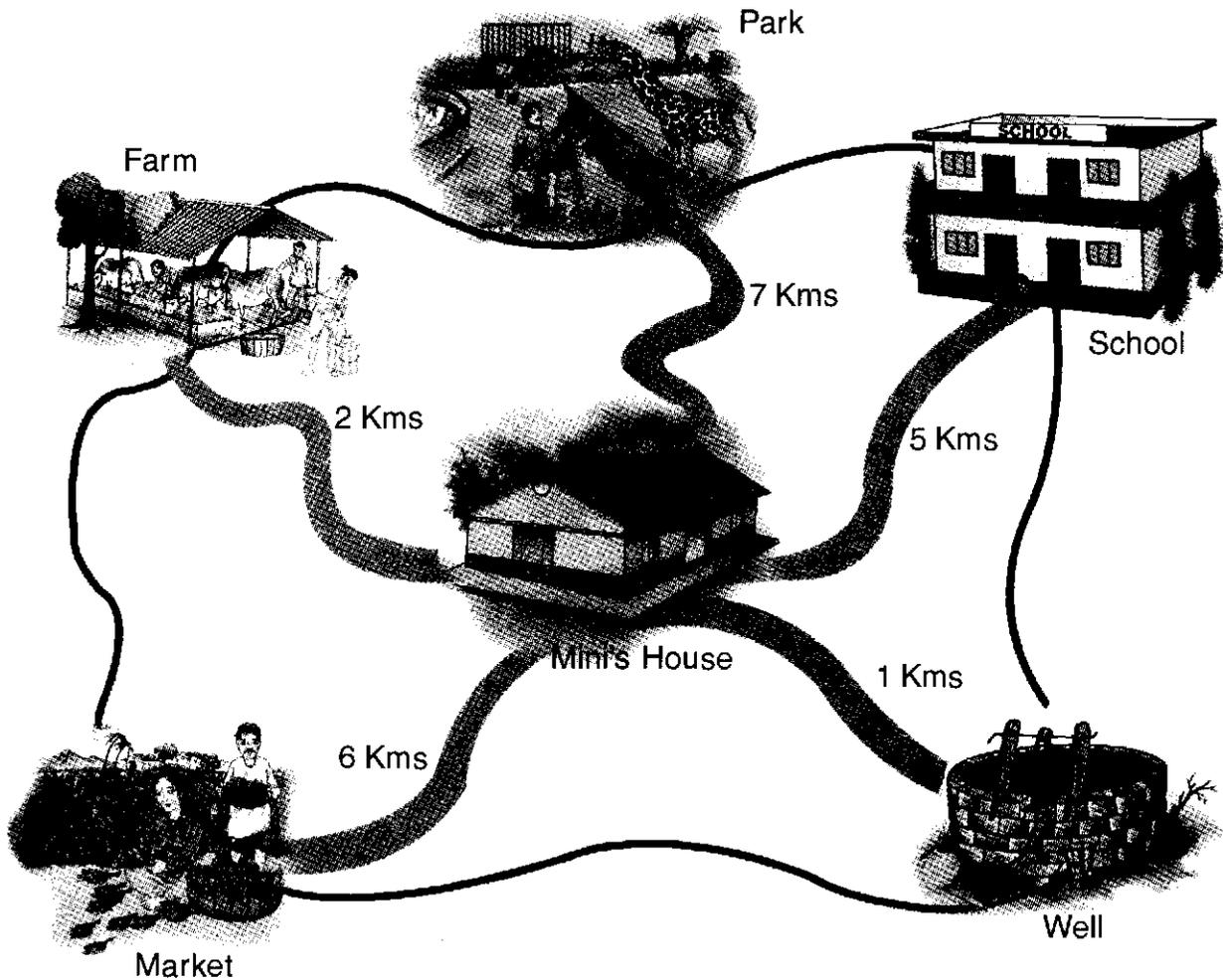
Name of the Student :

Class :

FIND THE DISTANCE

Measurement – Class-V

Mini's house is in the middle of the picture map.
Use the map to answer the questions given below :



1. How far is Mini's house from the market ?
2. Which distance is more : Mini's house to the park or Mini's house to her school ?
3. How much closer is the well from Mini's house.
4. If you have to go from the school to Mini's house and from there to the park, how many kilometers would you have to travel ?



Name of the Student :

Class :

ABOUT ME

Measurement – Class-V Application level

Materials :

Inch tape, weighing scale, alarm clock, pen, paper, list of words.

Activities :

Find out the following.

My weight is _____

My height is _____

Circumference of my waist is _____

Circumference of my head is _____

Dictate the words from Math vocabulary list for 5 minutes.

I can read _____ words in 3 minutes.

Read the words :

I can write _____ words in 5 minutes. Request to read words from the Math vocabulary.

| | |
|--|--|
| | |
| | |
| | |
| | |
| | |

Objective :

To prepare the students

- to apply the concept of measurement in day-to-day life.

Additional activities :

- Have discussion on how the above concept is useful in day to day life, especially in selecting and stitching clothes.
- Let the students measure the width and length of their dress/clothes.
- Explain and let them find out the size of the footwear, belt, brazier etc.

1. Money & Time

If the students have problems in computation area, this will be reflected in the area of calculating money and time. The remedial teaching strategies suggested in the area of computation may be used while teaching the concept of money and time.

Teaching Time and Money

Teaching the ability to tell time accurately and use money both efficiently and effectively are high priority goals for most learners (Brock, 1979). These skills, require intensive training in relation to community and daily school activities. Whenever possible, teachers should start by using concrete events or tasks that students can associate with the skill. Most learners will associate both time and money with concrete events. They can learn to compute time and money problems at the semiconcrete level and eventually move to more abstract activities such as budgeting and time management. To teach time and money concept try the following tips :

1. Use a circular number line to help the students to learn the relationship between minutes and hours.
2. Number lines can also be used in teaching money skills.
3. Use money cards to teach making change.
For example : A student shopping with Rs. 5 can carry a card with five circles. Each representing Re.1 If the students spend Rs. 1.50, the students mark one circle and half part of the second circle. Then the remaining with the students is Rs. 3.50 i.e., three circles and half part of the circle.
4. Task analyse and present students with single small steps to make it simple.
5. Providing real money for younger students to teach more advanced money management skills will be an effective prerequisite.

Remember that teaching should always start from the concrete level and move towards – semiconcrete – functional and abstract levels.

Few worksheets are given for exercises.



WORK SHEET

Name of the Student :

Class :

COUNT THE COINS

Class - I

Rs = Rupee
Ps = Paise















Objectives :

To enable the student

- to identify coins.
- to calculate coins.

Additional activities :

- Have a box of all types of coins.
- Ask the student to group the coins.

Let the students make required amount by using various types of coins.

For example : Rs. 1 + 20 ps + 50 ps = Rs. 1.70 ps.

Rs. 5 + Rs. 1 + Rs. 2 = Rs. 8

Continue this activity to strengthen the above concept.



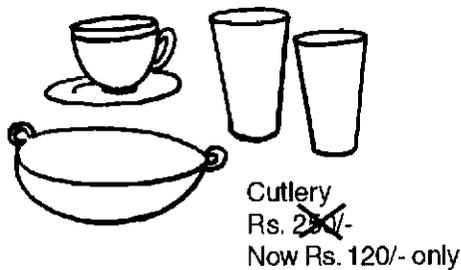
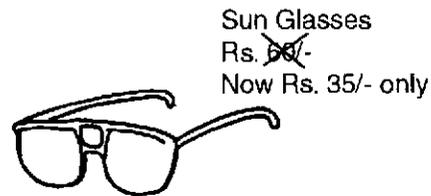
Name of the Student :

Class :

COST & SALE

Money - Class - V

Look at the picture and answer the questions give below :



1. How much did the shirt cost before the sale ?
2. How much would you save if you buy the sun glasses now at the sale ?
3. Which item is more costly, the jewellery or the shirt ?
4. If you have Rs. 50, can you buy the sun glasses ?
5. If you had Rs. 400 and you bought a cutlery set and the shirt on sale, how much money would you have left with ?

Objective :

- to familiarize the students in shopping.
- to introduce the concept of sale, more, less and profit.
- to enable the students to select the appropriate items.

Additional activities :

- Plan for more community valid math exercises.
- Expose the students to sale situations.
- Guide the parents to take the children with them when they go for shopping.

Instruction :

Prepare more worksheets similar to the given worksheet 'Cost & Sale'.



WORK SHEET

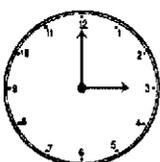
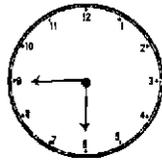
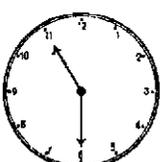
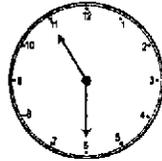
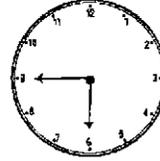
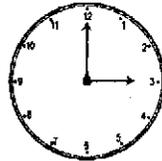
Name of the Student :

Class :

MATCH THE TIMINGS

Time - Class – III

Match the Clocks showing same time by drawing a line



Objective :

To familiarize the student

- To read the time on a clock / watch and utilize it in day to day activities.
- To introduce counting '5s' and read the numbers 1 to 12.
- To introduce simple multiplication while finding out the time.

Additional activities :

- Provide various types of watches and clocks.
- Ask the student to adjust the hands as per the time.
- Let them identify the various parts and working system of a clock / watch.
- Ask to adjust the time for alarm.
- Help to prepare a time table with a clock face mentioning time.
- Give activities to be completed within a given time.

Instruction : Introduce the worksheet "Analog vs Digital clock" to familiarize with the digital time.



Name of the Student :

Class :

ANALOG Vs DIGITAL CLOCK

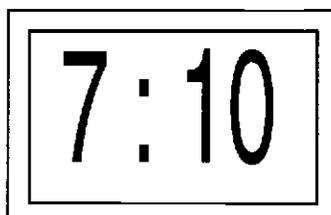
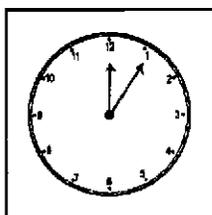
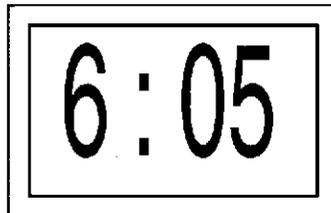
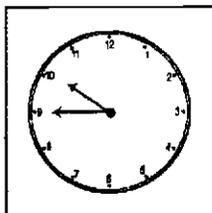
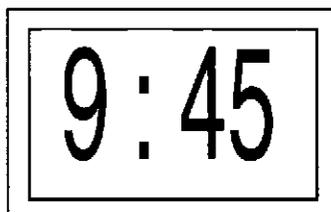
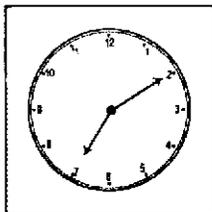
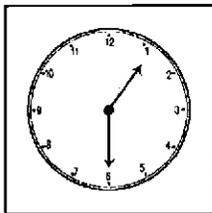
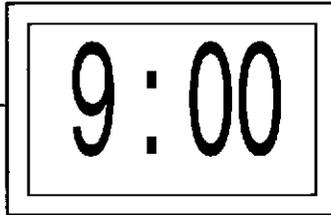
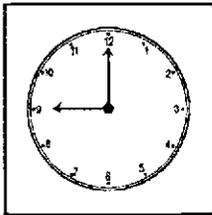
Time - Class - III

Match the clocks in column 'A' with those in column 'B' based on the time they display. Draw a line to connect.

Eg :

A

B



Objective :

To enable the student

- To discriminate between digital clocks and other clocks.

Additional activities :

- Let the students compare the time shown on digital and other clocks.
- Give practice to adjust timings and alarm.



Name of the Student :

Class :

CALENDAR READING

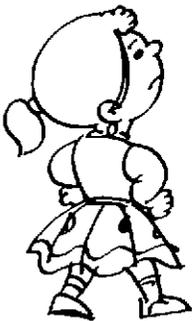
Time - Class – IV

The calendar below shows dates for the month of March.

Use the information on the calendar to answer the questions below :

MARCH

| SUN | MON | TUE | WED | THU | FRI | SAT |
|-----|-----|-----|-----|-----|-----|-----|
| | | 1 | 2 | 3 | 4 | 5 |
| 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| 20 | 21 | 22 | 23 | 24 | 25 | 26 |
| 27 | 28 | 29 | 30 | 31 | | |



1. How many Tuesdays are there in this month ?
2. On what day does the 24th fall on ?
3. Prem's Birthday falls on Wednesday, in the 3rd week of the month. Can you tell what date it is.
4. If all the Mondays are removed from the month how many days would be left ?
5. If you add the sum of all the Sundays, i.e., 6, 13, 20, 27 what would be the answer ?

Objective :

To enable the student

- to introduce the days and months in a year.
- to identify the days and dates.
- to discriminate the words : yesterday, today, tomorrow, before & after.

Additional activities :

- Let the student use the calendar in a school as well as in the house.
- Continue practice in telling dates and days.
- Give a group work to prepare a monthly time schedule.
- Mark the important dates such as birthdays, festivals dates etc. on the calendar.
- Introduce various types of calendars.
 1. One page – 12 months on a single page
 2. One page – 3 months on a single page
 3. One page – 1 month on a single page
 4. Day, Date, month changing calendar
- Explain the significance of red coloured numbers in the calendar.

VI. General Mathematics Problems

The students who have difficulties in mathematics exhibit carelessness in many ways.

Lack of attention

Inactive

Careless while copying

In order to create an interest in the children, no doubt the teacher should be creative.

Teachers can try the following tips.

To promote positive attitude towards Mathematics

- Plan only attainable goals with the involvement of students.
- Prepare task analysis. Begin with known tasks. Use feedback charts.
- Assure that the teacher believes that the student will achieve the set goals in mathematics.
- Communicate in a positive way.
- Exhibit positive attitude towards mathematics and use effective methods in mathematics instructions.
- Reinforce the students his/her effort and achievement in mathematics work.

Check your relationship with the student

- In grading student's mathematics papers, how does the teacher respond to errors?
- How does the student react to the teacher's corrections? Is there a difference when the student is corrected in front of peers?
- What do other students do when a peer makes an error?
- When the student makes a correct response, does the teacher confirm the response? Praise the student?
- Do certain students require frequent assistance from the teacher? Are you able to fulfill individual need of every student? Is it possible? How ?

**For students with achievement problems,
it is probably better to mark the correct
responses rather than the errors.**

PRIMARY LEVEL MATHEMATICS VOCABULARY SYMBOLS AND ABBREVIATIONS

The students who have problem in Mathematics also may exhibit problem in reading and writing. If they are not able to read and comprehend the vocabulary used in mathematics, they will face difficulties in mathematics problem solving. It is important to teach the students to read, comprehend and use the generally used mathematics vocabulary to solve mathematics problems in the class and day-to-day life. Therefore, the mathematical terms symbols and abbreviations used at primary level have been identified and listed class-wise for assessment and instruction. It serves as a mini reference book for the primary level students.

How to use the mini reference book of math vocabulary :

The terms and symbols are listed according to class. The pictures are also drawn and presented with terms in every page. 162 commonly used terms are listed. The major purpose of the list is to enable the student to read the vocabulary, match with pictures and comprehend the meaning of the terms. This also can be used as a teaching aid by the teachers.

How to assess :

The assessment can be done at 5 levels. The students ability in

Key to scoring

- a. ***Can read the term***
- b. ***Can comprehend the term***
- c. ***Can write the term***
- d. ***Can match the terms with symbols***
- e. ***Can apply the term in solving math problems***

The assessment data helps the teacher to decide the student's grade level performance and starting point of instruction.

"Mathemagic"

From 123456789, remove 8 and multiply the number 12345679 with the multiples of 9

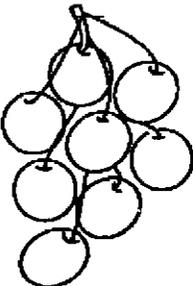
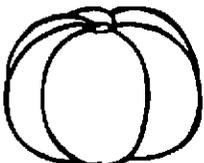
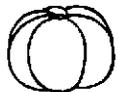
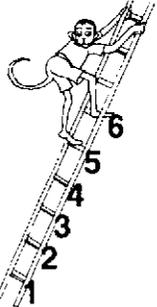
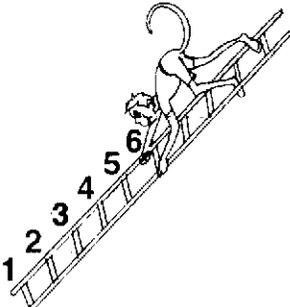
$$\begin{array}{rcl} 12345679 \times 9 & = & 111111111 \\ 12345679 \times 18 & = & 222222222 \\ 12345679 \times 27 & = & 333333333 \\ 12345679 \times 36 & = & 444444444 \\ 12345679 \times 45 & = & 555555555 \\ 12345679 \times 54 & = & 666666666 \\ 12345679 \times 63 & = & 777777777 \\ 12345679 \times 72 & = & 888888888 \\ 12345679 \times 81 & = & 999999999 \end{array}$$

The magic in these numbers is when you multiply with the multiples of 9, we get nine digits each of the numbers from 1 to 9 in sequence.

When you multiply $12345679 \times 999999999$ the answer is 12345678987654321.

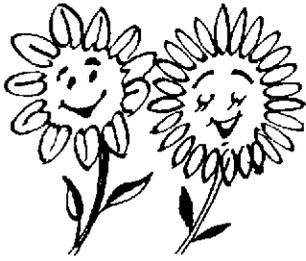
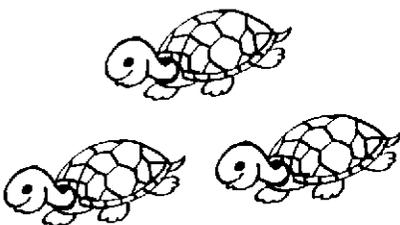
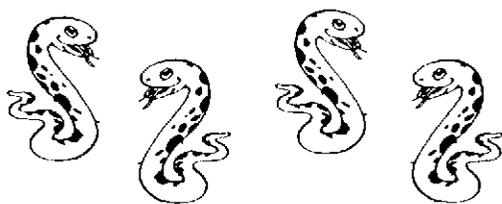
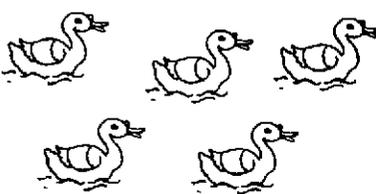
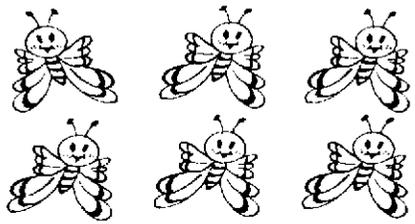
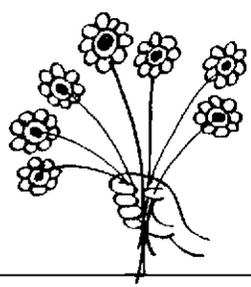
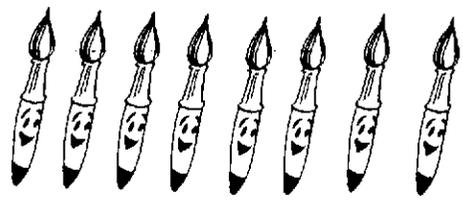
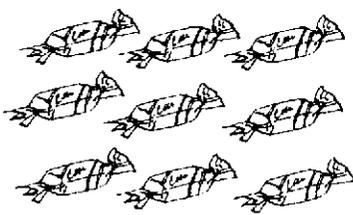
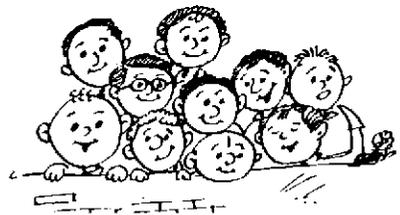
PRIMARY LEVEL MATHEMATICS - VOCABULARY, SYMBOLS AND ABBREVIATIONS

CLASS - I

| | | | | | |
|-----|-----------------------|---|---|---|---|
| 1. | Numbers | 1 2 3 4 5 |  |  |  |
| 2. | Zero 0 | 6 7 8 9 | 2 Birds | No Birds | |
| 3. | Less than < |  |  | | |
| 4. | More than > | | | | |
| 5. | Smaller than |  | | | |
| 6. | Bigger than | |  | | |
| 7. | Smallest |  |  | | |
| 8. | Biggest / Greatest | | |  | |
| 9. | Ascending Order |  | | | |
| 10. | Descending Order | |  | | |

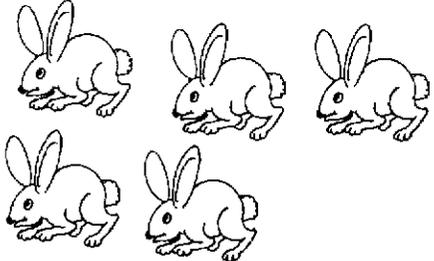
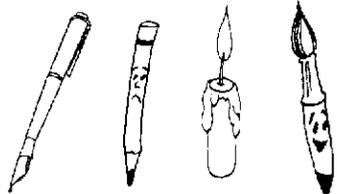
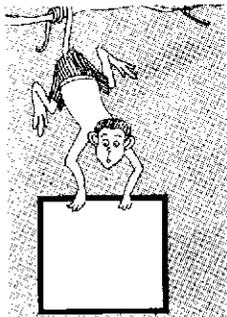
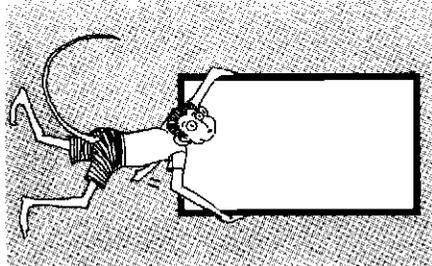
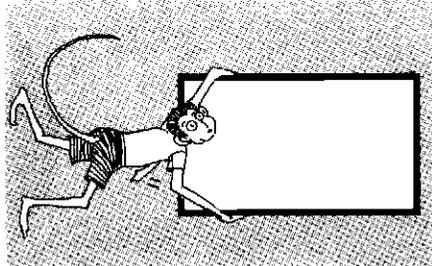
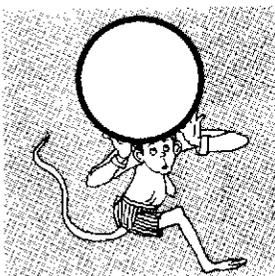
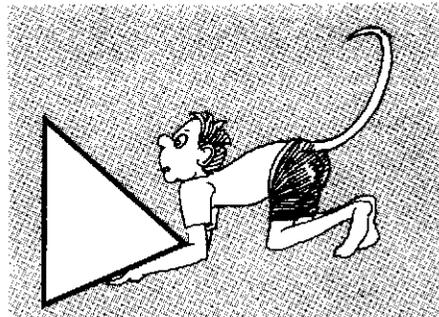
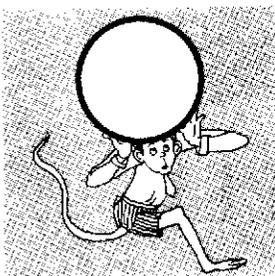
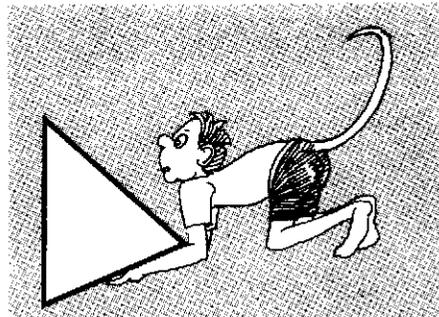
**PRIMARY LEVEL MATHEMATICS – VOCABULARY,
SYMBOLS AND ABBREVIATIONS**

CLASS - I

| | | | |
|-----|------------|---|--|
| 11. | One 1 |  |  |
| 12. | Two 2 | | |
| 13. | Three 3 |  |  |
| 14. | Four 4 | | |
| 15. | Five 5 |  |  |
| 16. | Six 6 | | |
| 17. | Seven 7 |  |  |
| 18. | Eight 8 | | |
| 19. | Nine 9 |  |  |
| 20. | Ten 10 | | |

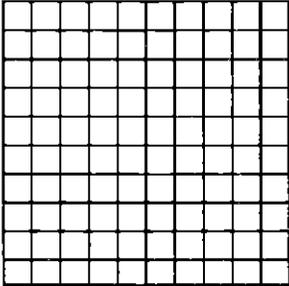
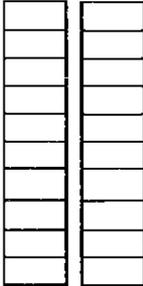
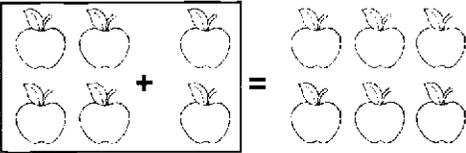
**PRIMARY LEVEL MATHEMATICS - VOCABULARY,
SYMBOLS AND ABBREVIATIONS**

CLASS - I

| | | | |
|-----|--|--|--|
| 21. | Cardinal Number | Cardinal Number answers : How many ? | Ordinal Number answers : Which is the second one ? |
| 22. | Ordinal Number |  |  |
| 23. | Square  |  |  |
| 24. | Rectangle  |  |  |
| 25. | Circle  |  |  |
| 26. | Triangle  |  |  |
| 27. | Before | Which number comes before 30 ? | |
| 28. | After |  Which number comes after 28 ? | |

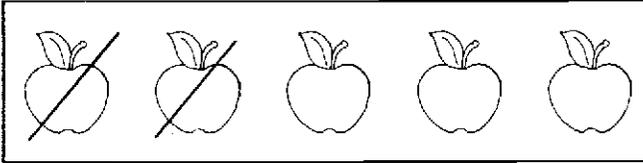
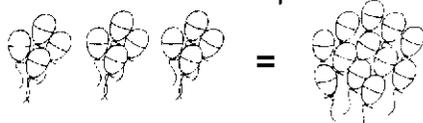
**PRIMARY LEVEL MATHEMATICS – VOCABULARY,
SYMBOLS AND ABBREVIATIONS**

CLASS - II

| | | |
|----|----------------|---|
| 1. | Place Value | |
| 2. | Unit / one | <p align="center">Place value</p>  |
| 3. | Ten 10 |  |
| 4. | Hundred 100 |  |
| 5. | Addition | <p>Addition Putting together</p> $\begin{array}{r} 4 \\ + 2 \\ \hline 6 \end{array}$  |
| 6. | Plus + | <p align="center">$4 + 2 = 6$ '+' is called Plus</p> |
| 7. | Equal to = | <p align="center">$4 + 2 = 6$ '=' is called Equal to</p> |
| 8. | Sum | <p align="center">$4 + 2 = 6$ '6' is called Sum</p> |

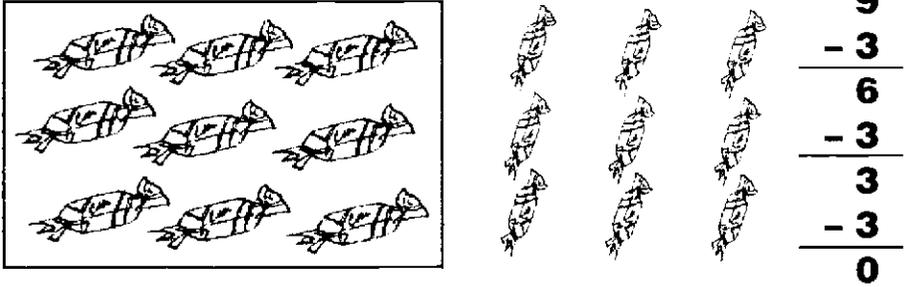
**PRIMARY LEVEL MATHEMATICS – VOCABULARY,
SYMBOLS AND ABBREVIATIONS**

CLASS - II

| | | | |
|-----|-------------------------|--|--|
| 9. | Subtraction | $\begin{array}{r} 5 \\ - 2 \\ \hline 3 \end{array}$  | |
| 10. | Minus - | $\begin{array}{r} 5 \\ - 2 \\ \hline 3 \end{array}$ <p>'-' is called Minus</p> | |
| 11. | Difference | | $\begin{array}{r} 5 \\ - 2 \\ \hline 3 \end{array}$ <p>'3' is the Difference</p> |
| 12. | Multiplication | $\begin{array}{r} 4 \\ \times 3 \\ \hline 12 \end{array}$  | $4 + 4 + 4 = 12$ 'X' is called Into |
| 13. | Into X | | |
| 14. | Multiplicand | $\begin{array}{r} 4 \\ \times 3 \\ \hline 12 \end{array}$ <p>'4' is called Multiplicand</p> | $\begin{array}{r} 4 \\ \times 3 \\ \hline 12 \end{array}$ <p>'x' is called Into</p> |
| 15. | Multiplier | $\begin{array}{r} 4 \\ \times 3 \\ \hline 12 \end{array}$ <p>'3' is called Multiplier</p> | |
| 16. | Product | $\begin{array}{r} 4 \\ \times 3 \\ \hline 12 \end{array}$ <p>'12' is called Product</p> | |
| 17. | Multiplication Table | | $3 \times 1 = 3$ $3 \times 2 = 6$ $3 \times 3 = 9$ $3 \times 4 = 12$ $3 \times 5 = 15$ $3 \times 6 = 18$ $3 \times 7 = 21$ $3 \times 8 = 24$ $3 \times 9 = 27$ $3 \times 10 = 30$ <p align="right">Multiplication Table of 3</p> |

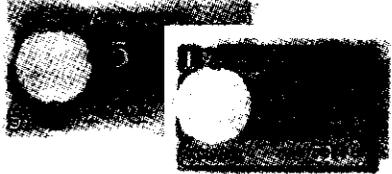
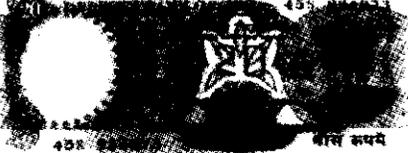
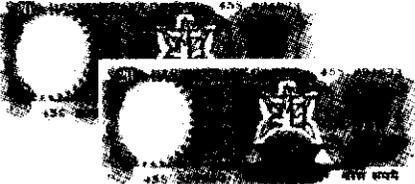
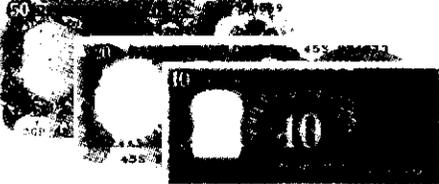
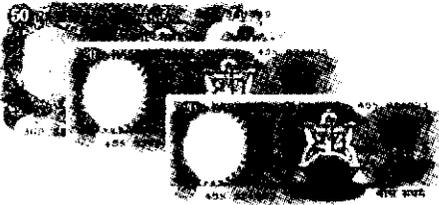
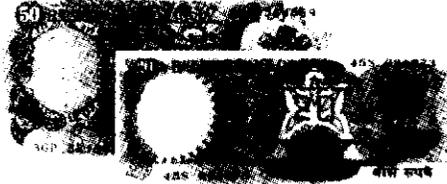
**PRIMARY LEVEL MATHEMATICS – VOCABULARY,
SYMBOLS AND ABBREVIATIONS**

CLASS - II

| | | | |
|-----|--------------------|--|---|
| 18. | Division \div |  | |
| 19. | Dividend | $9 \div 3 = 3$ | |
| 20. | Divisor | $\begin{array}{r} 3 \overline{) 9} \quad 3 \\ \underline{9} \\ 0 \end{array}$ <p>9 is called Dividend</p> | $\begin{array}{r} 3 \overline{) 9} \quad 3 \\ \underline{9} \\ 0 \end{array}$ <p>3 is called Divisor</p> |
| 21. | Quotient | $\begin{array}{r} 3 \overline{) 9} \quad 3 \\ \underline{9} \\ 0 \end{array}$ <p>3 is called Quotient</p> | $\begin{array}{r} 3 \overline{) 9} \quad 3 \\ \underline{9} \\ 0 \end{array}$ <p>0 is called Remainder</p> |
| 22. | Remainder | <p>3 is called Quotient 0 is called Remainder</p> | |

PRIMARY LEVEL MATHEMATICS – VOCABULARY, SYMBOLS AND ABBREVIATIONS

CLASS - II

| | | |
|-----|-----------------------|--|
| 24. | Coins |  |
| 25. | Paise |  |
| 26. | Rupees | |
| 27. | Ten Rs. 10-00 |  |
| 28. | Twenty Rs. 20-00 |  |
| 29. | Thirty Rs. 30-00 |  |
| 30. | Forty Rs. 40-00 |  |
| 31. | Fifty Rs. 50-00 |  |
| 32. | Sixty Rs. 60-00 |  |
| 33. | Seventy Rs. 70-00 |  |
| 34. | Eighty Rs. 80-00 |  |
| 35. | Ninety Rs. 90-00 |  |
| 36. | Hundred Rs. 100-00 |  |

**PRIMARY LEVEL MATHEMATICS - VOCABULARY,
SYMBOLS AND ABBREVIATIONS**

CLASS - II

| | | | | | | | |
|-----|-----------|-----------------|----------|-----------|-----------|-----------|-----------|
| 36. | DAYS | | | | | | |
| 37. | WEEKS | | | | | | |
| 38. | SUNDAY | | | | | | |
| 39. | MONDAY | DECEMBER | | | | | |
| | | SUNDAY | 1 | 8 | 15 | 22 | 29 |
| 40. | TUESDAY | MONDAY | 2 | 9 | 16 | 23 | 30 |
| | | TUESDAY | 3 | 10 | 17 | 24 | 31 |
| 41. | WEDNESDAY | WEDNESDAY | 4 | 11 | 18 | 25 | |
| | | THURSDAY | 5 | 12 | 19 | 26 | |
| 42. | THURSDAY | FRIDAY | 6 | 13 | 20 | 27 | |
| | | SATURDAY | 7 | 14 | 21 | 28 | |
| 43. | FRIDAY | | | | | | |
| 44. | SATURDAY | | | | | | |

PRIMARY LEVEL MATHEMATICS – VOCABULARY, SYMBOLS AND ABBREVIATIONS

CLASS - II

| | |
|-----|-----------|
| 45. | CALENDAR |
| 46. | LEAPYEAR |
| 47. | YEAR |
| 48. | MONTH |
| 49. | JANUARY |
| 50. | FEBRUARY |
| 51. | MARCH |
| 52. | APRIL |
| 53. | MAY |
| 54. | JUNE |
| 55. | JULY |
| 56. | AUGUST |
| 57. | SEPTEMBER |
| 58. | OCTOBER |
| 59. | NOVEMBER |
| 60. | DECEMBER |



JANUARY

| | | | | | |
|-----|---|----|----|----|----|
| SUN | | 5 | 12 | 19 | 26 |
| MON | | 6 | 13 | 20 | 27 |
| TUE | | 7 | 14 | 21 | 28 |
| WED | 1 | 8 | 15 | 22 | 29 |
| THU | 2 | 9 | 16 | 23 | 30 |
| FRI | 3 | 10 | 17 | 24 | 31 |
| SAT | 4 | 11 | 18 | 25 | |

FEBRUARY

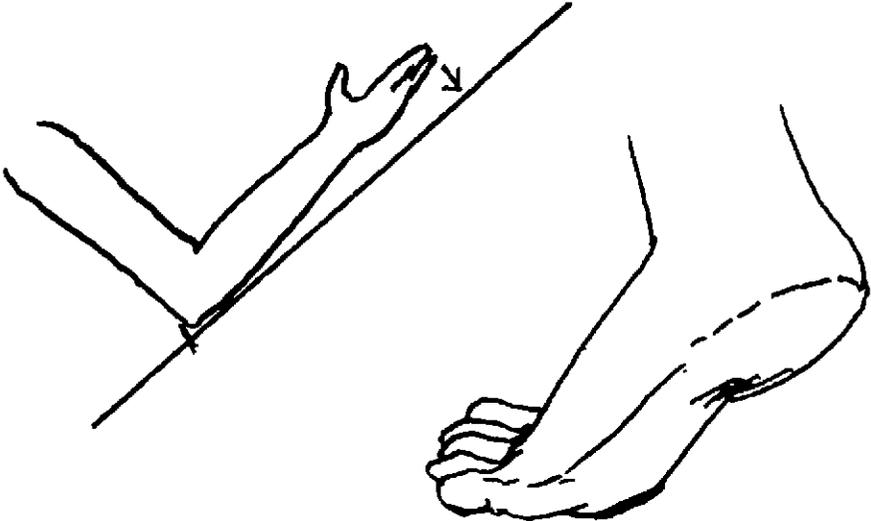
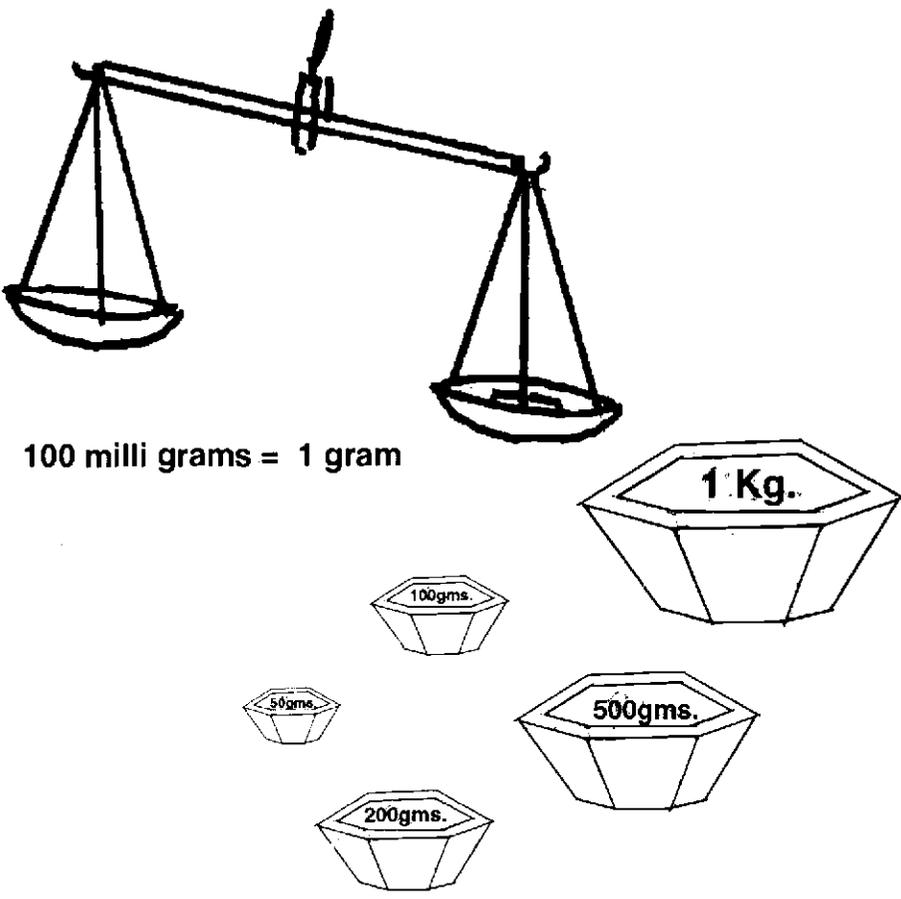
| | | | | | |
|-----|---|---|----|----|----|
| SUN | | 2 | 9 | 16 | 23 |
| MON | | 3 | 10 | 17 | 24 |
| TUE | | 4 | 11 | 18 | 25 |
| WED | | 5 | 12 | 19 | 26 |
| THU | | 6 | 13 | 20 | 27 |
| FRI | | 7 | 14 | 21 | 28 |
| SAT | 1 | 8 | 15 | 22 | |

MARCH

| | | | | | |
|-----|----|---|----|----|----|
| SUN | 30 | 2 | 9 | 16 | 23 |
| MON | 31 | 3 | 10 | 17 | 24 |
| TUE | | 4 | 11 | 18 | 25 |
| WED | | 5 | 12 | 19 | 26 |
| THU | | 6 | 13 | 20 | 27 |
| FRI | | 7 | 14 | 21 | 28 |
| SAT | 1 | 8 | 15 | 22 | 29 |

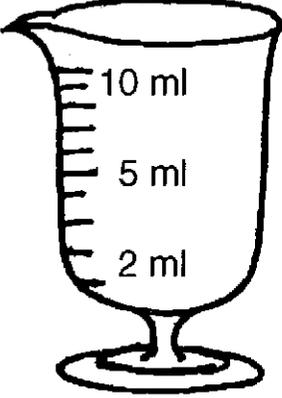
PRIMARY LEVEL MATHEMATICS - VOCABULARY, SYMBOLS AND ABBREVIATIONS

CLASS - III

| | | |
|----|---------------------|---|
| 1. | Non-Standard Units |  |
| 2. | Handspan | |
| 3. | Human feet | |
| 4. | Standard Units |  <p>100 milli grams = 1 gram</p> |
| 5. | Mass/weight | |
| 6. | Milligrams Mgms. | |
| 7. | Grams Gms | |
| 8. | Kilograms Kgms | |

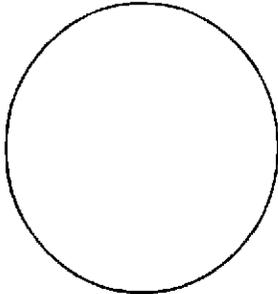
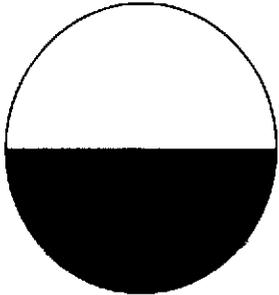
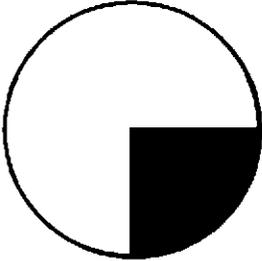
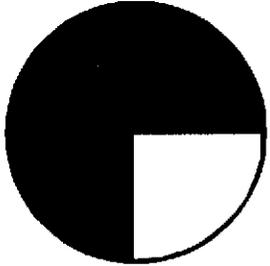
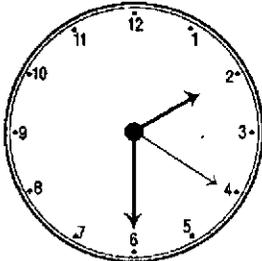
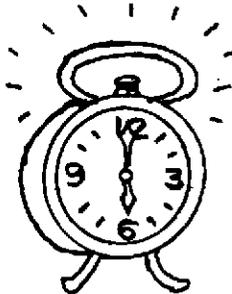
PRIMARY LEVEL MATHEMATICS - VOCABULARY, SYMBOLS AND ABBREVIATIONS

CLASS - III

| | | | |
|-----|-------------------|---|--|
| 9. | Length | | |
| 10. | Inch |  | |
| 11. | Feet ft | | |
| 12. | Centimetre cm |  | |
| 13. | Metre mtr |  | |
| 14. | Kilometre kmtr | | |
| 15. | Capacity | <p style="text-align: center;">Millilitre</p>  | <p style="text-align: center;">Litre</p>  |
| 16. | Millilitre ml | | |
| 17. | Litre ltr | | |

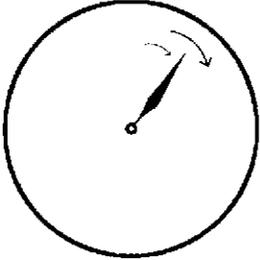
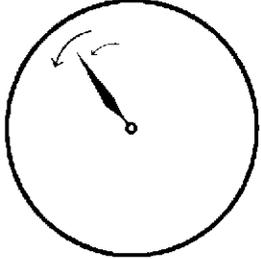
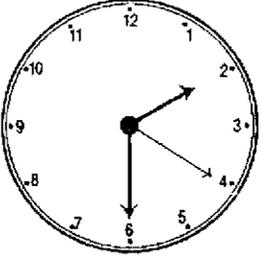
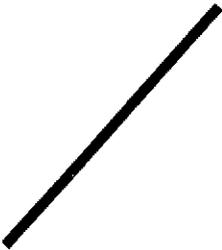
**PRIMARY LEVEL MATHEMATICS – VOCABULARY
SYMBOLS AND ABBREVIATIONS**

CLASS - III

| | | | |
|-----|---------------------|---|---|
| 18. | Fractions | | |
| 19. | Full |  |  |
| 20. | Half 1/2 | | |
| 21. | Quarter 1/4 |  |  |
| 22. | Three-fourth 3/4 | | |
| 23. | Numerator | Numerator | Denominator |
| 24. | Denominator | $\frac{2}{3}$ <p>'2' is called numerator</p> | $\frac{4}{8}$ <p>'8' is Denominator</p> |
| 25. | Time |  |  |
| 26. | Clock | | |
| 27. | Alarm | | |

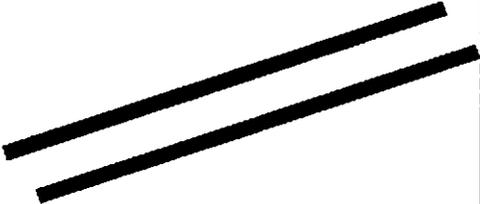
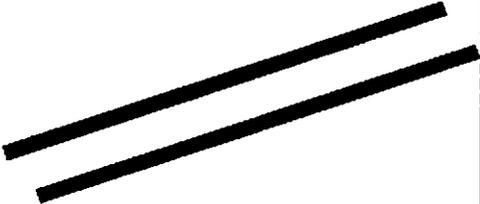
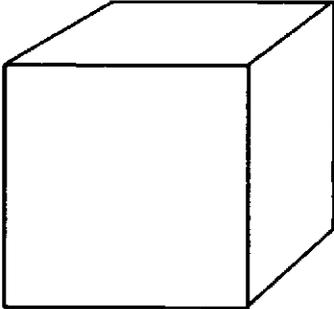
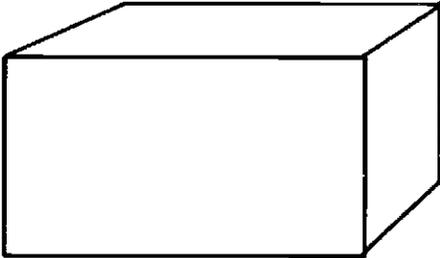
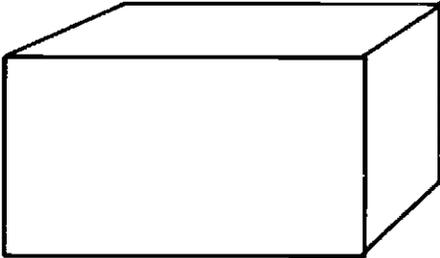
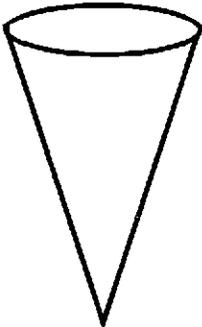
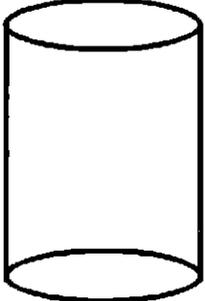
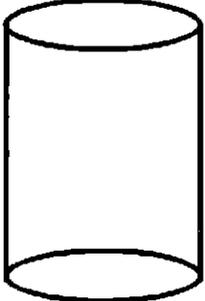
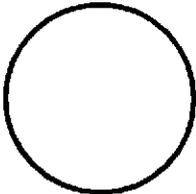
**PRIMARY LEVEL MATHEMATICS – VOCABULARY
SYMBOLS AND ABBREVIATIONS**

CLASS - III

| | | | |
|-----|---------------------------------|---|--|
| 28. | Clock-wise |  |  |
| 29. | Anti-clock wise | | |
| 30. | Hour hr |  <p>2 : 30 : 20</p> | <p>2 Hours</p> <p>30 Minutes</p> <p>20 Seconds</p> |
| 31. | Minute mt | | |
| 32. | Second sec | | |
| 33. | Straight/ Horizontal line |  |  |
| 34. | Vertical line | | |
| 35. | Curved line |  |  |
| 36. | Inclined line | | |

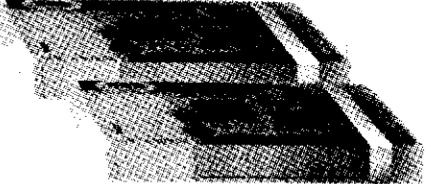
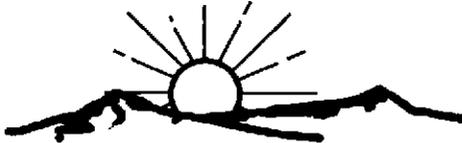
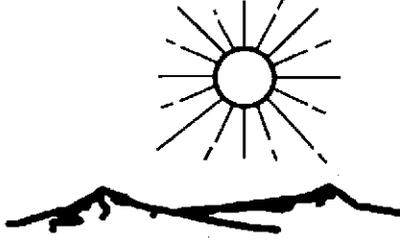
**PRIMARY LEVEL MATHEMATICS - VOCABULARY,
SYMBOLS AND ABBREVIATIONS**

CLASS - III

| | | | |
|-----|---------------|---|---|
| 37. | Parallel line |  | |
| 38. | Cube |  |  |
| 39. | Cuboid |  | |
| 40. | Cone |  |  |
| 41. | Cylinder |  | |
| 42. | Circle |  |  |

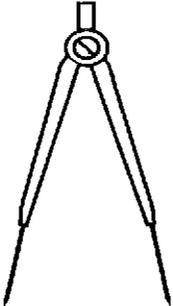
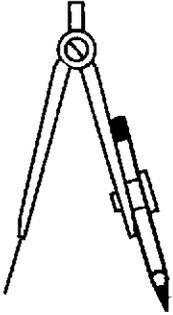
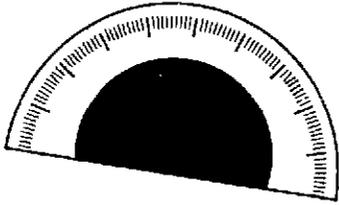
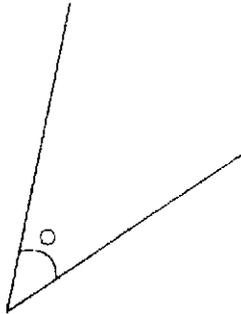
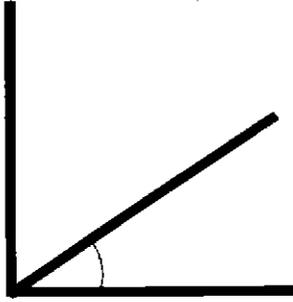
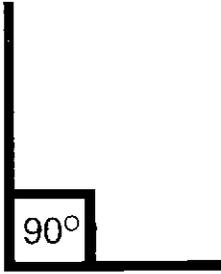
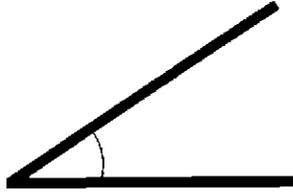
**PRIMARY LEVEL MATHEMATICS - VOCABULARY,
SYMBOLS AND ABBREVIATIONS**

CLASS - IV

| | | | |
|----|---------------------------------|--|--|
| 1. | Thousand 1,000 |  | |
| 2. | Lakh 1,00,000 | |  |
| 3. | Forenoon |  | |
| 4. | Afternoon | |  |
| 5. | Decimals | <p style="text-align: center;">3.28</p> | |
| 6. | Geometry Box | | <p>'.' is called Decimal Point</p> |

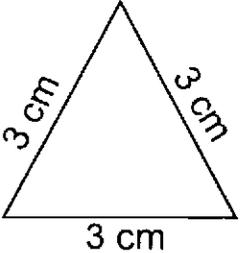
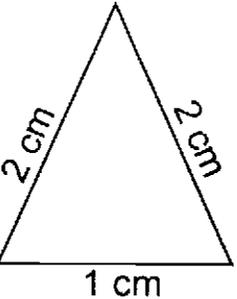
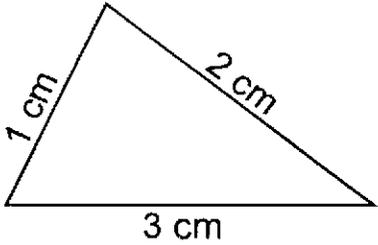
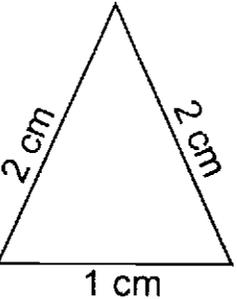
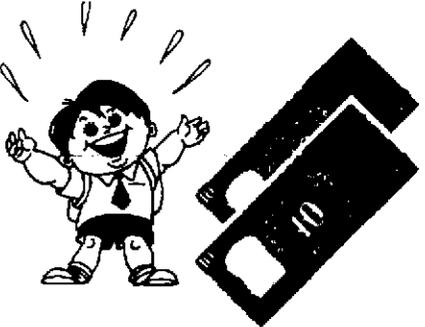
**PRIMARY LEVEL MATHEMATICS – VOCABULARY,
SYMBOLS AND ABBREVIATIONS**

CLASS - IV

| | | | |
|-----|--------------|---|---|
| 7. | Divider |  |  |
| 8. | Compass | | |
| 9. | Protractor |  |  |
| 10. | Degree | | |
| 11. | Angle |  |  |
| 12. | Right Angle | | |
| 13. | Acute Angle |  |  |
| 14. | Obtuse Angle | <p align="center">$(0^\circ - 90^\circ)$</p> | <p align="center">$(90^\circ - 180^\circ)$</p> |

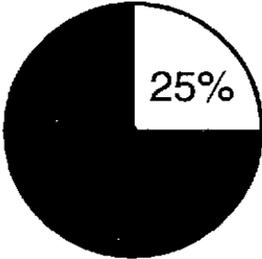
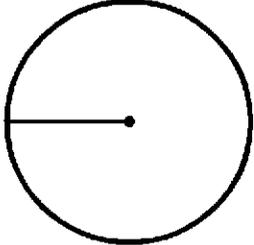
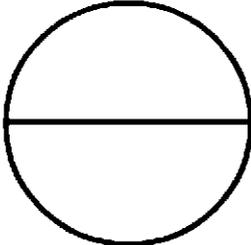
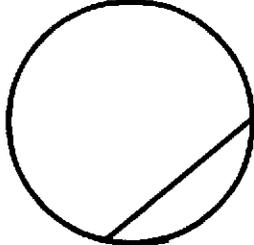
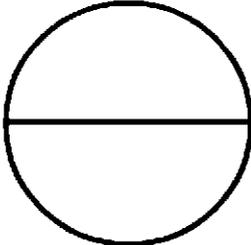
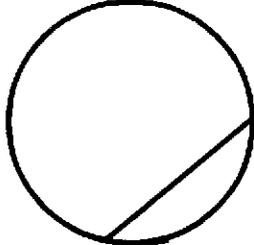
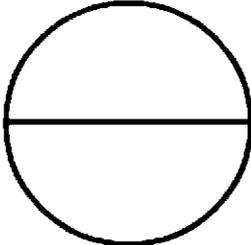
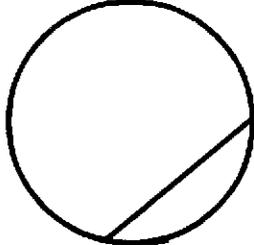
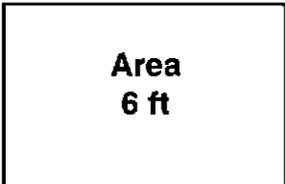
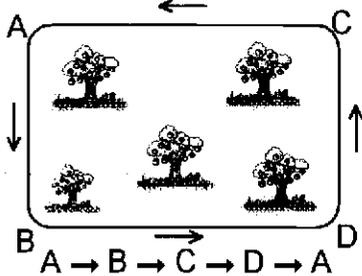
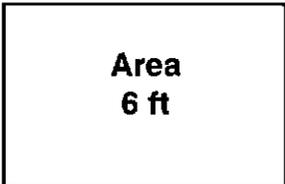
**PRIMARY LEVEL MATHEMATICS - VOCABULARY,
SYMBOLS AND ABBREVIATIONS**

CLASS - IV

| | | | |
|-----|----------------------|---|--|
| 15. | Scale |  | |
| 16. | Equilateral triangle |  | |
| 17. | Isosceles triangle |  |  |
| 18. | Scalene triangle |  | |
| 19. | Profit |  | |
| 20. | Loss |  | |
| 21. | Cost |  | |
| 22. | Interest |  <p align="center">Cost : Rs. 100/-</p> | |

**PRIMARY LEVEL MATHEMATICS – VOCABULARY,
SYMBOLS AND ABBREVIATIONS**

CLASS - V

| | | | |
|----|--------------------------------------|--|---|
| 1. | Highest Common Factor HCF | HCF of 24, 36 $\begin{array}{r} 24 \overline{) 36} \quad (1) \\ \underline{24} \\ 12 \end{array}$ | $\begin{array}{r} 2 \overline{) 4, 5, 8} \\ 2 \overline{) 2, 5, 4} \\ \hline 1, 5, 2 \end{array}$ |
| 2. | Least Common Multiple LCM | $\begin{array}{r} 12 \overline{) 24} \quad (2) \\ \underline{24} \\ 0 \end{array}$ H.C.F. = 12 | LCM of 4, 5, 8 LCM = $2 \times 2 \times 5 \times 2 = 40$ |
| 3. | Percentage % |  |  |
| 4. | Radius |  |  |
| 5. | Diameter |  |  |
| 6. | Chord |  |  |
| 7. | Area |  |  |
| 8. | Perimeter |  | The total length is perimeter of the garden |

PRIMARY LEVEL MATHEMATICS – VOCABULARY**PRIMARY LEVEL MATHEMATICS – SYMBOLS**

Name of the student: _____

Class: _____

| Symbols/ Abbreviations | Write the terms | Give examples |
|-----------------------------------|------------------------|----------------------|
| > | | |
| < | | |
| + | | |
| - | | |
| X | | |
| ÷ | | |
| = | | |
| Rs. | | |
| Ps. | | |
| 0° | | |
| Mts. | | |
| Km. | | |
| Kg. | | |
| gm. | | |
| Mtr. | | |
| Cms. | | |
| a.m | | |
| p.m | | |
| Hr | | |
| % | | |
| . | | |
| L.C.M. | | |
| H.C.F. | | |

ENHANCING STUDY SKILLS

CHAPTER-VIII

ENHANCING STUDY SKILLS

The school environment provides opportunity for the students to learn under the guidance of the teachers. It is important that the students become independent learners, which help in applying learnt skills as well as prepare themselves for examinations. Learning becomes meaningful only when the students use what is learnt effectively and contextually. Students need to have appropriate independent study skills for mastering school subjects. This may not naturally happen for all children and some may need help. This is all the more true in India, where the educational system, may it be central or state boards, the children are evaluated every year through written examinations. The content for an examination of three hours will comprise the learning of the whole academic year in each subject. This demands that the student learns, retains and approximately reproduces in writing, the correct answers to questions. Many potentially good students may be poor in these skills, which tends to reflect poorly in the progress report. Therefore, to prevent this, good study skills can be developed when the child is in primary classes and reinforced as he progresses through the classes.

Students with learning problems seem to have cognitive deficits such as deficit in thinking, reasoning, attention and memory. This leads to disorganized manner in which they handle tasks and situations. Teachers, peer group, parents and others thus find them 'strange'. They also have difficulty managing their academic tasks. Training in study skills will help the child become more organized.

Study skills

Study skills refer to the methods or strategies, a student adopts to learn the content of his course material effectively and independently and reproduce contextually. All of us have different study habits. Success of the student is largely dependent on the study habits one adopts. As there is a wide variation in study skills, there is no single foolproof method. However, there are a few strategies, which will certainly help in improving the study habits and developing good study skills.

Good study skills involve **listening** to what is being taught, **taking notes**, storing in **memory** the subject matter, systematic **organization** of the learnt subject matter and **responding** correctly when asked to answer questions in the subject - **orally or in writing**.

Developing good study skills

While delineating steps for good study skills, one has to remember the learner characteristics and learning styles. Major factors that affect learning style include:

- Motivation.
- Readiness to learn.
- Learning environment.
- Individual learning style.
- Material to be learnt.

Motivation: If the learner feels a **need** to learn, he will be motivated. For certain students ambition to achieve or to get admission to specific courses at post school level can be a motivating factor to study. Providing right direction and suitable reward for good performance can increase motivation in students.

Readiness: Readiness for learning is very important for the learner, as this has direct implication on the study skills. If the learner has the ability to comprehend the content being taught, helping him to organize himself with study habits will be relatively easier. If a student, for instance, does not possess basic computation skills taught at Class II level, any amount of maths tuitions and extra hours spent in mathematics at class IV level will be futile. His readiness level being class II, the teaching has to be at **that** level, reinforced by effective study skills.

Learning environment: A learning environment with minimum distractions, good seating arrangement with light and ventilation will strengthen good study habits. While studying, lying on the bed, radio or television switched on or an open window with the view of the street will lead to least learning by the student.

Individual learning style: Some students prefer to sit through late night and study, while some may like to wake up early in the morning. Reversing this system may not work out well for them. Some like to read aloud while some may like to write down while studying. These are only examples and there is considerable impact of individual differences in learning styles. Therefore, before adopting a certain strategy for studying, this factor must be kept in mind.

Learning material: Subject areas like maths require working out on paper or chalk board while history needs paraphrasing, finding main idea and sequencing. The strategy adopted for studying thus, will vary based on the subject matter.

Whatever is the study material, 'when', 'where' and 'for how long' to study has to be first sketched out which depends on the above mentioned factors.

Assessment of study skills

Criterion referenced testing methods help in assessing study skills of students. However, there are certain western published tests exclusively for testing study skills, some of which include:

Study skills test: McGraw Hill Basic Skills system.

Cornell Learning and Study Skills Inventory.

Wisconsin Test for Reading Skill Development: Study skills.

(Ref: Wallace and Kauffman, 1986)

These are in English and validated for American target population. In India, there are no such specific tests. However, carefully constructed CRTs will help in assessing the learning style

of a child, which leads to suitable planning. This can include items to check:

- Paraphrasing - main idea.
- Notes taking.
- Memorizing.
- Summarizing.
- Test taking.

These tests can be constructed from the textbook, work book and guide book of the student with a number of items for each area to be tested. This will help in consistency in identifying strengths and needs of the student. The test should be very carefully structured and systematically planned and executed for getting precise and unambiguous information.

Example :

Objective : To assess the ability to take notes.

Materials needed: A video taped lecture by a teacher.

Procedure : The student is asked to watch and listen to the lecture carefully once and take notes. The teacher should analyze the notes taken to assess the ability of the student.

Note : The lecture should be appropriate to the student and is at his class level.

Criteria : Student should have written 80% of the key concepts of the lecture in his note book (The notes can have abbreviation/ short forms).

Look for and find something about the student that is worth appreciation. This helps in establishing rapport, as well as improving his self-esteem.

Techniques for developing effective study skills:

There are a few proven techniques for developing effective study skills. This includes:

- SQ3R.
- Cognitive control (metacognitive training).
- Causal attributions.
- REAP.
- EVOKER.
- Self instruction and monitoring.
- Memory strategies - semantic mapping.
- Academic attack strategies.
- Test taking.

SQ3R:

Introduced by Robinson (1961), this is one of the best known methods and is widely used. This involves five steps - Survey, Question, Read, Recite, Review.

1. Survey:

This refers to the quick scanning of the entire reading material. Such browsing will help in knowing the general coverage of the content, level of approach, chapters, sub-chapters, visuals and graphics. In short this will provide an overview.

2. Question:

The survey will enable the student to formulate questions, (i) should I study this content, (ii) why should I study, (iii) what should I study, (iv) how much to study, (v) how to study. On finding answers to this, he can select specific areas and structure his study.

3. Read:

The student will read the selected area as decided in 'question' phase and read the content.

4. Recite:

To facilitate memory, the student would close the book and recite what is read without looking into the book.

5. Review:

To confirm the correctness of what is recited, the student would review the content and would verify answers.

Metacognitive training

Simply put, metacognition means thinking about one's own thinking process. It is one's awareness of how one solves problems, how one remembers or comprehends written materials.

Cognition refers to those mental activities that involve mental processes such as thinking, reasoning, understanding, memory and problem solving. One way of studying cognition is to find out how people encode, organize, interpret, store and respond to stimuli. The learning process consists of 3 stages namely, 1. selectively attending to the stimulus, 2. processing the received information, 3. storing information for retrieval when required. Cognition enables an individual to identify, interpret, organize and apply information (Mercer, 1979).

Metacognition refers to the awareness one has about his own cognitive processes and products. The metacognitive processes are related to the problem solving skills. Thus an efficient person in problem solving will have a conscious control over his planning, executing

and managing his activities. In essence, metacognition involves two components, 1. Awareness and 2. Regulation. Loper (1982) differentiates cognitive training from metacognitive training in the following way.

Cognitive training involves instruction in task specific strategies.

Metacognitive training focuses on instruction in techniques to monitor and appraise the use of cognitive strategies. If teachers are sensitive to the cognitive and metacognitive skills of the students and suitably transact the curricular content, learner efficiency can be improved. This requires a **conscious plan, implementation and monitoring** of strategic approaches to learning and **problem solving**.

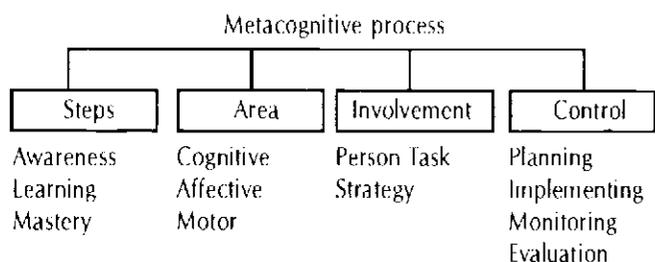
Two major reasons for failure in learning are, 1. Lack of awareness of appropriate cognitive strategies, 2. Lack of motivation.

Metacognitive approach allows a student to use effective learning strategies, monitor and regulate their own activities. Regulation of cognition refers to the executive control within information processing.

Metacognitive phenomenon is best described by the following four factors.

1. Knowledge about knowledge and conscious control of one's own cognitive process.
2. Knowledge about variables affecting cognitive process and problem solving.
3. Strategy acquisition and strategic production.
4. Regulation of cognition through use of control executive mechanism i.e., planning, organizing, monitoring and checking outcome.

One should acquire knowledge of his own (a) metacognitive process, (b) metacognitive variables, (c) metacognitive base, (d) metacognitive control executive functions.



Cognitive behaviour modification (CBM) is one effective method for helping the student with his metacognitive process. It is 'behavioural' as it is structured and uses reinforcement techniques and focuses on the particular problem (it ignores antecedent or ethiology as in behaviour approach). It is 'cognitive' in that its goal is to produce change in the individual by modifying his **thinking** (Mercer, 1979). The CBM has its emphasis on providing student with **strategies** on learning and focuses on teaching the learner self initiative.

Causal attributions:

Many a time, we find people attributing their success or failure to a number of internal or external causes. Wallace and Kaufman (1986) refer to this causal attribution, which is also known as locus of control as one of the factors in formulating techniques for study skills. For instance, an internal cause can be relating success or failure to the efforts put in by a person for writing an examination. An example of external cause can be a student believing that success or failure is dependent on how well a teacher teaches.

Students with learning problems tend to have external locus of control and avoid personal responsibility for their success or failure. Some may have an attitude of helplessness, believing

that they cannot do anything to be successful. This is also known as 'learnt helplessness'. The study technique here involves encouraging the feeling of 'I can' in the student. This will improve their internal locus of control.

REAP:

REAP is a method introduced by Eanet and Manzo (1976). REAP is an acronym for Read, Encode, Annotate, Ponder.

Read: The student reads the given material.

Encode: The student closes the reading material and writes in his own words what is read.

Annotate: He translates the author's idea into his own words, summarizes and write with suitable other quotations and references where appropriate.

Ponder: The student discusses with others about the lesson, thinks about it and uses contextually.

EVOKER:

Introduced by Pauk (1963) this method suits best for prose texts like English, language and history. Evoker refers to Explore, Vocabulary, Oral reading, Key ideas, Evaluation and Recapitulation.

Explore: In SQ3R, the survey stage can be called equivalent to this stage where the student understands overall message.

Vocabulary: Key words, places, events and such details are noted. For instance, history is basically 'what', 'who', 'when' and 'where' is it not? This step helps in getting such key information.

Oral reading: The student reads aloud so that the content is understood.

Key ideas: The student notes down the key ideas, organizes sequentially to prepare for examination.

Evaluation: The student formulates answers to questions as expected for examination.

Recapitulation: He now reads the complete prepared material, re-reads and gets ready for examination.

Self-instruction and monitoring

Language plays a very important role in the over all cognitive development. There are three stages through which the children gain control over their behaviour (Cole and Chan, 1990).

First, the external speech of adult.

Second, their own overt speech/expression.

Third, their own covert speech.

The last stage, the inner language is considered to be the mechanism, which enable the child to perform cognitive operations. Therefore, the training sequence will include:

1. **Cognitive modeling:** (by the teacher) She verbalizes as she carries out activities.
2. **Overt external guidance:** Student performs with teacher guidance.
3. **Overt self guidance:** Student performs saying aloud. This helps the teacher to monitor the student and correct.
4. **Faded self guidance:** Student performs whispering self instruction.
5. **Covert self instruction:** Student quietly performs.

Self-monitoring

This is a widely used technique in metacognitive approach where a student is trained to generate his own questions for a given topic. This enhances comprehension and recall.

To do this:

- Involve student in active interaction with the text.
- Relate prior knowledge to the text.
- Make the activity goal/purpose oriented.
- Direct attention to important sections of the text.
- Check for difficulties in comprehension.
- Work out means of overcoming difficulties.

For instance, a self-monitoring process can be:

1. Why am I reading this?
2. What is the main idea (underline/jot down)?
3. What question can I ask about the main idea?
4. What will be the answer?
5. Is it relevant and meaningful?

Reciprocal teaching

This is an approach that builds a dialogue between the teacher and the learner for the purpose of finding meaning to a text (Plainscar, 1986, as quoted in Cole and Chan, 1990).

To do this :

- Summarize
- Generate questions
- Clarify
- Predict

One important element of this technique is scaffolding where the teacher models and demonstrates how to use the four strategies and uses guided practice by prompting the student to summarize, self-question, clarify and predict step by step.

Attributional retraining

This is a technique specifically useful for those with poor or maladaptive motivational patterns, which is attributed to insufficient effort or ineffective strategies. This involves having student say loudly the factors responsible for his failure or success. The specified wording of the students in his attribution statement is very critical for the effectiveness of the programme.

Such overt speech and statements help them change their way of thinking as the teacher reacts to the attributions by further questioning. She helps with strategies on task completion through attributional retraining. Studies (Cole and Chan, 1990) have shown that cognitive and metacognitive instructions have helped in reducing impulsivity, increase on-task behaviour and improve performance in academics, change students' causal attributions, develop abilities to cope with failure, promote motivation and improve interpersonal skills.

Attributional training strengthens internal locus of control in students.

Memory strategies:

Poor memory is one common characteristic among children with learning problems. Memory strategies are designed to help students retrieve information quickly.

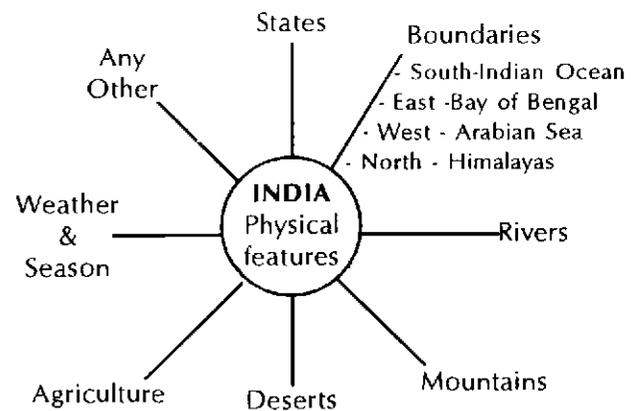
Common memory strategies are:

- Rehearsing by repeating the content to oneself.
- Classifying, grouping and clustering information for easy recall.
- Creating visual images of the content.
- Associating or developing acronyms or pairing with other information.

- Self questioning, responding and checking for accuracy of information.
- Using mnemonics - this involves addition or elaboration of the information so that association can be formed. While retrieving, association helps in recalling. For example, remembering the nine planets in sequence is difficult. A mnemonic here can help. 'My Very Educated Mother Just Showed Us Nine Planets'. The first letter of each word stands for a planet in sequence starting from the one nearest to Sun - Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, Pluto.

Semantic mapping

Semantic mapping or concept mapping helps the student make insightful judgment on content selected to be presented in an order to recall information when needed. One way of semantic mapping is associating the content to a clock dial (see figure).



Semantic mapping

By this, while giving an examination, the student will tend to recall what detail was in 3 position (rivers) or what was in 6 position (deserts) of a clock and so on. Thus, remembering all details becomes possible. The sub details can be marked in each line (as

shown). Those content areas, which do not have a logical reason to relate for memory can be best remembered by mnemonics or semantic mapping.

Try this!

Show for 2 minutes, the words listed below and tell the children to recall all the words in the same order.

- | | |
|---------------|---------------|
| 1. morning | 11. repair |
| 2. banana | 12. mother |
| 3. forest | 13. film |
| 4. bus | 14. exam |
| 5. lighthouse | 15. politics |
| 6. bread | 16. hindustan |
| 7. economics | 17. rain |
| 8. monkey | 18. hospital |
| 9. accident | 19. fast |
| 10. beach | 20. booking |

When they find it difficult to do so, tell them they can. Then read the following story and ask them to listen carefully.

"One **morning**, I found **bananas** brought from the **forest** by a **bus**, which was heading towards **lighthouse**. But, I wanted to have **bread** before I left for my **economics** exam. As I was going, I saw a **monkey** crossing the road and meeting with an **accident** under a vehicle going towards the **beach** and it was under **repair**. My **mother** was upset and told my brother, not to go for **film** and take me to **exam**. He was interested in **politics** of **Hindustan**. It started to **rain** and I was afraid, I will end up in **hospital**, if I go **fast** and my brother was worried about ticket **booking**."

Now, tell them to recall. You will find to your surprise and to their surprise that they can after all. That too, 20 unconnected words in the sequence of presentation!

Academic Attack Strategies:

Students with learning problems often, do not know how to face academic problems. Since, they are usually disorganized, systematic, and logical methods to find solutions to problems is limited in them. Therefore, they need to be taught these strategies. Wallace and Kaufman (1986) gave three strategies - (i) the class of tasks to be taught - type of academic problem, (ii) specific strategy to be used - listing plan of action, (iii) preskills necessary to use the strategy - task analysis to determine the prerequisites for using the strategy.

Example:

1. Task class :

Understanding boiling point and freezing point.

2. Attack strategy :

- list items that reach boiling point/ freezing point.
- describe measurement methods and units used.
- Experiment and confirm.
- Jot down points in sequence.

3. Prerequisite skills :

Concept of 'boil', 'freeze'. Concept of liquid, solid, gas. Ability to read units.

Advanced Organizer Technique

This technique revolves around the idea that if the student is aware of what he is going to read in advance, in terms of what it is about, what the main idea is, what is the purpose of reading and so on, the act of reading is easy by the student. Therefore, a discussion by the teacher and the student on the lesson to be done with opportunity for the student to 'think' followed by reading is the technique here. For example, if it is a lesson about picnic, the teacher and student can discuss on the picnic.

The teacher should carefully lead the discussion in the line of the text and try to get answer from the students to questions like 'After all this planning what do you think people on picnic will do if it rains?' and such other details. The picnic related keywords and the difficult words will be noted by the teacher. The teacher and the learner will discuss the words on the word list. Then the teacher would introduce the text to read. This will help the student read with ease.

Test taking:

Ultimate academic achievement of the student is reflected in his test scores. Test taking skills, therefore, is a very important component of study skills. The various aspects of test taking include time management, style of presentation and content accuracy; sensitizing the students and giving clues will help in test taking. Some tips are:

- Read the entire question paper.
- Note the time allotted.
- Note the weightage for each specific question.
- Read the directions very carefully.
- Look for keywords in the questions.
- Read and re-read the direction and questions completely.
- If question paper is not to be returned, note down your keywords as your select questions, next to it.
- Allot time to each question based on the weightage/marks to the questions so that you have enough time to complete answering all questions.
- Answer the well known questions first. Remember to write the question number in the margin.
- On completion, review carefully - check for question numbers, spelling or grammar

errors, compliance with instructions and neatness.

- If the question paper has objective part and essay, do the objective part first as many a time it gives clue to essay questions.
- At home practising answering a number of question papers within the prescribed time will help in good performance on the day of examination.
- Reviewing the student's previous test paper by the teacher and student together will help in analyzing error and avoiding for the next test.
- Having sleepless nights prior to examinations are really not helpful in learning and retention. Studies show that for good memory and efficiency, adequate sleep is essential.
- Wherever possible, illustrations, graphical expressions and maps must be done neatly with pencil/colour pencil as the case may be and labeled. To encourage this, while studying provide the student with a paragraph and instruct him to convert it into diagram, flow chart or graph as the case may be.
- When answer books are returned after correction, go through carefully to check for errors. It is a good idea for the student and the teacher to do it together.

Teachers play a very important role in helping children with appropriate study skills leading them towards learning as well as preparing for examinations. The test scores are important for making decisions on the future of the student. Therefore, teachers have to focus their attention on enhancing study skills. The strategies given briefly in this chapter can help in sensitizing the children about their learning styles and self-monitor their study habits.

One last word.....

Difficulties in learning academics does not mean the end of everything as many parents think. If a child does not score good marks in academics, try to help him using the remedial methods as briefed in this book. Simultaneously, keep looking for other abilities in the child. Sharpening those skills may help him shine in that area. Dr.Howard Gardner has proposed the concept of multiple intelligences including musical intelligence, bodily kinesthetic intelligence, spatial intelligence, analytical intelligence, linguistic intelligence, interpersonal intelligence and intrapersonal intelligence. A child may be good at any of these areas and if identified and given due attention, instead of being labled as 'low achiever', he may be celebrated as a good sportsman, musician, artist, stage entertainer or a public relations officer. Always highlight the strengths in the student. Students are like unpolished stars, which come in varied sizes and shapes. It is a good teacher, who shines them to bring out the best in them.

Good luck!

"The real issue in education is to see that when the child leaves the school, he is well established in goodness - both outwardly and inwardly."

J.Krishnamurthy

REFERENCES AND ADDITIONAL READINGS

- American Psychiatric Association (1987) *DSM III R*. Washington DC: American Psychiatric Association.
- Ariel, A. (1992) *Education of children and adolescents with learning disabilities*. New York: Maxwell Macmillan International.
- Asklock, R.B (1990), *Error patterns in computation: A semi-programmed approach (5th ed.)* New York: Merri / Mac millan.
- Atherton, G. (1989) *In Special need*. Edinburgh: Scottish consumer council. pp 197.
- Bartel, N.R (1990) *Problems in Mathematics, Teaching students with learning and behaviour problem (5th ed, pp 289-343, Boston: Allyn and Bacon.*
- Bender, W.N. (1992) *Learning disabilities: Characteristics, identification and teaching strategies*. Boston: Allyn and Bacon. pp 351-352.
- Bender, W.N.(1992) *Learning disabilities*. London: Allyn and Bacon.
- Bender, W.W. (1993) *Learning disabilities*. Boston; Andover Medical Publisher Inc.
- Brown, J.L. (1970) *Effects of logical and scrambled sequences in mathematical materials*. *Journal of educational psychology* - 61, 4-45.
- CCLD (1997) *Early Warning Signs of Learning Disabilities*. [Http://www.ldonline.org/ld_indepth/general_info/cclid_early_warning. Html](http://www.ldonline.org/ld_indepth/general_info/cclid_early_warning.html).
- Choate, J.S, Enright, R.E, Miller, L.J, Potect, J.A, & rakes T.A, (1992) *Curriculum based assessment and programming*, Allyn & Bacon, Inc.
- Cole, P.G. and Chan, L.K.,S. (1990) *Methods and strategies in Special Education*. New York: Prentice Hall.
- Copeland (1979).
- Cox, L.S. (1975) *Pragnosing and remediating systematic errors in addition and subtraction computation*. Arithmetic teacher.
- Department of Education, MHRD (1991) *Minimum levels of learning at primary stage*. New Delhi: NCERT.
- Department of Education, MHRD (1992) *Education of the Handicapped*. In N.Venkataiah (Ed.) *Readings in Special Education*.
- Department of Education, MHRD (1992) *National Policy on Education, Plan of Action*. New Delhi: NCERT.

- Ekwall, E.E. and Shankar, J.C. (1983) *Diagnosis and remediation of the disabled reader*. London: Allyn and Bacon.
- Enright, B.E (1983) *ENRIGHT diagnostic inventory of basic arithmetic skills*, N.Billerica, MA: Curriculum associates.
- Enright, B.E (1985) 'ENRIGHT' Computation series (Books A-D) Billerica MA - Curriculum Associates.
- Fawcett, A.J. and Nicolson, R.I. (1995) *Malta Diagnosis 1.2: The Dyslexia Early Screening Test (Submitted to the Irish Journal of Psychology)*.
- Harwell, J.M. (1989) *Complete learning disabilities handbook*. New York: The centre for applied research in education.
- Horn, W.F. and Packard, T. (1985) *Early identification of learning disabilities*. *Journal of Education Psychology*, pp. 597-607.
- Johnson, L.J., Gallagher, R.J., Cook, M. and Wong, P. (1995) *Critical Skills for Kindergarten: Perceptions from Kindergarten Teachers*. *Journal of Early Intervention*, Vol.19 (4), 315-349.
- Johnson, S.W. and Morsky, R.L. (1980) *Learning disabilities*. New York: Allyn and Bacon. pp 9-14.
- Kirk, S.A. and Chalfant (1984) *Academic and developmental learning disabilities*. Denver: Love Publishing.
- Lawrence: University of Kansas, Institute for research in learning disabilities.
- Lerner, J. (1993) *Learning Disabilities*, Houghton Mifflin Company, U.S.A.
- Leigh, J. (1986) *NJC LD Position papers V-VI*. *Learning Disabilities Quarterly*, 9, 156-157.
- Lola, J.M., Shirley, M. F., Donna, C.J., (1981) *Harcourt Brace Jovanovich, Mathematics*.
- Loper, A. (1982) *Metacognitive training to correct academic deficiency: Topics in Learning and Learning Disabilities*, 2 (1) 45-52.
- Mann, P.H., Suiter, P. and McClung, R.M. (1992) *A guide for educating mainstreamed students*. London: Allyn and Bacon.
- Mency, P.T. (1995) *Complete book of illustrated reading and writing activities for the primary grades*. New York: The centre for applied research in education.
- Mercer, C.D. (1969) *Students with Learning Disabilities*. Columbus: Merrill; pp.216.
- Mercer, C.D. (1987) *Students with learning disabilities*. Columbus: Merrill Publishing Co.
- Mercer, C.D. and Mercer, A.R. (1993) *Teaching students with learning problems 4th edition*, Mc Millan publishing company, USA.

- Ministry of Information and Broadcasting (1993) *India 1993 - A reference manual*. Government of India, pp 84.
- Myklebust, H.R. (1965) *Development and disorders of written language (Vol.1)*. Picture story language test. New York: Grune & Stratton.
- Narayan, J. (1999) *Grade level assessment tool for children with learning problems*. Secunderabad: NIMH_ICSSR.
- NCERT Syllabus, *Primary level Minimum levels of learning*.
- Piaget, J. (1965). *The child's conception of number*, New York: W.W. Norton.
- Ramaa, S. ((1996) *Package on Learning Disabilities*. Mysore: Regional Institute of Education.
- Rosner, J (1985) *Helping children overcome learning difficulties (second edition)* Walker & Company, New York.
- Silver, A.A. and Hagin, R.A. (1990) *Disorders of learning in childhood*. New York: John Wiley and Sons, pp.263-267.
- Smith, C.R. (1990) *Learning disabilities - The interaction of learner, task and setting*. Boston: Allyn and Bacon. pp.316-318 & 345-346.
- Smith, C.R. (1991) *Learning Disabilities*. Boston: Allyn and Bacon, pp.166.
- The Education Act (1981)* London: HMSO.
- Thressiakutty, A.T. (2000) *Mathematical Achievement Analysis Matrix*, M.Phil. Dissertation, Madhurai.
- Wallace, G. and Larsen, S.C. (1978) *Educational assessment of learning problems: Testing for teaching*. Boston: Allyn and Bacon.
- Wallace, G. and McLoughlin, J.A. (1975) *Learning disabilities*. Ohio: Charles and Merrill.
- Warner, M.M., Alley, G.R., Schumaker, J.B., Deshlet, D.D., & Clark, F.L. (1980). *An epidemiological study of learning disabled adolescents in secondary schools: Achievement and ability, Socio economic status and school experiences (Report No.13)*.
- Wren, P.C. and Martin, H. (1993) *High school English grammar and composition*. New Delhi: S.Chand & Company Ltd.
- Hammill, D.D. and Bartel, N.R. (1982) *Teaching Children with learning and behaviour problems*. Boston : Allyn and Bacon pp-1-2.

SOME USEFUL WEBSITES

1. www.nimh.nih.gov/publicat/learndis.htm
2. www.doh.gov.uk/learningdisabilities
3. www.nldline.com
4. www.ldpride.net
5. www.mencap.org.uk
6. www.ld.ucsf.edu
7. wwwl.archive.official-documents.co.uk/document/cm50/5086/5086.htm
8. www.esapld.co.uk
9. www.nifl.gov/nalldtop.him
10. www.rnld.co.uk
11. www.familyeducation.com
12. www.learningdisabilities.org.uk
13. www.icdi.wvu.edu/others.htm
14. www.cldinternational.org
15. www.ala.org
16. www.nichcy.org
17. www.connects.org.uk
18. www.ldiec.net
19. www.microsfot.com/enable/casestudy/georgia.aspx
20. www.abilityhub.com/speech/speech-ld.htm
21. www.apld.org.uk
22. www.kidshealth.org/kid/health_problems/learning_problem/Learning_disabilities.html
23. www.coping.org/copingbook/learndis.htm
24. www.theparentreport.com/resources/ages/preteen/education/324.html
25. www.google.com - Origin of English Language
26. www.indya.com - Origin of Hindi Language

**Provisions for Children with
Learning Problems
Circulars, Government Orders and
Information**

GOVERNMENT ORDERS

No.SSC 1095/[1601]/HSC-I A
School Education Department
Mantralaya, Vistar Bhavan
MUMBAI 400 032

Date: 27th March, 1996

To

The Education Director
State of Maharashtra
PUNE

SUB: Extension of facility to the student in their curriculum and examination to those who are suffering from learning disability.

The Maharashtra State Board of Secondary and Higher Secondary Education vide their letter No.RM/Pathyakram/8078, dated 21st October 1995, has allowed the facility for the students suffering from learning disability at the secondary level examination. Copy of the same is enclosed herewith.

The facility and the scheme of examination which has been extended to the student suffering from learning disability, as suggested by the Maharashtra State Board of Education, will be applicable in toto to the students in the 9th and the 10th standard.

The above instructions may please be communicated to all schools in the State by a circular and the compliance of the same be reported to the Government, immediately.

Sd/-
(V.P. Pawar)
Section Officer

Copy:

The Secretary, The Maharashtra State Board of Secondary Education and Higher Education,
Pune.

The Private Secretary to the Minister for School Education.

MAHARASHTRA STATE BOARD OF SECONDARY & HIGHER SECONDARY EDUCATION, SION (E), MUMBAI 400 022

REF : CIRCULAR NO. MDB/

DATED 29.12.95

Vide above referred circular you have been informed regarding the subjects and examination to be held in March 1996 as per revised syllabus in respect of Blind, Deaf and Dumb as well as Spastic students. Recently, Dyslexia, Dysgraphia and Dyscalculia cases having learning disability have been included in the list of disabled students. You are hereby informed that such students have been offered some concessions.

1. In this regard, following clarification is offered which may please be brought to the notice of the Secondary teachers and students of your school.

(A) Two science subjects namely, (1) Physiology and Hygiene (77) and (2) Home Science (77) have been offered two optional papers. Specimen of these question papers with mark allocations is enclosed herewith.

(B) Following subjects from the list of subjects on work experience in respect of such students in the old curriculum will not be included in the new pattern of examination.

- 1) Wood work.
- 2) Photography.
- 3) Metal fitting craft.
- 4) Clay work.

(C) Following subjects concerning work experience from the old curriculum are renamed in the revised curriculum as follows:

| Name of the subject in The old curriculum | Name of the subject according to new curriculum |
|--|---|
| 1. Tailoring & Cutting | Machine sewing & maintenance of sewing machine (K-1) |
| 2. Embroidery & Needle Work | Hand Embroidery (J-9) |
| 3. Electronics | Elements of Electronics (K-6) |

(D) There is no change in the name of the following work experience subjects.

- 1) Drawing & Painting (M-6)
- 2) Beautification (M-8)
- 3) Typewriting English/Marathi (M-4/M-5)
- 4) Book Binding (M-7)
- 5) Indian Music (Vocal & Instrumental) (M-3)

Board will conduct examinations for 8 subjects (75 & 100 marks) from (C) & (D) above.

Work Experience subject chosen as option for language subjects will carry 100 marks. Out of the 8 subjects mentioned above, syllabus for Book Binding and Beautification is unchanged, whereas the syllabus for remaining 6 subjects is revised. This curriculum is included in the Booklet of revised syllabus for IX/X Standard.

There will be a paper for 75 marks for these subjects for those who choose these subjects in addition to Arithmetic. Rough formats of question papers (100 marks & 75 marks) on these subjects have been prepared and enclosed herewith.

The above information may please be brought to the notice of the concerned teachers and students. If any dyslexia, dysgraphia or dyscalculia student has appeared through your school, information in respect of such student together with medical certification from Government Surgeon may be forwarded separately to the Board. If such students have not chosen the subjects according to the revised scheme in their applications, changes necessary may be conveyed so that the Board may be able to carry out appropriate corrections.

Sd/-
Sr. Divisional Secretary
Maharashtra State Secondary &
Higher Secondary Education Board
Mumbai Divisional Board
Sion (E), Mumbai 400 022

To

The Principals of all the recognized Secondary Schools for information.

The Board has considered some concessions to disabled students (which includes Blind, Deaf and Dumb and Spastic students). There are some students other than those above, who have learning disability. In order to enable them to show progress in education, Board has considered some concessions in the S.S.C. Examination.

There are three types of learning disabilities such as Dyslexia, Dysgraphia and Dyscalculia. Physically, these students appear like general students. Their disability does not appear outwardly. Such students are not mentally retarded, some times their mental power is brighter than the general students. But the information received from organs does not get analyzed properly in brain. As such they make mistakes in writing and in calculations. For example, 4125 they write as 2154, motor car they write as 'tomr cra'. Due to this they are lagging behind in their studies. To overcome their inferiority complex and with a view to help such students, Board has decided to provide some concessions.

Concessions approved by the Board

1. **Dyslexia and Dysgraphia students:** Any two languages out of the I, II and III language group. But out of these two, one language should be English (I or III language). If they are willing to opt for third language they can do so. In other case, they can opt for one subject from work experience which will carry 100 marks, exam of which will be conducted by the Board.
2. **Dyscalculia students:** These category of students will have Arithmetic (150 marks) 75 marks for the Arithmetic paper of Std. VII and 75 marks for the combined subject from the work experience. Such students will be provided a writer who is studying either in VI standard or equivalent to VI Standard student. For Dyscalculia student writer will be provided only for arithmetic subject. They will be granted additional 30 minutes grace time for solving their papers.
3. **Dyslexia and Dysgraphia:** Students will be provided writer for written exam and also extra time (30 minutes) for solving their question papers.

Synopsis Government Order

School Education - Government Examination Department

The Director of Examination has been authorized to give examination concessions to the students, affected by dyslexia and other physical disabilities who are appearing for the public examinations conducted by the Board of Education for higher secondary, secondary, matriculation, Anglo Indians, E.S.L.C. etc.

GOVERNMENT OF TAMIL NADU

School Education Department

Government Order No.47, dated 18.02.99

Director of Examination Letter No.031118/161/99, dated 09.02.1999

ORDER:

1. For the last 10 years the Principal of Sree Vidya Matriculation Higher Secondary School has been taking steps to give remedial education to her students who were identified as dyslexics with the help of special educators. These dyslexic students despite their intelligence are backward only in academics. The Principal has requested the Director of Exam to give examination concession provisions like extra time for practical and written examinations, use of calculator, use of clarke's tables, use of scribes, read out the question paper etc. for the dyslexic students appearing for 10th and 12th Public examination.
2. Based on the above mentioned Principal's request, the Director of Examination requested the Government to grant examination concession not only for this school but also to give him the powers to grant examination concession to other students (boys/girls) who apply with other kinds of disabilities too.
3. The Government has scrutinized the Director's recommendations (Students with dyslexia and other disabilities). The Director of Examination has been given the general authority to provide examination concessions to all students - dyslexic and with other disabilities who are appearing for secondary school, higher secondary school, matriculation, Anglo India, E.S.L.C. and other government examinations after scrutiny the recommendations from a panel of doctors, psychologists, educationalists along with the earlier case history sheet from the school.
4. After scrutiny as mentioned in para 3, the Director is requested to take proper course of action in giving examination concession to students of Sree Vidyalaya Matriculation Higher Secondary School.

// As per Government Order //

M.A.GOWRISANKAR
SECRETARY, GOVERNMENT

Addressee

Director

Director of Examination, Chennai 600 006.

Director of School Education, Chennai 600 006.

Director of Primary Education, Chennai 600 006.

P.A. to Minister of Education, Chennai 600 009.

P.A. to Chief Minister, Chennai 600 009.

COUNCIL FOR THE INDIAN SCHOOL CERTIFICATE EXAMINATIONS

VII-318(SD/2002)

22 January 2001

Dyslexia Case

The Principal
Vidyaranya High School for
Boys & Girls
Green Gates, Saifabad
Hyderabad 500 063

Dear Madam,

We are in receipt of a letter dated 19th December, 2000 from Centre for Special Education (CSE), Secunderabad, recommending the assistance of a scribe to the student, Ms.J.Preethi who will be appearing for the ICSE (10) Examination 2002 from your School.

The Special Committee dealing with Specific Learning Disability cases after examining the report of the CSE has permitted you to engage an Amanuensis to help the above student during the conduct of her ICSE (10) Examination. The writer should be a pupil from Class VIII only and also not related to the student in any way. A Special Assistance Supervising Examiner of proven integrity and not related to the student in any way will have to be provided as well and student be examined incommunicado during the entire duration of the examination.

Kindly provide to the Convener and the Supervising Examiner a copy of the Council's letter dated 22 January 2001. You will also need to discuss with them regarding the special arrangements to be made for the conduct of the March 2002 ICSE (10) Examination in respect of student, Ms.J.Preethi.

Yours faithfully,
Sd/ xx xx xx
(XAVIER PINTO)
DEPUTY SECRETARY

Central Board of Secondary Education

(An Autonomous Organization under the Union Ministry of Human Resource Development, Govt. of India)
Shiksha Kendra, 2, Community Centre, Preet Vihar, Delhi - 110092

No.COORD:DO:GUW.:F.10:2001:8721

Dated 01-03-2001

The Secretary
Madras Dyslexia Association
No.11 & 12, Sambasivam Street
T.Nagar, Chennai-600017

Sir,

Please refer to your letter No. MDA:GEN:2980 dated 6.2.2001, I am directed to inform you that the Board gives the following special concessions to the Spastic, Dyslexic, Physically handicapped and Blind candidates:

1. exemption from examination in the Third Language.
2. permitted to use an amanuensis and allowed an additional one hour (60 minutes) time for each paper.
3. consider the Physio-therapic exercises as equivalent to Physical and Health Education course of the Board.
4. Spastic candidates, Dyslexic and candidates with visual and hearing impairment have the option of studying one compulsory language as against two. This language should be in consonance with the overall spirit of the Three Language Formula prescribed by the Board:

MATHEMATICS, SCEINCE, SOCIAL SCIENCE, ANOTHER LANGUAGE, MUSIC, PAINTING AND HOME SCIENCE.

Yours faithfully,
Sd/- xx xx xx
(KAVITA VAZIRANI)
DESK OFFICER (GUW.)