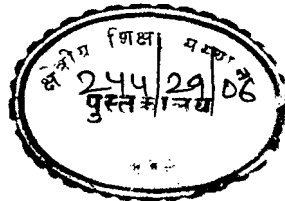


DIB.

ACTIVITY BASED TEACHING OF EVS AT PRIMARY LEVEL

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REGIONAL INSTITUTE OF EDUCATION
(NCERT) AJMER
2005

ACTIVITY BASED TEACHING OF EVS AT PRIMARY LEVEL

(PAC Prog. 15.08 : Training of KRPs in activity based teaching of EVS at primary level with focus on evaluation and low cost teaching aids for the state of J&K and U.T. Chandigarh held at SIE Jammu from 27-30 December, 2004)

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ACKNOWLEDGEMENT

In the light of National Curriculum Framework for School Education (2000) NCERT has brought out new textbooks for Environmental Studies at primary level. These books emphasises on activities, formative evaluation and use of locally available teaching-learning materials. The staet of J&K and U.T. Chandigarh expressed the desire that their Key Resource Persons (KRPs) be trained in activity based teaching of EVS with focus on evaluation and low cost teaching aids. Hence this programme was designed and completed.

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Programme Coordinator

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TEACHING LEARNING OF ENVIRONMENTAL STUDIES AT THE PRIMARY STAGE

OVERVIEW

Environmental studies have been one of the independent curricular areas at the primary stage curriculum during the last three decades. Being environmental based in nature, it has been given due weightage in the primary stage curriculum. It is a known fact that child in the early years interacts with his/her environment, and as a result, he/she gains lot of concrete experiences from the immediate environment. The process of environment-based education therefore, enables him/her to internalise these experiences and gets an opportunity to develop necessary process skills, habits, attitudes and values for improving quality of life. Keeping this vital aspect in view, in classes I and II, it was introduced as an integrated subject area without making any distinction between the natural and the social components of the environment. In classes III to V, although the focus was continued on the environment, both in terms of content and processes, it was being introduced in two parts : Environmental Studies – I (Social Science) and Environmental Studies II (Science). The content/concepts of Environmental Studies-I was drawn from different areas of social sciences while the content/concepts of Environmental Studies-II was drawn from natural sciences. Due to this disciplinary treatment of this subject area (Social and Natural Science), the major focus of teaching-learning was more on subjects concepts, and thus the instructional material tended to be more information loaded.

The National Curriculum Framework for School Education (NCFSE)-2000, brought out by NCERT critically reviewed its status and introduced Environmental studies as an independent subject area from classes III to V. In the present scheme of studies, which is based on NCFSE 2000,

Environmental Studies has been conceived as an integrated subject area at the primary level. In classes I and II, EVS is not introduced as an independent subject area but its concepts/concerns have been proposed to be integrated with other curricular areas such as : language, Mathematics and Art of Healthy and Productive Living (AHPL). Environmental Studies has been recommended to be introduced as one subject area instead of two, where Science and Social Science components are integral and integrated part of this subject. The major focus of this area of study thus would be on developing awareness about the environment and on developing habits attitudes, values and skills (mental processes) in the child for being a healthy and active member of the society.

OBJECTIVES

A study of this module will enable you to

- Develop conceptual understanding of environment and Environmental Studies
- Understand significance of teaching of EVS at the primary stage.
- Understand the integrated approach to Environmental studies curriculum at the primary level and differentiate it from the disciplinary approach.
- Understand the environmental approach of teaching at primary stage.

ENVIRONMENT AND ENVIRONMENTAL STUDIES – CONCEPTUAL MEANING

Before going into details of various aspects of Environmental Studies let us try to understand what an environment is, as the centrality of this curricular area is around the environment. Broadly, environment includes all the aspects, which influence life of an individual. It comprises the natural, social and man-made aspects, which directly or indirectly affect her/his living and working conditions. The natural environment has two major components : the living and the non-living. The living component of the Environment includes plants and animals. The group of living things forms

the biological environment. Land, water, air, etc. constitute the non-living component of environment called the physical environment. The living and the non-living components are our natural resources. They are basis for the existence of life in various forms.

The social environment consists of family, schools, institutions, community, religious places, customs, festivals, culture, literature, history, etc. The social environment provides an opportunity for social, emotional, intellectual and vocational growth of an individual.. The process helps in the development of habits, attitudes, values, skills for effective and fruitful living in the society.

Environmental Studies comprises two words : 'Environment' and 'Studies'. Etymological meaning shows that it leads to study the environment. Thus Environmental Studies provides systematic opportunities to the child to study and understand his/her environment in totality. The scope of this area widens gradually starting from the immediate environment (focus on self and things around his/her environment) of the child to the distant and wider environment (focus more on 'We' and 'Our environment').

At the primary Level Environmental Studies has been received a bivalent status. In school curriculum at the primary stage, 'Environmental Studies' has been accepted both as an area of study and as an approach to study. Under the former, child learns about the environment. Thus it aims at developing awareness of the child to the various features of his/her environment. The study of it is based on the child's organised investigation of his/her environment and learning revolves around the study of environment. In the latter, under the approach to study, it is being used as an educational tool. This process leads learning through it. It encourages the pupils to :

- employ various skills and techniques for environmental investigations
- use judgment for interpreting his/her discoveries.

- produce relevant creative work;
- to learn for the environment (concern for the environment)

Environmental Studies is, therefore, a means to an end, rather than an end itself.

Check your Progress –I

- 1 What is an environment and how it is different from Environmental Studies?
- 2 Environmental Studies is an area as well as an approach. Justify your answer by two examples.

SIGNIFICANCE OF TEACHING ENVIRONMENTAL STUDIES AT THE PRIMARY LEVEL

A child at the concrete stage (7-11 years age group) views the environment in totality in a realistic manner. The information and unstructured process of learning needs to be structured and formalised so that there is a systematic development of cognitive processes and cohesive learning. One of the important purposes of including environmental studies as an area at this stage is to encourage children to observe systematically and explore their environment, develop inquisitive (inquiry) skills related to various processes, phenomena and events taking place in the environment around them. Thus the prime purpose of introducing environmental studies is two fold : It provides an opportunity to develop awareness about the environment (as a subject) at one end and develops various process skills among the children (as an approach) to the other end. This bivalent status of this area in the primary curriculum makes this subject more process based and skill oriented. This nature of this area also facilitates in developing habits, attitudes, values in more practical and continuous manner

The expected learning outcomes of this area are :

1. Learning to know – The child will

- develop an understanding of basic structure and functions of various parts of human body, the need to take care of these parts;
- develop an understanding of natural, social, cultural and man made environment and their inter relationships;
- develop awareness and understanding about her/his personal well-being, belongings and surroundings and ways to keep them clean,
- demonstrate an understanding for conservation of natural resources and protection of the environment and also take action for protecting it for its proper utilisation,
- demonstrate an understanding of distance in space and time and the relationship between them.

II. LEARNING TO DO : THE CHILD WILL

- Develop competencies and skills for life long learning (for quality of life), i.e. skills of observation, reporting, collecting information, discrimination, classification, experimentation, making predictions and estimations, drawing inferences etc.
- Interpret and report observations in a variety ^{of} ways – oral, written, pictorial (graphs, charts, tables).
- Practice healthy habits for healthful living such as cleanliness, discipline, punctuality, proper care of belongs etc.
- Develop healthy attitude towards dignity of labour and prepare herself/hiself adequately to face life.
- Develop skills to reading a map and locating places in the map,
- Develop skills of using standard and non-standard units of measurement,
- plan and carryout simple and safe experiments/activities on her/his own under the guidance of the teacher.

III. LEARNING TO LIVE : TOGETHER: THE CHILD WILL

- Develop social skills and value such as sharing, caring, helping others (including differently abled children) tolerance, team-spirit, cooperation, working together for common good, waiting for ones turn, etc.
- Learn to live in harmony with the environment and people of different communities and having different faiths,
- Recognise and appreciate contributions made by people in the past and in the present for the well being of the community.
- Respect rules made for the benefit of the community and follow them.

IV. LEARNING TO BE : THE CHILD WILL

- Understand her/his role as an individual in home, at school, and the community (neighbourhood).
- Express herself/himself freely in creative activities.
- Acquire habits of self learning through creative/productive activities,
- develop ability to ask simple questions relating to immediate and wider environment.
- practice some positive values specific to her/his own context, e.g. truthfulness, honesty, brotherhood, patriotism, etc.
- appreciate beauty in the environment and show a sense of aesthetic appreciation through expression in varied forms of art,
- appreciate culture and traditions and take pride in being an Indian,
- show and promote respect and concern for others and for the environment.
- develop abilities to process information and take independent decisions in simple situations in day to day life;
- develop scientific temper.

CHECK YOUR PROGRESS II

- 1 What is the significance of teaching Environmental Studies at the primary level? Give any two reasons

- 2 What makes Environmental Studies process-based rather than content based?

INTEGRATED APPROACH TO ENVIRONMENTAL STUDIES –

As per the recommendations of National Curriculum Framework for School Education (NCFSE) 2000, the change in the status of Environmental Studies at the primary level curriculum entails a greater need to understand its approach. Before understanding the nature of integrated approach to Environment Studies, let us know the concept and need of the integration. The concept of integration extends beyond the mere approach or method of presenting subject areas. The concept has been involved in response to the expectations from the educational process. This is based on the following premises :

- The integration of curriculum reduces the chance for overlapping of the contents.
- It cannot do away merely down sizing the curriculum but views the curriculum in totality.
- it resolve the issue to take out the obsolete or redundant content/information without interrupting the over all continuity of the concepts.
- It reduces the mismatching between the developmental capabilities of the children on one hand and the curricular expectations on the other.
- Provides scope to learners to perceive the environment in totality and not in parts natural, social man-made.

In the new approach, it is perceived as one curricular area which is integrated in nature rather than sub-divided into science and social science in classes III-V. In the past, it was practiced in two sub areas i.e. Science and Social Science, in classes III-V.

This compartmentalisation treatment of this area into two, does not match with the developmental characteristics of children at this stage.

Based on the above premise and findings of the research studies, there has been a change in the approach to Environmental Studies. In the new approach, the curricular area of Environmental Studies perceives the environment as an integrated whole – the natural, the man-made, the social and the cultural environment in totality. The integration of these areas has not been made merely to club together the sub components but to present in such a way so as to help the child to understand the environment in a meaningful way.

The following are the salient features of integrated approach to Environmental Studies at the primary stage :

- The curricular area of Environmental Studies perceives the environment as an integrated whole taking into its fold all aspects of the environment i.e. natural, man-made, social and cultural. A conscious effort has been made to integrate these components and make it meaningful experience to the child.
- The integrated approach to Environmental Studies take into account the principle of moving from oneself to immediate environment and extending it gradually to distant and wider environment. The scope of the wider environment limiting to our country and its people and their linkages with the life of the child. It also aims at careful extension of the child's mental horizon from known to unknown, simple to complex, immediate to remote, and concrete to abstract.

| ENVIRONMENTAL STUDIES (EVS) AT PRIMARY LEVEL | |
|--|--|
| Past | Present (NCFSE, 2000) |
| * EVS an independent curricular area in an integrated form in classes I and II | <ul style="list-style-type: none"> • no independent subject in classes I and II. • Environmental concepts/concerns |

| | |
|--|--|
| | integrated with Language, Mathematics and Art of Healthy and Productive Living (AHPL) |
| * Status in curriculum in two separate areas in classes III to V : EVS I & EVS II | *EVS as one independent (integrated) curriculum area in classes III to V. |
| * Disciplinary approach to curricular development and instructional material in classes III –V as EVS=I (Social Science) and EVSII (Science) | * Integrated approach to curriculum development and instructional material in classes III-V. |
| * Compartmentalised treatment to content and processes | * Holistic treatment to processes and content |
| * Focus on immediate distant environment of child | * Focus on living experiences of child |
| * Focus more on Learning about the Environment | * Focus more on Learning through the Environment and for the Environment/ |

THE ENVIRONMENTAL APPROACH

Environmental approach to teaching learning refers to the strategies that provide opportunities to the children to observe and interact with the environment and thus acquire the various competencies.

SALIENT FEATURES OF ENVIRONMENTAL APPROACH

- Involves a systematic and organised exploration of environmental phenomenon and functioning of the social institutions.
- Involves participation in various activities/functions and acquiring not only the knowledge but also desirable habits, values attitudes.

- Provides opportunities for self learning with equal emphasis on ‘what’ to learn as well as ‘how’ to learn, thus facilitating adoption of ‘child centred and activity based’, ‘learning by doing’, and Problem solving approaches.
- Emphasises learning through immediate environment and direct experiences but it does not restrict the child’s awareness to his/her local environment. It aims at a careful extension of the child mental horizon from known to unknown, from immediate to remote and from concrete to abstract.

Leads to ‘active thing’ on the part of child.

- May or may not involve physical movement but definitely involves use of mental/cognitive skills, such as solving puzzles or writing ones experiences, reading a book or story and inferring something out of it and referring to a dictionary etc. are also activities.
- Is challenging enough for the child so as to help him practice and apply his skills and knowledge in a variety of ways, across many situations.
- Enables the child to learn in a joyful and interesting way.
- Has wider scope for the interaction between teacher and learners, learner and learner and learner and material.
- Expected to encourage enquiry, experimental or discovery approach, which lays emphasis on development of scientific/mental processes.

CHECK YOUR PROGRESS –III

- 1 What is an integrated approach to teaching of Environmental studies?
How it is different from disciplinary approach?
- 2 Give any three characteristics of integrated approach.

SUMMING UP

Curriculum revision and development is an on-going process of education. The NCFSE (2000) perceived environmental studies differently in terms of concept, approach and treatment at the primary stage. In the new

scheme of studies, for classes I and II, Environmental studies was perceived not as an independent subject but its concepts/concerns were integrated with other curricular areas. In classes III to V, EVS was introduced as an independent area of study where in the social and the natural components of the environment have been visualised in an integrated form.

In the primary level curriculum, being bivalent status of this area, it has been accepted both as an area of study and an approach to study. Environmental studies at the primary stage has a three fold approach in its treatment i.e. learning through the environment, learning about the environment and learning for the environment.

EVALUATION IN ENVIRONMENTAL STUDIES

OVERVIEW

The National Policy on Education (1986) and the Programme of Action (1992) emphasise the need of continuous and comprehensive evaluation at all stages of school education. National Curriculum Framework for School Education (NCERT, 2000) again emphasises that 'evaluation must facilitate all round development of students and there should be school based system of students' evaluation. 'The school based evaluation will be in the form of continuous and comprehensive evaluation and will incorporate not only the scholastic areas but also the co-scholastic areas of students' growth'.(NCFSE)'.

Evaluation is an integral part of teaching-learning process and helps in improving the learning/achievement of pupils. It aims at identifying the strengths and weakness of pupils, removal of learning difficulties and enrichment of their potentials. The tools of evaluation must include teachers' observations and students' record.

OBJECTIVES

After studying this module, you would be able to

- Understand the meaning of evaluation.
- Differentiate between measurement and evaluation.
- Know various types of evaluation tools
- Select appropriate tools and techniques of evaluation for evaluating different kinds of competencies/abilities.

INTRODUCTION – WHAT IS EVALUATION

How well have I done?' It is human nature to seek answer to this question. One always wants to know one's quality of work while an intelligent person tries to improve performance by knowing drawbacks and bringing together all relevant data or information for analysis and interpretation in terms of value judgement on the basis of the collected data.

This process is known as evaluation. The achievement of a student A in the second test is much better as compared to this achievement in the first test, such a statement attempts to evaluate.

Evaluation is a process of appraisal of an object or event with reference to some social, cultural and scientific standard. Evaluation is the process of gathering and interpreting evidences on changes in the behaviour of all students as they progress through school.

Pupils should be evaluated in all scholastic and co-scholastic areas in respect of cognitive, Affective and Psychomotor domains.

ACTIVITIES

- 1 Identify and list educational objectives which cannot be tested in one annual examination.

MEASUREMENT AND EVALUATION

For clarifying the difference between measurement and evaluation, let us take some examples :

- a) Suppose, the heights of three persons A, B, C are 4ft, 5ft and 6 ft. respectively. This numerical data represents measurement, but when we say that person C is the tallest and A is the shortest among these three, this qualitative interpretation and value judgement about length is evaluation.
- b) Suppose, in a test in EVS, three students secure 60, 48 and 30 per cent marks respectively. It does not lead us to any conclusion unless we say that out of these three students, one secured first class, one got second class and one failed on the basis of pre-decided norms.

Thus :

- Measurement represents the quantitative measures which does not imply any judgement concerning the value, worth or behaviour being measured.

- Evaluation represents qualitative interpretation which judges the value, merit or worth of one or more experiences, ideas, processes etc.

ACTIVITY

How can evaluation data be used by teachers and parents in knowing the progress of the pupils.

Question : Against each of the followign statements, write T if it is true and F if it is false.

- a) Measurement is a dependent process ()
- b) Evaluation is a dependent process ()
- c) Evaluation is qualitative ()
- d) Measurement is qualitative ()

Evaluation : An integral part of teaching-learning process

As you know, education is a tripolar in nature the objectives, the learning experiences and the Evaluation. First of all, the objectives of teaching are laid down in specific and well defined terms, then effots are made to achieve these objectives by selecting appropriate learning experiences inside and outside the classroom and then to evaluate how far these LEs have proved to be fruitful in achieving the objectives laid down.

The sequence is as follows :

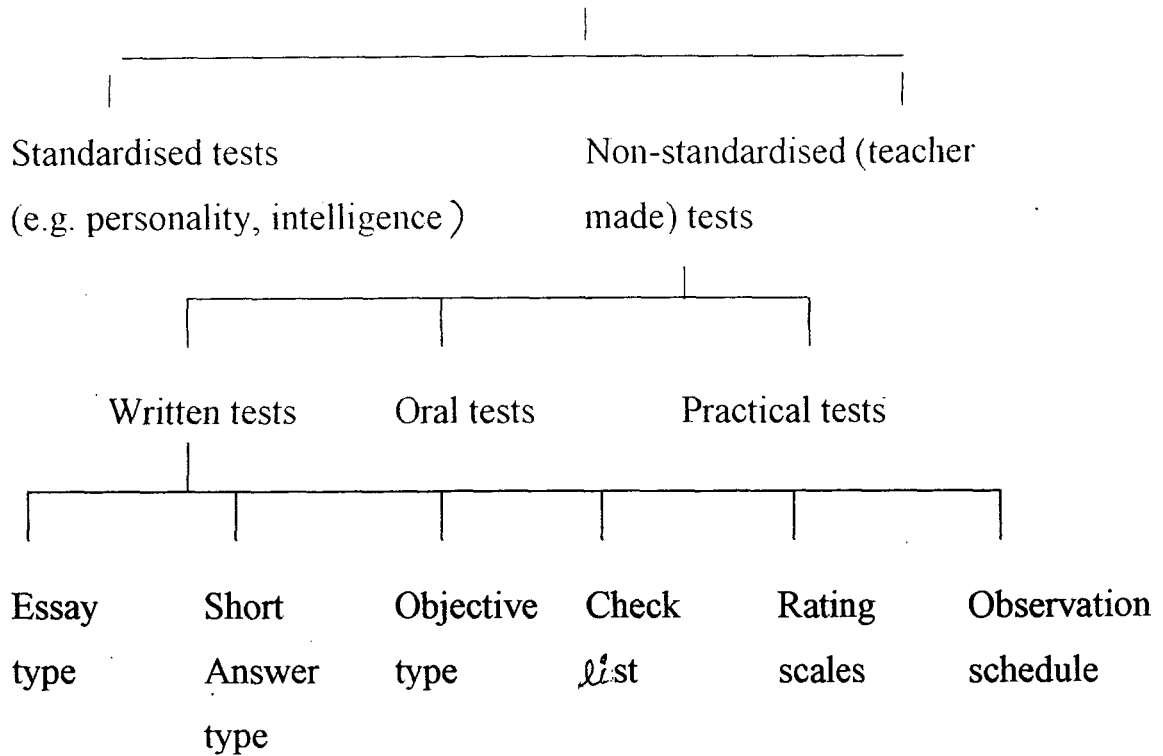
OBJECTIVES → LEARNING EXPERIENCES → EVALUATION

Evaluation is an integral part of the teaching – learning process. Evaluation is influenced by objectives, teaching-learning situation.

TOOLS OF EVALUATION

To evaluate the growth, progress and achievement of the students, we cannot rely on paper pencil tests only. It requires also tools and techniques other than the tests and examinations. These tools and techniques can be classified as shown below :

Tools and Techniques



STANDARDISED TESTS

The characteristics of standardised test are as follows :

- They consist of content prepared and selected by competent person.
- They follow standardised procedure of administration and scoring.

TEACHER MADE TESTS

The most common teacher made tests can be broadly divided into three categories.

- A. Written tests B. Oral tests C. Practical tests

A. Written tests

In written tests the respondent ^{has} to respond in written form. In these types of tests a question paper is provided to the respondent to respond to the questions either on the same paper or in the answer sheet provided for the purpose.

In cognitive domain, paper and pencil tests are frequently used. They involve :

The completion type is a series of sentence in which certain important words or phrases have been omitted and blanks are submitted for the testee to fill in. A sentence may contain one or two blanks.

Examples of Fill in blank type items –

1. A P_____ is a high, flat land (Plateau)
2. An area of land surrounded by water on all sides is called as _____
3. _____ contains chlorophyll, which helps to trap solar energy and convert it into chemical energy.
4. Ice is the solid form of water, it has a fixed _____ (shape)
5. Water _____ is a gas (vapour)
6. Air occupies _____ and has _____ (space, weight)

Multiple Choice Items

A multiple choice item is made up of stems and solutions which present more responses, only one of which is best or correct response. It is definitely better or superior to other type of items.

Examples of multiple choice items

1. Cholera is spread through
(a) mosquitoes (b) air (c) contaminated water and food
(d) mosquitoes and houseflies ()
2. If a person gets hurt while playing, we should
a) Ask the reason b) scold the victim
c) contact the doctor on phone d) give first aid ()
3. The function of kidneys in the body is :
a) Filtration of liquid waste from the blood
b) Filtration of solid waste from the blood
c) Filtration of liquid and solid wastes from the blood.
d) Filtration of carbon-di-oxide from the blood ()

Common precautions that are to be taken while framing multiple choice items are :

- a) Stem of item must be clear, specific and complete in itself.
- b) All distractors must look plausible.
- c) Only one possible response must be right clearly and all others clearly wrong.
- d) Options such as 'all the above', and 'none of the above' should be avoided, unless necessary.

MATCHING TYPE ITEM

A matching type item typically consists of two columns, each item in the first column to be paired with a word or phrase in the second column upon some basis suggested. In the simplest form of matching test the number of response is exactly the same as the number of items.

EXAMPLES OF MATCHING TYPE ITEMS :

1. Match the following

- | | |
|---|-----------------|
| 1. A big plant with a strong stem is called | (a) Herb |
| 2. A small plant with a soft stem is called | (b) Forests |
| 3. Pepper, clove, cumin etc. are | (c) Pet animals |
| 4. Dog, Cat, Parrot and Rabbit are | (d) Spices |
| 5. The area that are full of trees are called | (e) Tree |

Common precautions that are to taken while framing matching items are :

- a) Unwarranted clues should not be there for matching pairs.
- b) In the second column correct responses should be arranged randomly.
- c) The basis of pairing or matching should be clearly indicated in the instruction of an item.
- d) There should be more alternatives in the second column than the number of elements in the first column.

STUDENTS' RECORD OF OBSERVATIONS

Students' record of observation is one of the important tools of evaluation at primary stage. It is scored like a student response tests (oral or

written). This tool is mainly used to evaluate observational skills and the ability to classify and record data.

EXAMPLE

Students are asked to observe two animals and two plants and record their observations as YES or NO as follows :

| Characteristics | Earth worm | Rose | Fern | Butterly |
|-----------------|------------|------|------|----------|
| Grow | | | | |
| Move | | | | |
| Eggs/seeds | | | | |
| Needs food | | | | |
| Has legs | | | | |
| Bears flowers | | | | |

On the basis of observations, students find similarities and differences between animals and plants.

RATING SCALES

Rating scales are useful in evaluating activities/performance, attitudes and interests. In constructing a rating scale, the traits/elements of a behaviour/performance are listed. Teacher observes and records the position of a pupil, generally, on a graphical scale.

Illustration : Rating scale for Physical Fitness

| S.No. Item | Rating | | | |
|--------------------------|--------|---|---|---|
| | A | B | C | D |
| 1. Correct posture | | | | |
| 2. Flexibility | | | | |
| 3. Balance | | | | |
| 4. Capacity to work hard | | | | |
| 5. Good teeth | | | | |
| 6. Normal hearing | | | | |
| 7. Normal eye sight | | | | |
| 8. Free from diseases | | | | |

CHECK LISTS

Check lists are used for quickly recording of the observed behaviour. These are generally used when yes or No or absence or presence of a trait is to be indicated.

EXAMPE :

Checklist on Health Habits

- | | |
|-------------------------------------|--------|
| 1. Washes hands before meal | Yes/No |
| 2. Keeps teeth clean | |
| 3. Keeps nails clean | |
| 4. Wears clean clot ^{thes} | |

Checklist can also be used for evaluating the students when they are doing filtration activities in the classroom. For example during experimentation on process, the following points may be checked.

- | | |
|--|--------|
| 1. Correct folding of filter paper into cone | Yes/No |
| 2. Correct placement of filter paper in a funnel | |
| 3. Use of rod for filtering liquid. | |

ACTIVITIES

- How would you test students observational and enquiry skills in EVS class IV?
- Suggest which tools you would like to use for evaluation of following aspects.
 - o Mastery in the concept of work and force.
 - o Truthfulness, regularity and Punctuality
 - o Cooperation
 - o National Identity and other core elements of the curriculum
- o Identify situations where a rating scale can be used.

B. ORAL TESTS

In this, the teacher asks questions and the pupil gives responses orally, that is, without using paper pen^{ci}. This type of tool is used for evaluating objectives like oral expression.

C. PRACTICAL TESTS

In this, the studⁿents are required to perform certain activities or practicals with the help of some apparatus.

LET US SUM UP

The purpose of evaluation is not only to classify students in different grades, but is also to improve the teaching-learning process. Teacher will have to use a variety of tools and techniques. The tools that can be used at the primary stage include written, oral and observations. Teachers should also use check lists, ra^ting scales etc. for assessing personal, social qualities of their students. Teachers should also draw feed back from these evaluations to improve the teaching-learning process.

Introduction of grades in schools

Introduction

1. Evaluation is an integral part of the teaching-learning process.
2. Evaluation is a process of collecting, analyzing and interpreting evidences of student's learning for making variety of decisions.
3. While assessing students' achievement, we need to focus on students' progress with reference to:
 - ✓ Self
 - ✓ Peer group
 - ✓ Criteria set by the teacher

What is Grading

1. The word 'grade' is derived from the Latin words 'gradus' where it means 'step'.
2. Grading is a process in which students may be classified into groups on the basis of their performance.
3. Grading is a device of recording and reporting student's performance.

Function of Grading

1. It gives an account of the extent to which the learner has realized the instructional objectives.
2. It helps in making decisions pertaining to placement, promotions and awarding scholarship.
3. It helps in reviewing transactional strategies and curricular appropriateness.

Limitations of Marking System

1. Currently students' achievement is being carried out only in scholastic areas by awarding marks on a 101-point scale that runs from 0-100.
 - Where zero is not absolute zero. It does not represent nothingness of an attribute,
 - Where 100 is not absolute 100. It does not represent mastery level in the subject.
2. The scale so used suffers from number of limitation, like the arbitrary nature of both the zero and the hundred, imperfection of tools, inter and intra examiner variability etc.
3. As a consequence of these limitations, the marks so awarded do not represent the true mark because of inherent errors of measurement.
4. A random sample of size 'n' is drawn from a population; whose mean is μ and standard deviation is σ (which are unknown). Let the mean and standard deviation of the sample are 50 and 10, then the mean of population may lie in between
 - ❖ 40 and 60 in 68 % of cases:
 - ❖ 30 and 70 in 95 % of cases:
 - ❖ 20 and 80 in 99 % of cases:
5. The negative effect of pass/fail system is going to be glaring day-by-day. A child failed once in examination is labeled as failed through out his life. As a result, the students are forced to even commit suicide.
6. Inter-and intra-examiner variability in the marking of the script is so high that it decreases reliability of the scores.
7. Marking system has increased cutthroat competition among the students are forced to even commit suicide.

8. Over emphasis on marks has made the present evaluation system inhumane.
9. Comparison of student's performance in various subjects on the basis of raw marks is irrational, unjustifiable and inhumane.
10. The system of pass/fail encourages commercialization of education.
11. In pass/fail system there is a colossal wastage of humane resources at the national level.
12. In marking system there is no provision for improving performance by the students if he/she is not satisfied.

Advantage of grading system

1. The shortcomings of marking system can be overcome to a large extent if students are placed in ability bands that represent ranged of scores. Each ability range may be designated with a letter called a "Grade".
2. Grades can fruitfully be used recording the growth and development of individual students.
3. Grades can be added meaningfully without distorting the scale of measurement, should we decide to arrive at the Grade Point Average (GPA).
4. Undue significance attached to raw scores will be considerably reduced.
5. Grades will be minimally affected by test-difficulty.
6. Negative effect of pass/fail will be eliminated, as the performance of individual student will be rated in terms of grades. No grade signifies the failure of student in a subject in a subject rather it provides an opportunity to improve on it.
7. Grades so awarded will indicate the relative position of the individual student vis-à-vis his/her group and thus serve the purpose norm reference testing.

8. Grades will provide for comparability even across the curricular areas because the normal distribution ensures the uniformity in spread of scores regardless of the nature of curricular areas.
9. It may be naïve to assume that a shift from marking to grading would remedy entire defects of the conventional system. However, grading is far more satisfactory a method.

Pre-requisites

Pre-requisites for any effective examination are:

- Balanced Question Paper,
- Detailed Marking Scheme,
- Randomization of the Answer Scripts, and
- Fair Conduct of Examination

Methods of assigning grades

1. In general, grading may be carried out by two methods,
 - a. Direct
 - b. Indirect
2. In direct method, the performance of the students is assessed in qualitative terms and is expressed in terms of letter grades.
3. In indirect method, the performance of the students is first assessed in terms of marks and subsequently transformed into letter grades by using different modes.
4. Indirect grading methods may be of two types.
 - A. Absolute grading
 - B. Relative grading

5. Absolute grading warrants direct conversion of marks into grades based on pre-determined standards irrespective of the distribution of marks in a subject. This procedure is simple and straightforward. It should be used in Home Examinations.
6. Relative grading, which is also known as "Grading on the curve", entails transformation of obtained curve into a desired curve. This conversion allows us to categorize the obtained scores into a number of grades as per requirement in a scientific manner. It should be used in Public Examinations.

Absolute grading in scholastic areas

7. At primary stage, three-point scale may be used as given below:

| | | |
|---------------------|---|----------------|
| ❖ 60% and above | A | Good |
| ❖ 30%-less than 60% | B | Average |
| ❖ Below-30% | C | Unsatisfactory |

8. At upper primary stage, five-point scale may be used as given below:

| | | |
|---------------------|---|----------------|
| * 75% and above | A | Excellent |
| * 60%-less than 75% | B | Very Good |
| * 45%-less than 60% | C | Good |
| * 33%-less than 45% | D | Average |
| * Below-33% | E | Unsatisfactory |

9. In Home Examinations at Secondary/Sr. Secondary Stage, nine-point scale may be used as given below:

| | | |
|---------------------|---|-------------|
| ➤ 90% and above | A | Outstanding |
| ➤ 80%-less than 90% | B | Excellent |

| | | |
|---------------------|---|----------------|
| ➤ 70%-less than 80% | C | Very Good |
| ➤ 60%-less than 70% | D | Good |
| ➤ 50%-less than 60% | E | Above Average |
| ➤ 40%-less than 50% | F | Average |
| ➤ 30%-less than 40% | G | Below Average |
| ➤ 20%-less than 30% | H | Marginal |
| ➤ Below 20% | I | Unsatisfactory |

10. In Public Examinations at Secondary/Sr. Secondary stage,

Relative grading in nine-point scale may be used as given below:

| | | | <i>Grade Value</i> |
|------------------------------------|-----|---|--------------------|
| ✓ 1.75σ to ∞ | 4% | A | 9 |
| ✓ 1.25σ to 1.75σ | 7% | B | 8 |
| ✓ 0.75σ to 1.25σ | 12% | C | 7 |
| ✓ 0.25σ to 0.75σ | 17% | D | 6 |
| ✓ -0.24σ to 0.25σ | 20% | E | 5 |
| ✓ -0.75σ to -0.25σ | 17% | F | 4 |
| ✓ -1.25σ to -0.75σ | 12% | G | 3 |
| ✓ -1.75σ to -1.25σ | 7% | H | 2 |
| ✓ ∞ to -1.75σ | 4% | I | 1 |

GRADING IN CO-SCHOLASTIC AREAS

10. At elementary stage, 3-point direct grading may be used.

11. At Secondary/Senior Secondary stage, 5-point direct grading may be used.

ACTIVITY BASED APPROACH OF TEACHING EVS

OVERVIEW

Activity-based teaching is one of the teacher-centred methods of teaching. Through activity-based instruction you can provide valuable experience to your students and make learning a pleasant and lasting experience. The underlying principle of activity-based teaching is learning by doing. The use of active participation of students in the teaching-learning process is an essential feature of activity-based teaching.

OBJECTIVES

After reading this module, you will be able to :

- = Understand the concept of activity based approach appreciate
- = The merits of active based teaching.
- = Take precautions in organising activities
- = Classify activities as individual (self) and group activities

INTRODUCTION

A learning teaching situation which is characterised by participation on the part of the students may be called activity based instruction. Learning that requires the learner to do something more than just to look at and listen to a teacher or packaged teaching materials is termed activity based instruction. The student may, for example, be performing an experiment, drawing a figure, making something or carrying out a project. Methods such as simulation, role playing, gaming etc. are examples of activity-based instruction. The non-examples of this method are lecture, narration or observed Demonstration.

MERITS OF ACTIVITY BASED TEACHING

Activity based teaching has many advantages. Its important advantages are as follows :

- It provides an opportunity to the students to obtain knowledge and understanding by doing or working on the learning tasks/activities.
- It satisfies the natural urge of the students to learn by playing or doing.
- It raises the motivational level of the students.

PRECAUTIONS IN ORGANISING ACTIVITY BASED INSTRUCTION

The following precautions need to be taken while resorting to activity-based instruction.

- The success of activity-based instruction depends a great deal on the proper planning of the activities, involving formulation of the objectives, laying down clear cut procedure to undertake activities, organisation of the class into groups etc. Resorting to activity-based instruction without proper planning and adequate preparation does more harm than good.

WHAT IS A GOOD ACTIVITY?

A good activity is one which

- Ensures meaningful active participation of every child.
- Leads to 'active thinking' on the part of the child.
- Enables the child to learn in a joyful and interesting way.

INDIVIDUAL AND GROUP ACTIVITIES

Individual and group activities are the inevitable components of the child-centered approach.

Activities that require independent observation and individual thinking, individualised activities should be adopted in the classroom transaction. The core idea of organising group activities is to develop necessary social skills among the children such as working together, sharing, helping others, tolerance, team spirit etc.

SUGGESTIVE ACTIVITIES FOR CLASSES III-V

The following are some suggestive activities, which can be organised in graded manner for teaching-learning of Environmental studies :

- Observing local environmental objects, plants, animals, living style of different people, natural phenomena in the environment.
- Discriminating environmental objects, plants, animals etc. on the basis of their external features, making groups/categories on the basis of external features.
- Classifying environmental objects, plants, animals, information etc. on the basis of one criteria at a time and drawing inferences : for example, classifying different living and non-living things based on physical features, classifying food items on the basis of raw/cooked, nutrients etc.
- Providing opportunities for participation in celebration of functions, festivals, fairs in the school and community by employing techniques like role playing, dialogue, dramatisation, discussions, quiz, riddle solving etc. for various events.
- Organising and conducting field visits to learn about and for the environment. For example, visit to school or near by garden, post office, crop fields, zoo panchayat etc.
- Finding solutions to simple problems through collection of information from various sources, discussions etc. for example, soil erosion, environmental protection etc.
- Conducting simple experiments guided by the teacher in the classroom such as air occupy space, light necessary for growth of the plants, friction on rough and smooth surface, etc.

ACTIVITIES

- Identify the topics/areas which can be presented through individual and group activities.
- Give two reasons for adopting child-centered approach for development process among children.
- Give two significance of out door activities in EVS teaching.

SUMMING UP

Transaction of environmental studies at the primary stage employs a systematic exploration of environment, through a variety of group and self

TEACHING LEARNING MATERIALS IN EVS

The teaching learning or transactional materials are actual vehicle that carries the curriculum to the child. It also develops a close linkage between a teacher and the child which is a necessary condition for meaningful teaching learning process. As per the nature of the curricular area (of EVS), the best teaching-learning material are the actual environmental objects available in the immediate environment and real life situations of the child.

The Environmental objects of the immediate environment such as : different kinds of plants, animals, living and non-living things, various kinds of food items, types of houses, soil etc. are such resources/materials which can be used as effective learning aids for the children.

IMPROVISED/DEVELOPED MATERIAL (LOW COST)

Low cost teaching – learning aids are useful category of material for EVS teaching. These materials should be cost effective (low cost) to ensure their use in the process (teaching-learning) charts, picture,s maps, globe, working models, apparatus are used as an improvised material. Some of the examples of improvised materials are –

* Charts ; Human material organs, systems of the body, Animals of Different regions etc.

- Models : Internal organ/ Body systems
- Pictures : Plants, Earth, Sun, Stars, Land form etc.
- Maps and Globe : Concept of earth, countries, ocean, continents etc.

LEARNING AIDS ARE those which children can manipulate and learn from them e.g. clay,pebbles, leaves, flowers, feathers etc.

AIR AND AIR POLLUTION

OVERVIEW

Air is all around us. It surrounds the entire planet. The layer of air, which surrounds the Earth, is known as atmosphere. The region outside the atmosphere where there is no air is called space. Air is a mixture of several gases, dust and micro organisms. The natural balance of gases is always maintained in nature. Unchecked human activities have resulted in atmospheric pollution.

OBJECTIVES

After going through the module you will be able to help the Learner to:

- Recall that air is every where, but it can only be felt and not seen.
- Recognise that air is a gaseous mixture consisting of nitrogen, oxygen, carbon-dioxide and water vapour.
- Demonstrate the properties of air.
- Describe that besides nitrogen, oxygen and carbon di-oxide gases, air also contains water vapour, dust particles and micro-organisms.
- Realise that harmful substances in the air cause pollution.

MAJOR TEACHING POINTS/CONCEPTS

The concept covered are as follows :

- Air is all around us.
- Air occupies space
- Air has a weight
- Air is a gaseous material
- When air contains harmful substances it is said to be polluted.
- Polluted air is harmful to all living things.

EXEMPLAR ACTIVITIES

Concept : Air is all around us

Activity :

Take a news paper and fan yourself.

Do you feel something cool?

This is air.

Air is everywhere but we cannot see.

We can feel it when it is moving.

See, the branches of a tree swaying.

Why is it so?

You know it is because of air.

Air is around us. It surrounds the entire planet.

The layer of air surrounding the earth is known as the atmosphere.

Concept : Air occupies space

ACTIVITY 1

Material required : balloon

Fill air in a balloon

What happens?

The balloon becomes

This means that air occupies space.

ACTIVITY 2

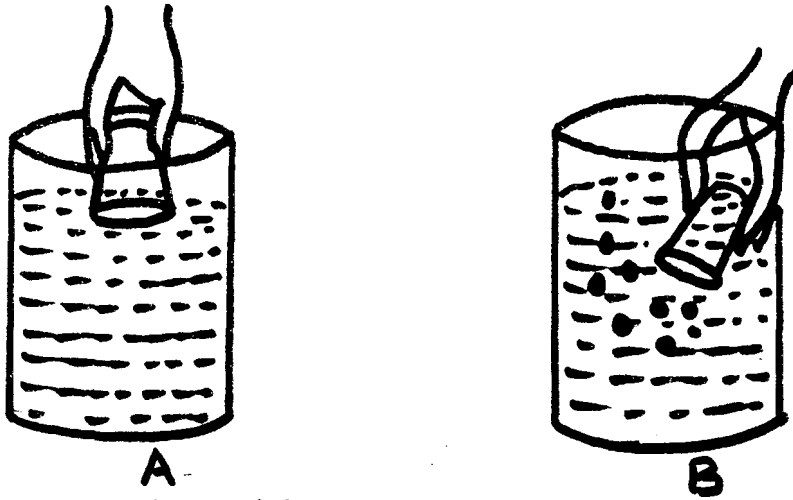
Material required : Tumbler, bucket, water

Take an empty tumbler. Gently push it in a bucket filled with water as shown in Fig.A when the tumbler is completely immersed in the water, turn it as shown in Fig.B.

Note down what happens.

Help students in arriving at following conclusion/inference. An empty tumbler is actually filled with air. When the tumbler is pushed in the bucket, the air in it cannot be pushed out. When the tumbler is tilted slightly, the water enters the tumbler and pushes out the air in it, which escapes from the water in the form of bubbles.

This proves that air occupies space.



Concept : Air has weight

Material required – two football, improvised balance (Taraju)

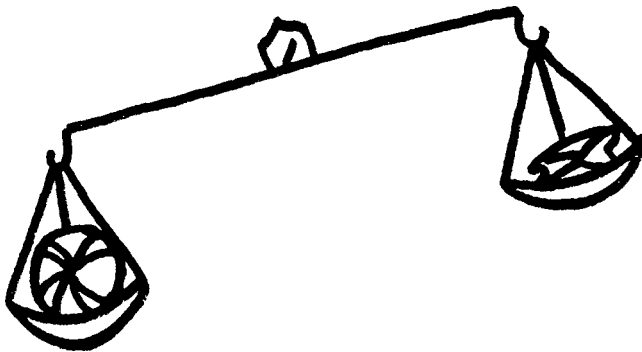
Activity:

Take two footballs. Blow air in one of them. Weigh both the football.

Which football is heavier?

The football which has air in it is heavier.

This proves that air has weight.



Concept : Air is a gaseous material.

Air is a mixture of many gases.

Oxygen is one of the gases present in the air.

Take a deep breath. You have taken in oxygen through your nose.

How important air is for us?

Hold your nose tightly and keep your mouth shut for a while.

You feel uncomfortable. Is not it?

This proves that we need air for breathing.

Plants and animals also need oxygen present in air.

Plants need air to prepare their food in the presence of sun light. This process is photosynthesis. Apart from gases what ^{else} does air contains?

AIR CONTAINS WATER VAPOUR

Material required _ Glass filled with chilled water

Activity:

Pour chilled water in a glass.

What do you see on the outer side of the glass?

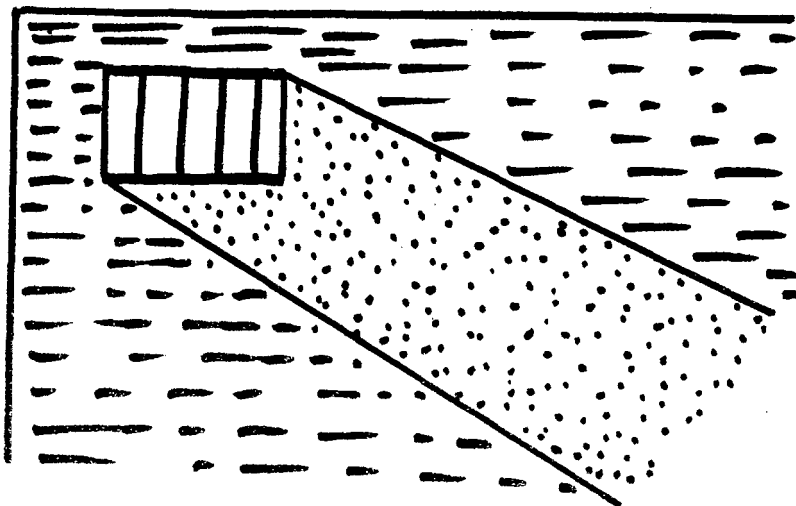
Water is seen on the outer side of the glass.

This proves that air contains water.

‘Water vapours in the air forms clouds. It also causes weather conditions such as dew, fog, snow and rain.

Air contains dust particles.

Activity : Close all the doors and windows of a room during day time. Then slightly open a door or window of the room to let sunlight come in to the room.



What do you see? ... Tiny particles what are these tiny particles?

These are dust particles.

Air contains dust particles/

CONCEPT

When air contains harmful substances it is said to be polluted. Polluted air is harmful to all living things.

TRANSACTIONAL STRATEGY

Students must have experienced that burning of fuel wood, garbage, coal and diesel produces smoke, which mixes up with the air. They might have also experienced that bursting of crackers on Diwali produces smoke. Such air is not clean and is called Polluted Air,

Based on students' experiences, you may ask them to list the sources of polluted air.

Polluted air is harmful to all living things. It is harmful to both plants and animals. It causes many diseases. Help your students to list some of the diseases.

- Irritation in eyes
- Suffocation
- Skin diseases
- Allergies

Concept :

Pollution can be reduced by growing trees. A house hold should have many doors and windows to allow a free passage of fresh air

Transaction Strategy :

Help you students to appreciate that air pollution can be reduced by growing trees. How? Tell them that plants use carbon dioxide and give out oxygen into the air.

What type of houses should we have? A good house is one with many doors and windows to allow a free passage of fresh air.

EVALUATION EXERCISES

1.Fill in the blanks

a As we go upwards in the atmosphere, the air becomes....

- b Dew and fog are caused by the in the air.
- c Air occupies and has
- d The smoke from factories and vehicles ... the air.

2. Mark (✓) or (x)

- a) Animals and birds cannot remain alive without air. ()
- b) Oxygen is needed for breathing and burning ()
- c) Plants also breathe ()
- d) Most of the air is made up of oxygen gas ()
- e) The Air pollution can be reduced by growing trees
and plants near our house and at school ()

Things to do :

Make a paper pin wheel. Pin it on a thin stick.

WATER AND WATER POLLUTION

OVERVIEW

Water is a compound consist of hydrogen and oxygen. It is essential for all living beings to sustain their life. Water is found in different forms – solid, liquid and gas, which keeps changing from one form to the other form. There are different sources of water such as rivers, lakes, streams, oceans, tube-well, rainwater. Water at a normal temperature does not have any colour nor any smell or taste. It dissolves many things in it. There is a degradation of water quality due to the presence of pollutants. There is a strong need to reduce water pollution because of its harmful effects on the human beings.

OBJECTIVES

After going through this module the teacher will be able to help the learner to :

- understand the importance of water for sustenance of life.
- understand various sources of water
- Describe important properties of water interms of its colour, smell, taste and solubility.
- Understand changing forms of water
- Understand water cycle
- Understand that harmful substances and unchecked human activities cause water pollution.
- Describe various measures for reducing water pollution.
- Understand various methods of purification of water.

TEACHING POINT/CONCEPT :

Water is essential for sustenance of life.

Water is essential for all living things. To explain this concept arrange following activities.

ACTIVITY 1

Take two similar potted plants. Water one plant as required and keep the other plant without watering. In a week, what difference do you observe between the plants. The plant without water became dry. Discuss with the students that water is essential for plants too.

ACTIVITY 2

Help the students to check whether they need water for doing the following things. Mark a '✓' to tell.

| Things | Needed | Not needed |
|-----------------|--------|------------|
| to write | | |
| to dance | | |
| to cook food | | |
| to play | | |
| to wash clothes | | |
| to grow plants | | |
| to sing | | |
| to prepare tea | | |
| to swim | | |
| to put out fire | | |
| to make house | | |

Tell your students that water is very precious we should not waste it.

ACTIVITY 3

Ask students to make a list of the ways in which water is used in their home.

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

Each student will have a different list. Students should be encouraged to compare and discuss their responses.

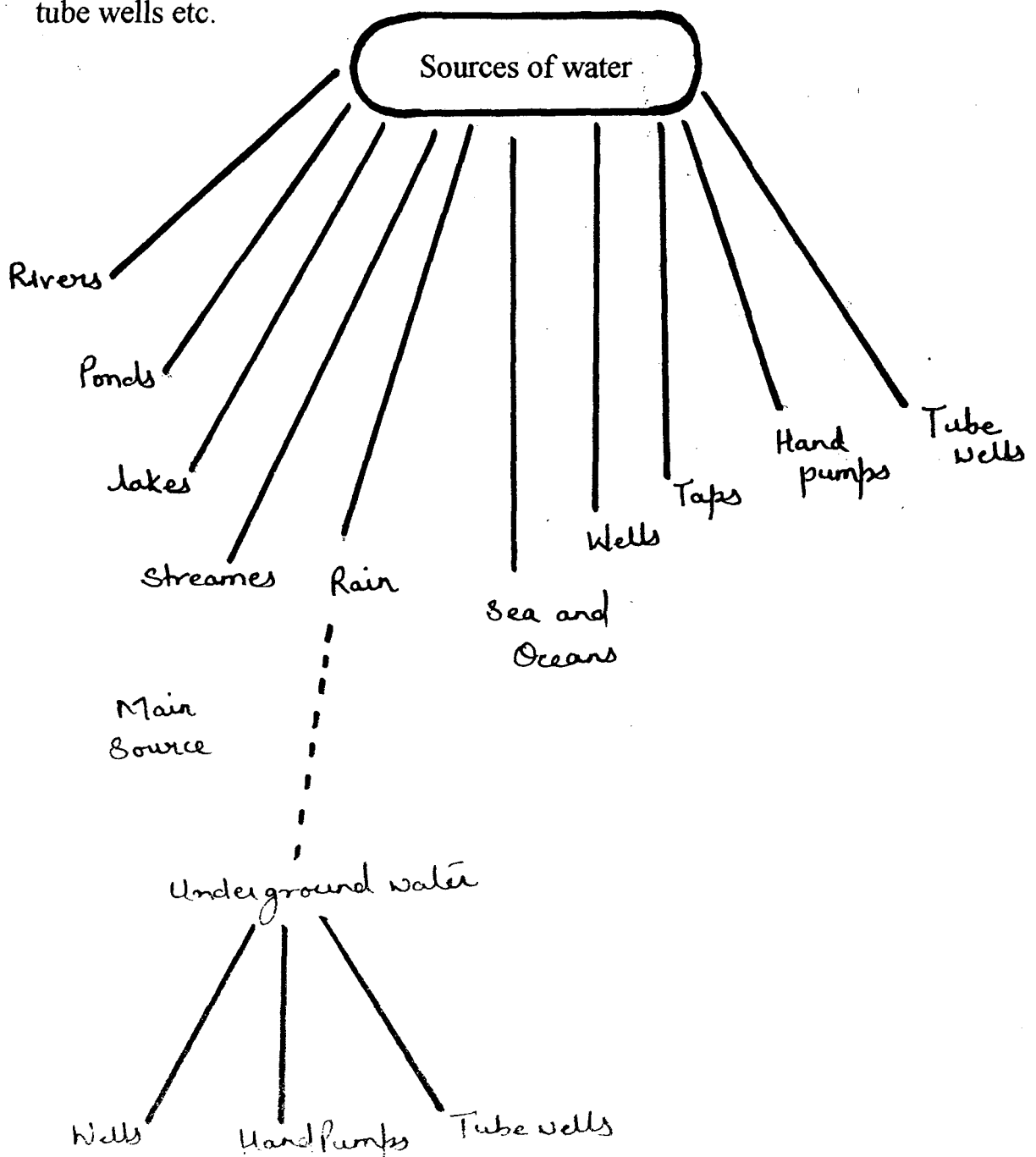
ACTIVITY 4

Ask students to draw a picture in which the uses of water are shown.

Teaching point – we get water from many sources.

TRANSACTIONAL STRATEGY

All the living things need water. We get water from different sources. They are known as sources of water. To develop this teaching point, use the picture illustrated below. Explain students that water from snowfall and rain are the major sources of water which flows into river, stream and lake. Rain water goes under the ground from where it is taken out through hand pumps, tube wells etc.



Evaluation :

Write T if it is true and F if it is false.

1. All living things need water ()
2. Snow melts in water and flows into wells ()
3. We get underground water from wells and handpumps ()
4. Water in rivers and lakes is not clean ()
5. We should drink ^R boiled or filtered water ()

Teaching point – Properties of water

Sub teaching point : Water is a good solvent

Activity :

Take half a glass of water. Put a teaspoon of salt in it and stir it with a spoon. Mix the salt. Dissolve. Now throw this water away. Wash the glass and half fill it with water again. Now put a spoon of sugar in it and stir it. Did the sugar dissolve in the water?

Similarly, try to dissolve all the things listed in the table one by one in water. Show whether it dissolves or does not with the help of a ✓.

| Things | Dissolved in water | Did not dissolve in water |
|-------------|--------------------|---------------------------|
| Salt | | |
| Honey | | |
| Sand | | |
| Cold drink | | |
| Soap powder | | |
| Ink | | |

Teacher should ^{help} the students in inferring that water is a good solvent which dissolved most of the things in it.

Sub teaching point – Water does not have any shape of its own.

ACTIVITY

Take one big glass, one small glass and a small bowl and a jug full of water. Ask any one student to pour water from the jug into the big glass, the small glass and the bowl. Ask students what did they find.

Teacher should assist the student in inferring that water takes the shape of the utensils into which it is poured.

SUB TEACHING POINT

Water does not have colour, smell and taste.

ACTIVITY

Ask all student to stand in a line. One by one, each student should try to smell and also find out its colour and record their observation in following manner.

| Properties | Big glass | Small glass | Bowl | Water jug |
|------------|-----------|-------------|------|-----------|
| Smell | | | | |
| Colour | | | | |
| Taste | | | | |

Help the students in drawing the conclusion that water has no smell and also it does not have any colour. Water does not have any taste.

MAJOR POINT : Changing Forms of Water

Water change the forms from water (liquid) to cloud (gas), cloud to snow (solid) and back to water. To explain this concept conduct the following activities.

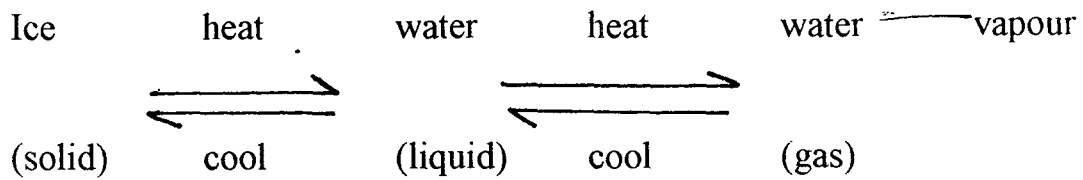
ACTIVITY 1 : Take two glasses and fill them with tap water. Put some pieces of ice in one. After about 5 minutes look at both the glasses. Does either glass have water drops on the outside. Which one?

ACTIVITY 2 : Take a handkerchief. Wet it, then ^k squeeze it and spread it in the sun. See how long it takes to dry.

ACTIVITY 3 : Put a few drops of water in a plate and keep it in the open. Did the water become less or dry up after sometime?

ACTIVITY 4 : Take a glass and put a piece of ice in it. Look at it after some time. Did it turn into water?

Help the students to understand the changing forms of water diagrammatically given below :

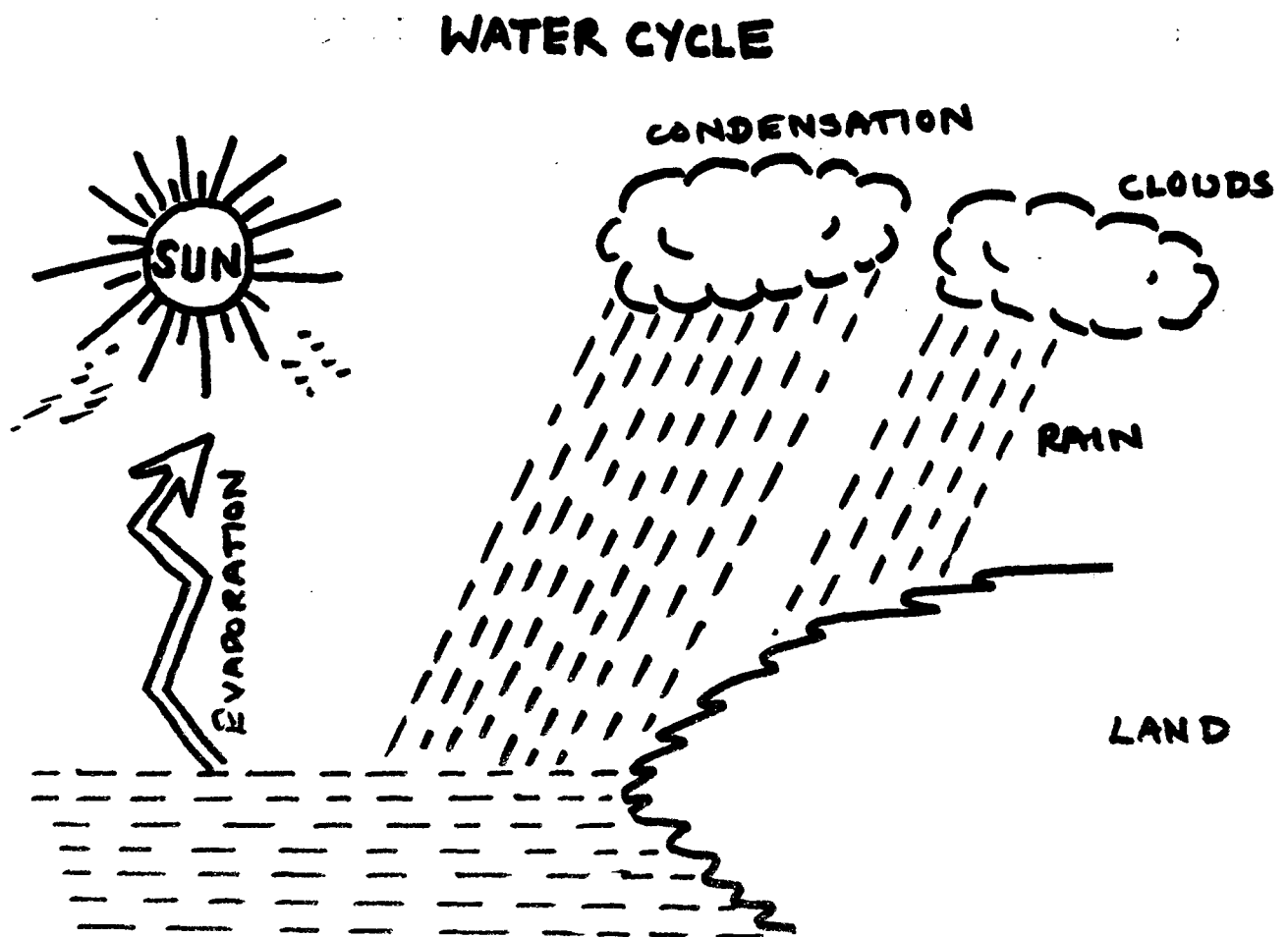


MAJOR POINT ; Water cycle

Concept :

Water cycle is a natural cycle and water circulation from ocean, river, pond, lake, soil, plants to air and fresh air back to ocean, river, pond, lake and soil.

Water cycle can be illustrated with the help of a chart as shown below:



CONCEPT :

Water pollution refers to the degradation of water quality due to unchecked human activities.

TRANSACTIONAL STRATEGY

You may make students existing concepts explicit by asking questions such as why river water taken directly from river is not fit for drinking. Why we should not throw garbage or dead organisms into rivers/ponds. Let students discuss their ideas and finally you may conclude the discussion as below :

CAUSES OF WATER POLLUTION

- Throwing house hold wastes in water
- Allowing sewage from houses, factories and offices to flow into river water
- bathing of animals in the water bodies
- fertilisers and chemicals used by the farmers in their field are often washed away into rivers, when it rains.

Effects of water pollution on human beings :

- Diseases such as cholera, jaundice, typhoid, diarrhoea and dysentery.
- Skin diseases and allergies.

Preventive measure to reduce water pollution.

TRANSACTIONAL STRATEGY

Teacher should ask students to suggest how the water can be prevented from pollution. You may list the important suggestions on the black board. Some suggestions may be like –

- We should not wash our clothes in water bodies i.e. river, pond etc.
- We should not throw household waste in water or drains. Rather it should be thrown in the dust bins.

- Bathing of animals should not be allowed in water bodies i.e. lake, river, pond etc. (This is a suggestive list, you may add more suggestions)

TEACHING POINT : Cleaning of water

TRANSACTIONAL STRATEGY

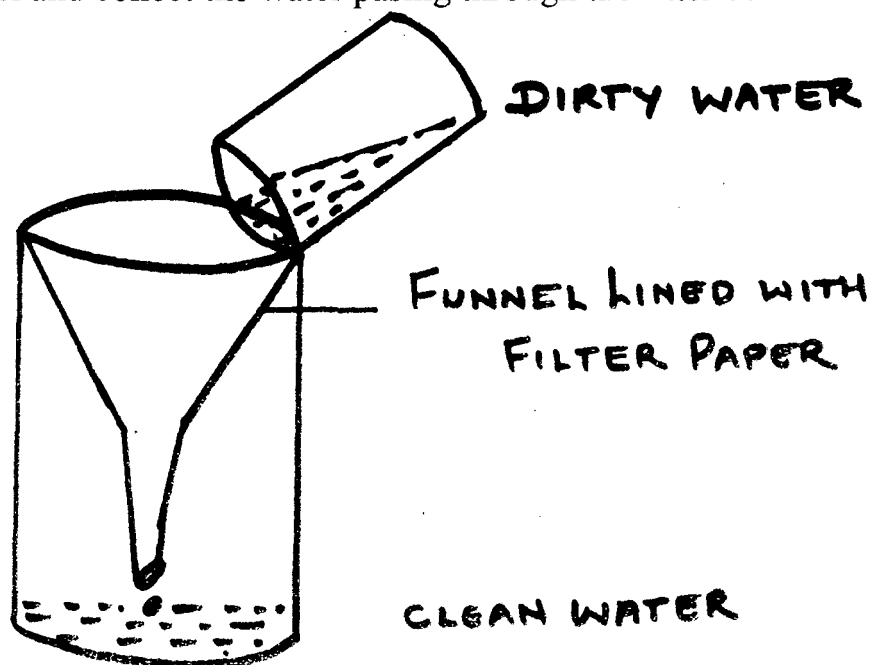
Teacher should emphasise on the need of use of clean water for drinking etc. How dirty/polluted water can be purified. He may suggest the following commonly used methods for purification of water at home.

METHOD 1 : Sedimentation and Decantation

ACTIVITY : Take dirty/muddy water in a beaker/glass. Allow it for sometime. The impurities will settle down at the bottom with clear water above it in the beaker/glass. Pour carefully the clean water into another beaker/glass without disturbing the sediment. In this way, the clean water is separated by decantation.

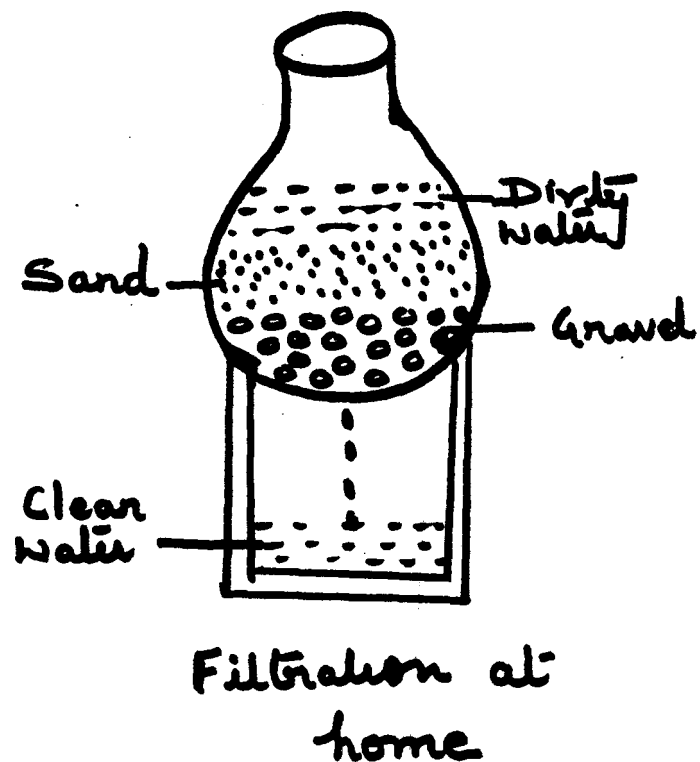
METHOD 2 : FILTRATION

ACTIVITY : Fold round sheet of filter paper two times, take three part on one side to give it a shape of a cone. Place the filter paper cone in a funnel wetted with water. Fit the funnel in a funnel stand and place a beaker below it. Take the dirty water in a beaker/vessel. Pour it carefully over a glass rod into a funnel and collect the water passing through the filter cone in a beaker.



METHOD 3 : FILTRATION AT HOME

ACTIVITY : Take a waste matka (earthen pot). Make a hole in its bottom. Put some gravel in it. Put some sand on gravel. Thus two layers will be formed. Place the matka over the bucket. Now pour dirty water into it. The clean water will be collected drop by drop into the bucket. This water is safe for drinking.



METHOD 4 : BOILING THE DIRTY WATER

Activity. Boil the water to get it germ free. Cool and use.

EVALUATION EXERCISE

1. Fill in the blanks :

- a. Water should be kept in a clean.....
- b. Water does not have any of its own.
- c. The frozen form of water is
- d. Water is drawn out from the earth through

Things to do :

1. How do you avoid wastage of water in your home? Tell your class mates.

LIVING AND NON -LIVING THINGS

OVERVIEW

Environment means our surroundings. In this surroundings there are living things such as plants and animals and numerous man made and natural non-living things. Living things have a common features such as they grow, move around, need food and water for sustenance of their life and reproduces. Both plants and animals grow but they have different pattern of growth. Plants grow in size as well as give additional branches, leaves and roots whereas animals do not develop additional body parts on their growth.

OBJECTIVES

After going through this module you will be able to help the learner to:

- identify the living and non-living things in their surroundings.
- differentiate between living and non-living things.
- recognise that all plants, human beings and animals grow with the passing of time.
- describe the pattern of growth in plants and appreciate that the plants grow, they develop new branches and leaves.
- describe the pattern of growth in animals and realise that unlike plants, animals donot grow new body parts.

Exemplar Activities

Concept : Living and non-living things have distinguishing features.

Transactional Strategy :

Students can be helped to develop this concept by doing activities such as :

Activity I

Students may be asked to prepare a list of living and non-living things in their surroundings and also to indicate whether they grow by themselves,

need food, breathe air and give birth to young ones of their kind in the following manner. If the answer is yes, tick✓ or x if the answer is no.

| Living/Non living things | Grow | Need food | Breathe air | Reproduce |
|--------------------------|------|-----------|-------------|-----------|
| Tortoise | | | | |
| Ball | | | | |
| Palm Tree | | | | |
| Hen | | | | |
| Grass | | | | |
| Girl | | | | |
| Bottle | | | | |
| Top | | | | |
| Earth worm | | | | |
| Table | | | | |

On the basis of their record of observations the students may be helped to conclude that all living things grow, need food, breathe air and reproduce whereas non-living things do not grow by themselves do not need food and breath air and do not give birth to young ones.

Activity 2

Students may be asked to name three living and non-living things in their home.

| Living things | Non-living things |
|---------------|-------------------|
| 1 | 1 |
| 2 | 2 |
| 3 | 3 |

Each student will have a different list. Students should be encouraged to compare and discuss their responses.

Evaluation :

Put a ✓ for correct and a x for incorrect statements.

- 1. All plants breathe ()
- 2. A stone can move on its own ()
- 3. Animals and birds need food ()
- 4. Plants are living things ()

Concept :

Human Beings, Plants and animals grow with the passing of time.

Transactional Strategy

Arrange pictures showing different stages of growth of plants, human beings and animals. Help the students in inferring that with the passing of time.

- Plants grow
- Human beings grow
- Animal grow

Activity

Ask students to list the things that grow and those that do not grow with the passing of time.

Things that grow

Things that do not grow

.....
.....
.....

.....
.....
.....

Concept :

Plants and animals have different patterns of growth.

Transactional Strategy :

Though plants and animals both grow with the passing of time, but there is a difference in their pattern of growth. To explain this conduct the following activities which show pattern of growth in plants and animals.

Sub concept:

Plants grow new branches leaves and roots as they grow.

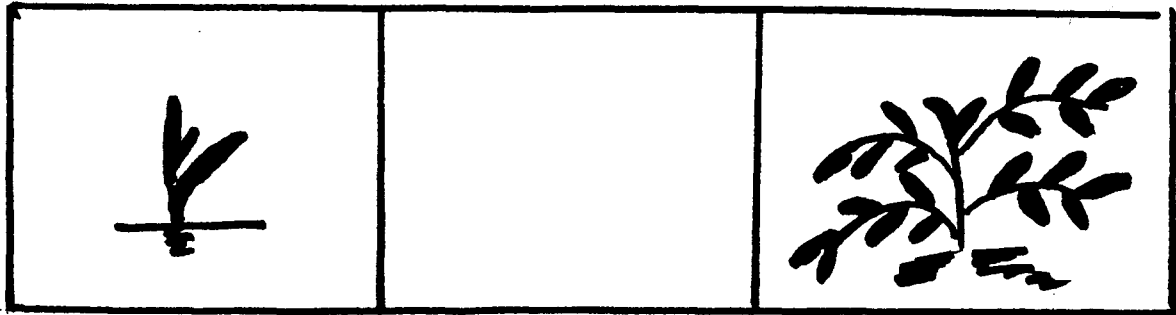
Activity

Students should be asked to observe the figure. What are the common features in the growth of all these plants. Help the students in inferring that plants grow in size and have new branches and leaves as they grow.



Activity

Draw the missing stage



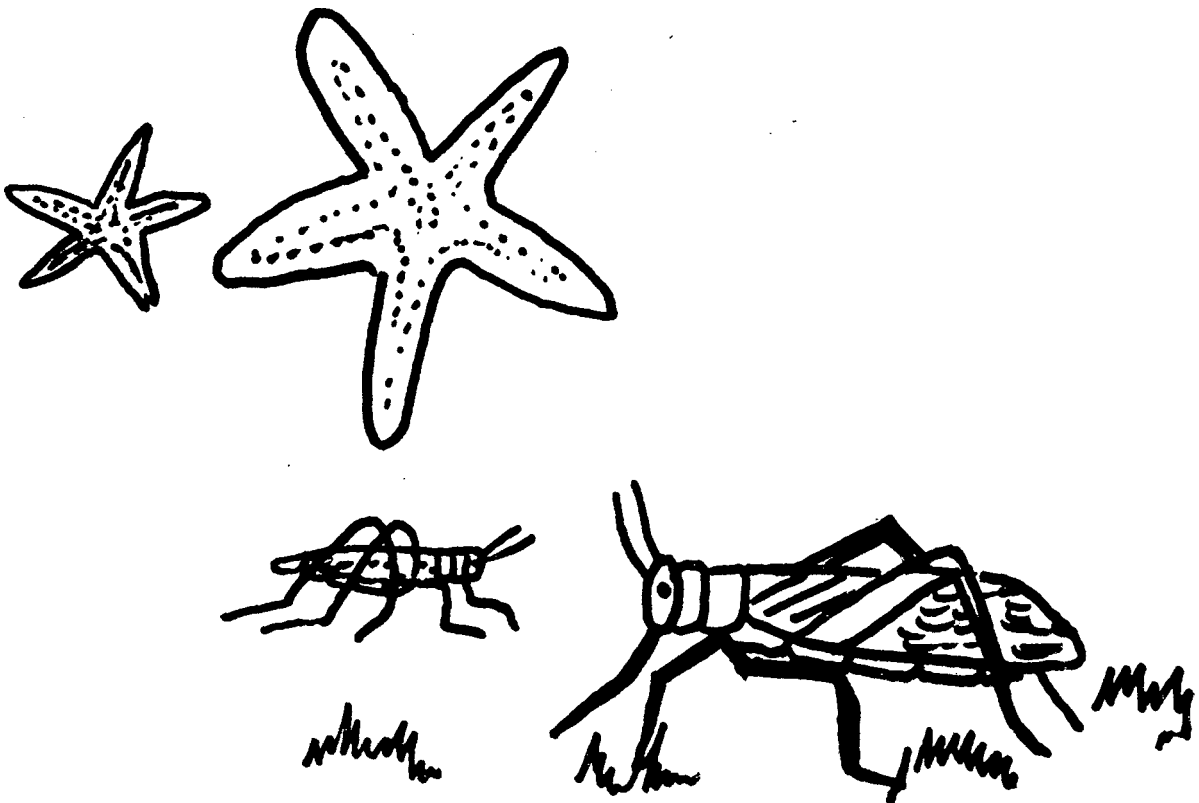
Removal of branches or old leaves of a growing plant at a proper time encourages the growth of new leaves and branches. This method is known as pruning. Pruning a growing plant encourages the growth of the plant.

SUB CONCEPT

Animals grow in size. They do not grow new body parts like plants.

ACTIVITY

Ask the students to observe the pictures which show the pattern of growth in animals.



Help your students in inferring that all animals have a similar pattern of growth. They grow in size but do not develop additional body parts.

A few animals like the common lizard and starfish have the capacity to grow lost parts of the body. They are able to replace only a lost part.

EVALUATION

Mark true ✓ or false x and correct the false statements.

- i) Animals grow in size but do not develop additional body parts ()
- ii) Plants grow only in size but do not have new branches. ()
- iii) Pruning slows down the growth in a plant ()
- iv) A starfish can grow a new arm when it is lost due to injury. ()

THINGS TO DO

- Write names of five living and five non-living things that you see on your way from home to school.
- Observe the growth of plants in your school garden. Record the data in your notebook and discuss with your teacher.
- Prepare a scrapbook of pictures of living and non-living things.

OUR INTERNAL ORGANS

OVERVIEW

There are various external parts of the body such as head, ears, teeth, eyes, nose, hand, fingers, foot etc. These can be classified as sense organs and other organs. These parts carry out specific functions. Similarly there are internal organs in our body such as stomach, intestines, liver, heart, lungs, kidneys etc. These organs help us in our activities like digestion, of food, breathing, excretion of waste products etc.

OBJECTIVES

After going through this module you will be able to help the learner to :

- 1 Identify various internal organs i.e. organs which they cannot see, found inside the body.
- 2 Understand the functions of internal organs and their importance in the body.

TEACHING POINT – Our internal organs

TRANSACTIONAL STRATEGY

Step 1 : Hang a picture chart to show a model of human body showing various internal organs. Now show students stomach, intestine, liver, heart, wind pipe, lungs, kidneys and brain.

Step 2 : Inform the students that these organs present inside our body are called internal organs. These organs help us to perform various activities like digestion, breathing, circulation of blood, removal of waste products etc.

Step 3 : Ask the students again and again to point out various internal organs and their location whether present inside head, chest or abdomen and also whether on left, middle or right side of the body.

TEACHING POINT :

INTERNAL ORANS STOMACH, INTESTINES ETC.

STEP 1 : Ask the students, when they are hungry, in which part of the body they feel hunger. If they over eat where do they feel pain.

STEP 2 : Explain with the help of picture chart of the Digestive system about mouth, food pipe, stomach, small intestine, large intestine and their location, shapes and functions.

STEP 3 : Teacher tell a story where did the banana go?

= Babloo peeled the banana and bit in to it.

= The teeth cut it and chowed it.

= The tongue tested it, rooled it and mixed saliva and pushed it in to the throat.

= The chewed banana went down the food pipe and landed in the stomach. Many juices were mixed with it, digested it. It reached the small intestine.

= The digested bana^{na} now reached the blood.

= What was not digested reached the large intestine. In the morning it was removed from Babloo's body.

After telling this story, ask studets to answer these questions :

- a. Which part of the body bites and chews food?
- b. What work does the tongue do?
- c. What happens to food when it reaches the stomach?
- d. Where does food go from the small intestine?

EVALUATION EXERCISES

1. Put✓ against the correct sequence.

- Mouth, small intestine, stomach, large intestine, food pipe.
- Stomach, small intestine, food pipe, large intestine, mouth
- Mouth, food pipe, small intestine, stomach large intestine.
- Mouth, food pipe, stomach, small intestine, large intestine.

2. Match the part of the body with the work it does.

A

B

Food is cut into small pieces

Teeth

Digested food is taken up by blood

Tongue

Food is mixed with saliva

Small intestine

The digestive juices are made

Stomach

Help children to understand that they should not eat uncovered or stale food. Also tell them the importance of washing hands before taking food and cleaning mouth after taking food.

Teaching point : Our internal organs the Lungs.

Transactional strategy

STEP 1:

Call a student to the front of the class and ask him/her to take more air inside and leave outside. Show others how chest is expanding and reducing. Tell students that this process is called breathing.

Activity :

Ask the student to count how many times they breath in one minute.

STEP 2 :

Ask student to locate nose, wind pipe and lungs in the picture chart/model. Explain them about the functions of these organs.

EVALUATION EXERCISE

1. Fill in the blanks.
 - a. Lungs help us in(breathing)
 - b. When we breathe in our lungs get filled with (air)
2. What will happen if we do not have lungs?

TEACHING POINT :

Our internal organs – the Heart

TRANSACTIONAL STRATEGY

STEP 1 :

Ask students that whenever they have fallen ill at some time or the other then the doctor would have placed the stethoscope on your chest and examined you.

ACTIVITY 1 : Making improvised stethoscope

For making stethoscope we will need the small funnels, one rubber tube that can be fitted tightly on the stems, torn balloons and thread for tying.

Fit the two ends of the tube to the stems of the two funnel. Rubber on the stems of the funnels. Make sure they are tight. Now cover the funnel with the balloons and tie them very tight. The stethoscope is ready.

ACTIVITY 2 :

Call a student to the front of the class. Press one end of the stethoscope on the chest of his friend and place the other on his ear. Hear the dhak dhak sound. One by one ask all students to come and hear the sound. Ask the students, do you know what is this sound. This is the sound of beating of our internal organ- the Heart. It is the heart beat that they hear.

STEP 2 :

Explain why the Heart beats ? Our heart is like a pump which works all the time.

When the heart pumps, blood flows in the blood vessels. He should ask the students to see their wrist closely. The blue coloured lines are blood vessels. The blood flows in these vessels.

STEP 3 :

Help students to recall with the help of picture chart/model of a heart what they have learnt.

EVALUATION EXERCISE

1. Fill in the right words in the blanks..

- a. The heart beat is heard (sometimes/always)

b. After running the heart beats.... (faster/slower)

c. The heart has chambers (two/four)

2. After which activities will the heart beat faster?

1. While playing

2. While running

3. While sleeping

4. While sitting quietly ()

Teacher point : Our internal organs the kidneys

Transactional strategy :

Step 1 : Ask the students to locate kidneys and urinary bladder in the picture chart/model.

Step 2 : Explain them the location, shape and functions of the kidneys and bladder.

EVALUATION EXERCISES

1 Name the bean shaped organs helps in filtering waste products from blood.

2 Which internal organ helps us to remove waste products from the blood?

a. Heart b. Stomach c. Kidneys d. Brain

FORCE, WORK AND ENERGY

OVERVIEW

Push or pull to an object is called FORCE. Force can slow down or can stop a moving object or can change its direction of motion. There are two main forms of force. One gravitational force and the other is magnetic force. The force, which is caused by the earth, is called GRAVITATIONAL FORCE whereas the force applied by a magnet is called magnetic force. The gravitational force was discovered by ISAAC NEWTON. The force applied opposite to the direction of motion of an object is called FRICTION. In comparison to a smooth surface, the friction due to rough surface is more.

Work is said to be done, when an object changes its position from one place to another place on applying force. Energy is the ability to do work.

OBJECTIVES

After going through the module, the teacher will be able to help the learner to :

- a) recognise that Pushes and pulls are forces.
- b) state that force can make an object move or stop or can change its direction of motion.
- c) recognise the gravitational and magnetic force.
- d) recognise the force of friction.
- e) recall that work is said to be done when the force is applied and the object moves.
- f) recall that energy is the ability to do work.
- g) There are so many sources of energy.

MAJOR TEACHING POINTS

- 1 Idea about the force

- 2 A moving object can be stopped or its speed can be changed by applying force.
- 3 The direction of motion of an object can be changed with the help of force.
- 4 Force can change the shape of some soft objects.
- 5 Idea about the friction
- 6 Gravitational and magnetic force
- 7 General idea about the work
- 8 Ability to do work is energy.

EXEMPLAR ACTIVITIES

1. CONCEPT

Push or pull to an object is called force.

Teacher must tell the students that when we push or pull an object, we apply force e.g. when we push or pull the door to open or close, then the force is applied. This can also be explained by the following activity.

ACTIVITY 1

MATERIAL REQUIRED

Stone, table

Select any two students in the class ask one to bring a stone and put it on a table. Pull the table upwards ask him, what he has observed. The student will realise that he is applying force on the table to move it upward. The same task now ask the second student to do so, he will also realise the same feeling.

Now ask both the students to do the same activity together. The students (both) will realise that table becomes lighter and they can move it upward, more faster. The teacher should explain to the students that we can make an object to move faster by applying more force.

ACTIVITY 2

The material required are bucket, rope, etc.

Take your students to a nearby well. Select any three students and ask them to take out water from the well, one by one by means of rope and bucket. When all the three students will take out water from the well, ask them, what they have observed? The students will realise that the force is applied to pull the rope to take the water out from the well.

ACTIVITY 3

MATERIAL REQUIRED

Table, a bag, etc.

Ask any one of the student in your class to put his bag, on the table. Pull it towards himself, he will observe that bag moves on pulling.

Now let his friend also join him in pulling the bag. Now the bag moves faster.

From this activity the students will realise that an object moves by applying force on it. But by applying more force, the object moves faster. The teacher should ask the students to perform such type of activities at their home and note down their observations in the note book.

2. CONCEPT

A moving object can be stopped by applying force.

The teacher should explain his/her students that when a force is applied on an object it can be stopped. This can be shown by the following activity.

ACTIVITY

MATERIAL REQUIRED : A ball.

Select any two students in the class give a ball to any one of them and ask the other to stand in front of the first at some distance. Ask the first student to throw the ball towards the second student. He will get it catch in his hand. Tell the students that the object (ball) thrown by first student is stopped by applying the force by the other student. Ask the students, what they observed. The students will realise that force can stop a moving object.



3.CONCEPT : FORCE CAN CHANGE THE DIRECTION OF MOTION OF AN OBJECT

Teacher should explain this concept by the following activity :

ACTIVITY

MATERIAL REQUIRED : A ball.

Call any two students from the class (in a play ground). Say the students are A and B. Give them a ball. Stand with face each other at some distance.

'A' will push this ball towards 'B'. As soon as the ball reaches 'B', 'B' will push it back to 'A'.

Help the students to learn from this activity that 'A' applied the force to push the ball towards 'B'. 'B' applied the force to stop the ball. The ball slowed down due to the force applied by 'B'.

The direction of the motion of the ball is also changed when 'B' applied the force to push it back to 'A'. Help the students in inferring that force can slow down or change the direction of motion of an object(i.e. ball).



CONCEPT

Force can change the shape of some soft objects.

The teacher should make this concept clear to the learners by means of the following activity. Before performing the activity, the teacher should tell the learner that force can change the shape of some soft objects and these objects may regain their original shape when force is removed.

ACTIVITY 1

MATERIAL REQUIRED

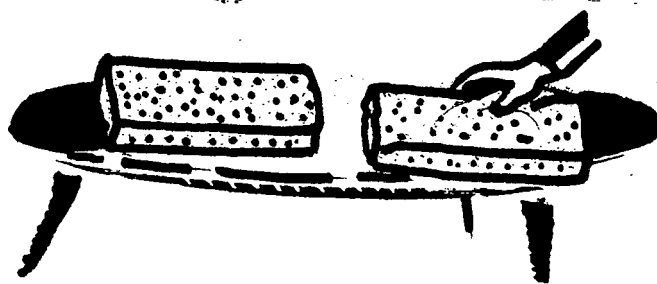
Piece of sponge, a soft rubber, etc.

Take a piece of sponge and a piece of soft rubber lying on the table. Ask each student to touch each piece and then press it turn by turn. Tell the students that when we press any object, we apply force.

Ask the students, what they have observed?

The students may have observed that, when sponge and soft rubber were pressed, their shape were changed and when these were left untouched they regained their original shape.

The teacher should explain to the students that on applying the force, the soft objects like sponge or soft rubber got their shapes changed and on removing the force, these objects regained their original shape.



ACTIVITY 2

The material required for this activity is tooth paste tube.

Take a tooth paste tube. For taking out paste squeeze it with your fingers. The stop pressing. Ask the students, what they have observed tell the students that it was the force applied by the fingers, which changed the shape of the tube.

The students will conclude that when we pressed the tube, its shape was changed by force of fingers and the paste tube regained its original shape on removing the fingers (i.e. force).

Tell the students that they can perform the same activity with other soft and used tube.

CONCEPT

IDEA ABOUT FRICTION

The teacher should explain the students that the force existing in a direction opposite to the motion of an object (on which force is applied) is called friction.

Teacher should explain the idea about friction through the following activity.

ACTIVITY

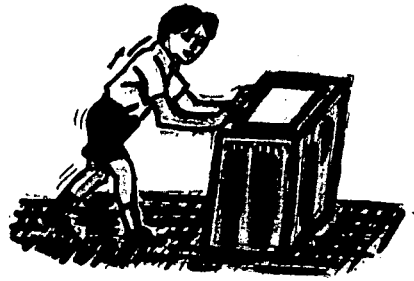
MATERIAL REQUIRED

A box lying on floor.

Take a heavy box lying on the floor. Try to push it and ask the students to observe it.

It will be difficult to push the heavy box. Tell the students that when we push the box, the floor opposes its movement. To push the heavy box (object), we have to use more force, other wise, it will not move at all. In fact, the floor applies force on the object in a direction opposite to its motion.

The students will realise that the floor applies a force on the object in a direction opposite to its motion.



Diagram

G) CONCEPT : DIFFERENT SUBSTANCES HAVE DIFFERENT FRICTIONS

The teacher must tell the student that in comparison to a smooth surface, the friction due to a rough surface is more. This can be illustrated with the help of the following activity.

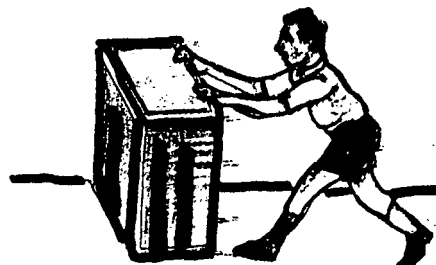
ACTIVITY

MATERIAL REQUIRED : A TABLE ON FLOOR

Ask the student to push a heavy object (i.e. table) on a rough surface and observe it. Again ask the student to push the same table on a smooth surface. Ask the student, in which condition, more force is applied.

The student will observe that the object (Table) moves easily on a smooth surface rather than on a rough surface.

Teacher should explain to the students that writing with a chalk on a rough blackboard is easier than writing on a smooth blackboard. It is necessary to explain to students that friction checks the motion of vehicles. In order to reduce the friction, we put grease or oil in sewing machines, fodder cutting machines etc.



TEACHING POINT

Forces are of two types Gravitational and magnetic forces.

SUB CONCEPT (I) THE FORCE EXERTED BY THE EARTH IS GRAVITATIONAL FORCE

Teacher should explain the students that gravitational force was first discovered by ISAAC NEWTON.

ACTIVITY

Material required for this activity is ball.

Take the students on the play ground. Ask one of them to throw the ball upward the ball will come down. Then call the other students one by one and ask them to perform the same and observe, the students will infer that the earth exerts the force of gravitation on the surface of the ball.

SUB CONCEPT : (II) THE FORCE APPLIED BY A MAGNET ON AN OBJECT IS CALLED MAGNETIC FORCE

The teacher should explain this concept by the following activity.

ACTIVITY

MATERIAL REQUIRED

Iron nails, pins, pieces of paper, pieces of chalk, Table.

ACTIVITY

This activity can be performed in the class. Ask all the students to bring iron nails, pins, pieces of paper and pieces of chalk, (one material for each student). Select one student to come and mix all the materials and put it on table. Now ask the student to bring a magnet near these objects and observe, which object will be attracted towards magnet. The student will say that only the object made up of iron have stuck to the magnet. The students will draw conclusion that the magnet attracts objects made up of iron.

Thus the teacher must explain the students that the force applied by the magnet on the iron objects is the magnetic force.



CONCEPT : WORK IS SAID TO BE DONE WHEN A FORCE IS APPLIED ON AN OBJECT

Teacher should explain the students that in every day life work means any physical activity or doing some thing e.g. pushing a wall, taking water from the well, fixing a nail in the wood, breaking stone by a labourer, etc.

Teacher should explain, the concept of work, with the help of following activity.

MATERIAL REQUIRED

BRICK, STONE OR A HAMMER

ACTIVITY 1 :

Select a student in the class ask him to bring a brick. From the ground again ask him to break the brick with a stone or a hammer. Ask, him what he has observed. The students will realise that he is doing some work.

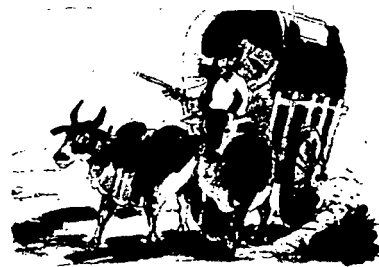
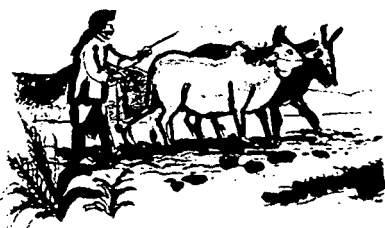
ACTIVITY 2 :

The materials required for this activity are desk, bag, duster, black board.

Ask a student in the class to take his bag and go to the next door. Similarly, ask one more student to clean the black board with the help of duster Ask them what they have observed and conclude.

Tell them that they are actually doing work.

Give some more examples to elaborate the idea about work. Also show the following figures in the class where work is done.



CONCEPT : ABILITY TO DO WORK IS CALLED ENERGY :

Teacher should tell the learners that when we do some work, we must be able to do it. Ability of a person to do work is called ENERGY. Teacher should make the students aware of energy by performing following ability.

MATERIAL REQUIRED : A spring

ACTIVITY

Select any one student in the class. Give him the spring and ask him to stretch it. Suppose, he is not able to stretch it, to a maximum extent, ask him why he is not able to stretch. The spring to maximum extent. He will realise that he has not so much power. Tell him that he has less energy.

Call one more student and ask him to repeat the same exercise. Suppose he stretches it to a maximum extent, ask him, what he has observed. He will at once realise that he has more energy than the earlier student.

Explain the students that the energy which we require for performing our daily activities is obtained from food that we eat.

Buses, trains, trucks planes, etc. do work in moving people and things from one place to another.

To do this work,, they get energy from petrol or diesel.

Also make the students aware of the fact that petrol and diesel are obtained from petroleum which is found deep inside the earth in some places.

Coal is also a source of energy. Coal is used as a fuel in our homes, in steam engines and in thermal power houses. Coal is obtained from under

grunds. It is dug out from mines. Coal mines are found in Bihar, Jharkhand and west Bengal in our country.

SUMMING UP

the p-ushing or pulling an object is fore^e we come across. So many activities in our daily life. Where force is applied, friction is produced. As far as work is concerned we come across so many activities. Where work is done e.g. writting a book is work.

Pushing a well, taking out water from well, fixing a nail in the wood with hammer are all the examples. where we apply force, ^{we} do work by using our energy.

EVALUATION EXERCISE

FILL IN THE BLANKS

- A) When we push or pull the door is applied.
- B) The push caused by the earth is called.....
- C) Wh en an object changes its position from one place to another on applying force.... is said to be done.
- D) Coal is a source of
- E) To play, we need.....

2. Mark right or wrong

- a) A smooth surface has more friction than a rough surface ()
- b) Gravitational force was first discovered by Issac Newton ()
- c) The ability to do work is called Force. ()
- d) Petrol is a source of energy for human being ()
- e) Friction is always harmful. ()
- f) By applying more force, we can move the object faster ().

3.ORAL WORK

- A) Give two examples. Where force is used to stop moving objects.
- B) Give two examples where friction makes work difficult.

4.THINGS TO DO

* Visit a Gobar gas plant along with your parents, if it is located in your neighbourhood. Write a brief report on how it works.

MEANS OF TRANSPORT

OVERVIEW

In the older days animals and animal carts such as bullock cart, camel cart etc. has the only means of transport for carrying man and woman and agriculture products from one place to the other place. With the passage of time buses, trucks, trains, car, ships, helicopters and aeroplanes become the modern means of communication. Buses and trains move on the surface (land), ships sail on water and aeroplanes fly in the air. These transport system have change the quality of life of the people and also became the source of economic development.

Objectives ; After going through this module you will be able to help he learner to ;

- Identifies the major means of transport on land, water and air.
- Understand the ways in which different means of transport affect the living of people

Concept -

Identifies the major means of transport (land, sea and air) makes inference on the ways in which different means of transport affect the lives of the people.

Transactional strategy

Activity –I

Teacher should ask the following questions & use their answers in preparing a graphic organiser.

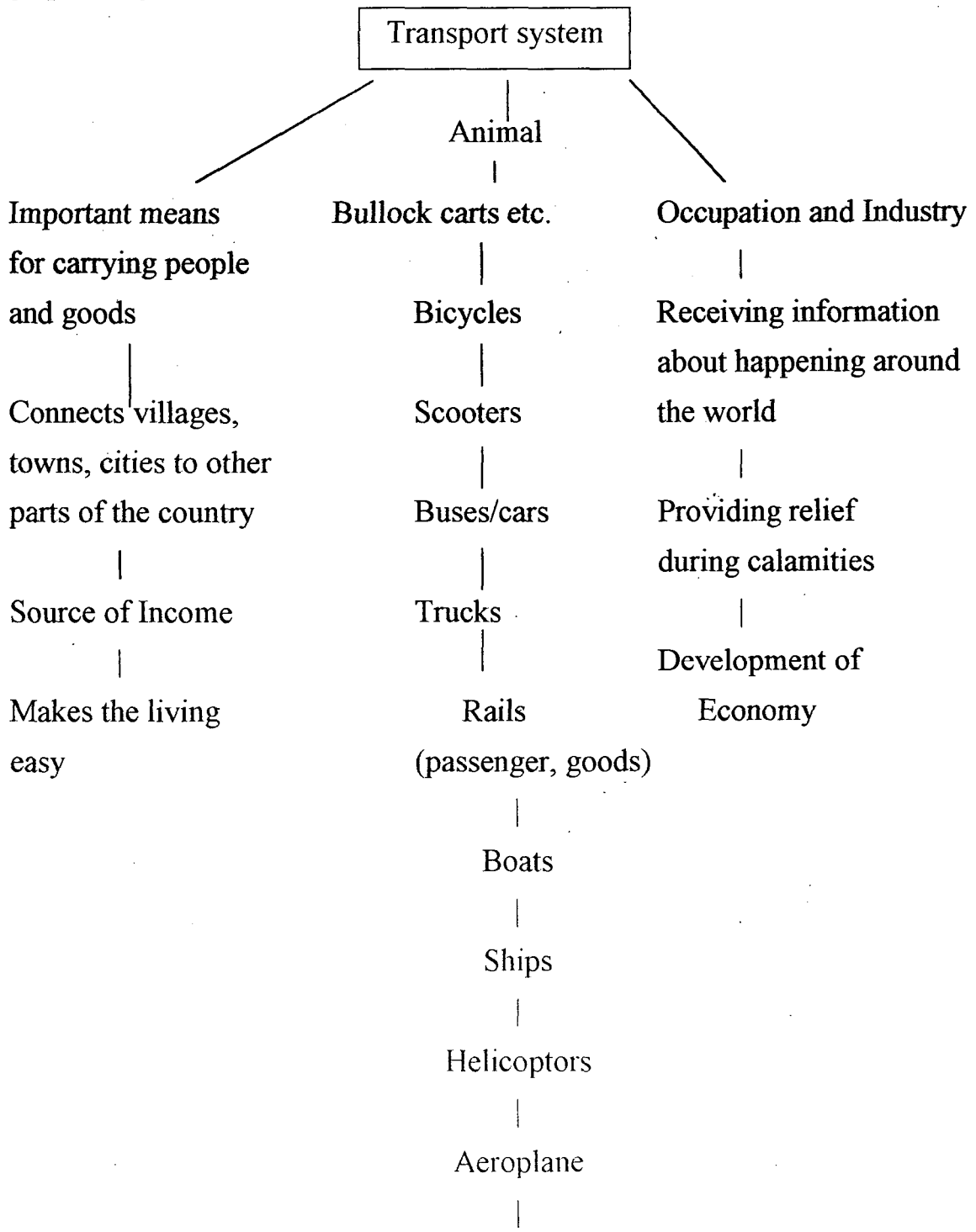
1. How do you go to school
2. How will you travel to a very far off place
3. Which means of transport are used only for carrying goods from one place to the other.

The students may give the names of different means of transport given below :

Bus, ship, car, Aeroplane, Boat, Camel Cart, Bicycle, Bullock Cart, Truck, Scooter, Motor cycle, Trains etc.

Activity II

Teacher should prepare a graphic organiser on the black board and ask questions to help students to develop the phrases or words used in the graphic organiser into ideas.



Ueful for human life and development of our country

Questions :

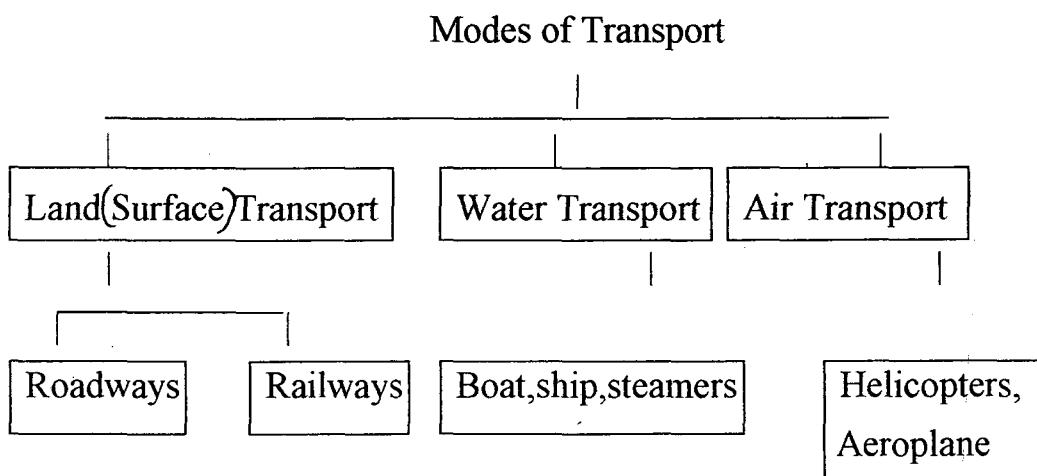
- 1 Which animals are used to pull the cart?
- 2 What type of transport is used at your place (village/town/city)?
- 3 What type of transport is used in your place to carry agricultural products to the market?
- 4 How we can provide relief during natural calamities such as earth quakes, floods etc.
- 5 How are the means of transport useful for our economy and life.

Teaching Point :

Different modes of land, sea and air transport.

Transactional Strategy

Teacher may use the students knowledge of different means of transport in developing the following cognitive map.



Now the teacher should assist students in inferring that buses and train move on surface (land) whereas boats, steamers and ships sail on water, Aeroplanes fly in the air.

ACTIVITY I : VISIT TO A BUS STAND

Teacher may plan a visit to local bus stand. Students should be advised to observe and note about the parking of buses, types of buses (local, express etc.) Facilities available in the bus stand, ticket window etc. Students should discuss their observations in the classroom.

ACTIVITY 2 : VISIT TO A RAILWAY STATION

Similarly, a visit to local Railway station may be planned with the help of students and other colleagues.

ACTIVITY 3 :

Ask the students to stand on a road near their school. Make a note of different vehicles that pass by in 30 minutes. Then fill in the table given below. Put a / for every vehicle number.

| S.No. | Bicycles | Scooter | M.Cycles | Cars | Buses | Animal carts | Trucks |
|--------------|----------|---------|----------|------|-------|--------------|--------|
| | | | | | | | |
| Total | | | | | | | |

Now ask the following questions –

- = How many fast moving vehicles did you notice in 30 minutes?
- = How many slow moving vehicles have passed in last 30 minutes? ...
- = Total number of two wheelers
- = Total number of three wheelers.....
- = Total number of four wheelers.....

EVALUATION EXERCISES

1. Make pairs :

A

Train

Bus

Aeroplane

Boat

B

Road

Railway line

Water

Air

2. Fill in the blanks :

- i) A bicycle moves than a bullock cart.
- ii) A bus moves than a train.
- iii) A cycle rickshaw moves than a tonga.
- iv) We can travel thousands of kilometers in a few hours by an

Things to do ;

- 1 Collect pictures of different means of transport and paste these in your note book. Write two sentences on each of them.
- 2 While going to school, observe the means of transport you find on the road, Which one of them, do you think, is most harmful for your health?
- 3 Discuss the advantages and disadvantages of each means of transport with your friends.

MEANS OF COMMUNICATION

OVERVIEW

Communication is universal to all human beings and is central to our lives. Talking with some one, arguing in a discussion, speaking in public, reading a newspaper, watching a T.V. programme etc. are all different kind of communication that we are engaged in exchanging our thoughts, ideas and emotions with someone. Communication is the interaction between living beings. The process of communication includes three major parts. They are sender, channel (or medium) and Receiver. Before communication can take place, a purpose, expressed as a message to be conveyed is needed. It passes between a source (sender) and a receiver. The media (or channel) through which information is conveyed may be languages or gestures or sound in the form of writing/speaking or reading.

There are various means of communication for communicating the personal messages to the people at distant places. These are through letters, telegrams, telephones, mobile phones, wire – less, pager, fax. For communicating to masses, news papers, radio, T.V. are used, internet and e-mail are the modern ways of communicating globally. Whole world is shrinking due to the fastest channel of communication using satellites.

OBJECTIVES

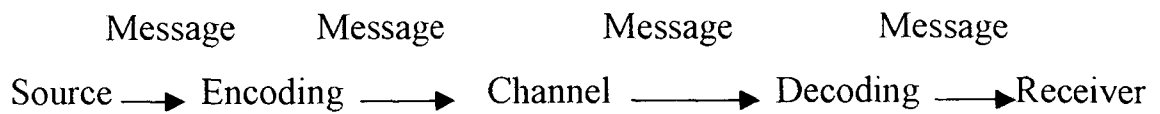
After reading this module, you will be able to help the learner to –

- understand the process of communication
- understand the means of communication for communicating personal messages.
- understand the means of mass communication
- understand the use of computers for internet and e-mails.

TEACHING POINTS : - The process of communication.

TRANSACTIONAL STRATEGY

The teacher may explain the process of communication through the following model of communication.



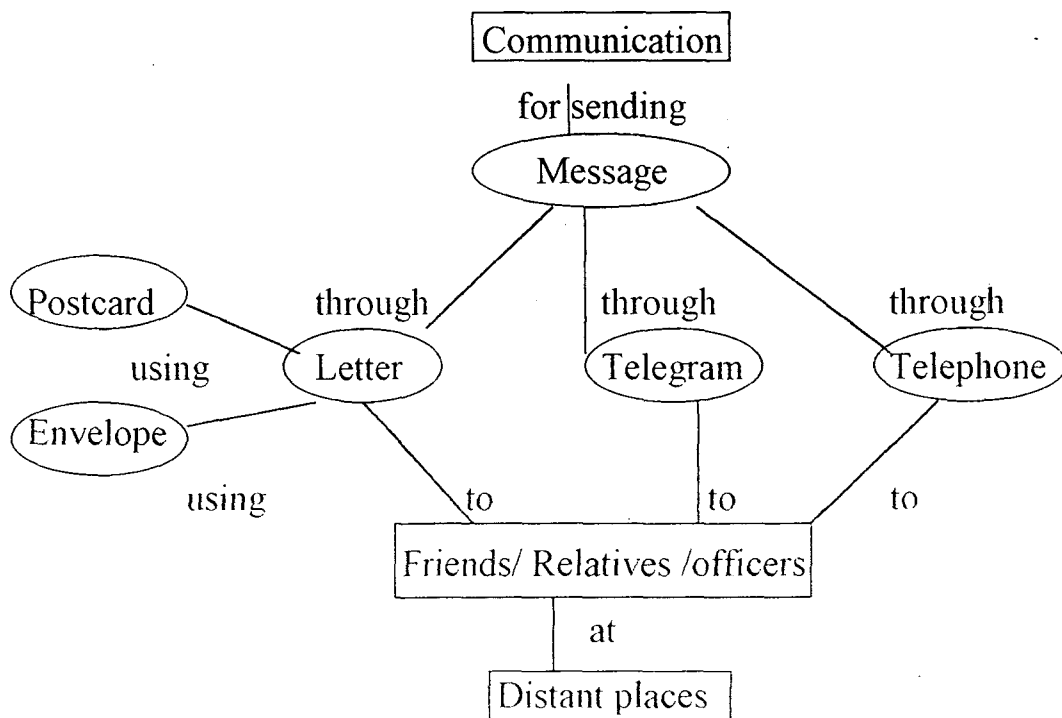
The source initiates a message by encoding a thought. The message is the actual physical product from the source encoding and when we speak, the speech is the message. When we write, the writing is the message. The channel is the medium through which the message travels. The receiver is the object to which the message is directed. But before the message can be received, the symbols in it must be translated into a form that can be understood by the receiver this is the decoding of the message.

TEACHING POINT

Means of communication for communicating personal messages.

TRANSACTIONAL STRATEGY

The teacher may explain the means of communication for communicating personal messages by drawing a cognitive ^{map} on the black board and help the students to understand this cognitive map.



Teacher may use the above cognitive map to discuss the different means of communication such as :

- People staying at different places send written messages by means of letters.
- Short and urgent messages can be sent quickly through a telegram.
- We can talk instantly with other persons through a telephone.
- Some of these means are used for communicating personal messages.

ACTIVITIES

- Plan a visit to nearest post office or telegram office.

STUDENTS ACTIVITIES

- Acquaint themselves with different postal materials such as post card, envelopes, inland letters, aerogram, proforma for telegram, money order etc.
- inquire about the cost of postal materials
- know the pin code of important cities in India.
- Inquire about the STD code of important cities in India.

TEACHING POINT

Letters undergo a long journey before it reaches its address.

TRANSACTIONAL STRATEGY

Teacher may plan a game 'POST ME' to help students to remember the steps of journey of a letter.

POST ME

You are writing a letter to your grand father who lives in Calcutta.

These are the 12 steps before it reaches your Dadaji.

- 1 You will write a letter.
- 2 Put in an envelope
- 3 Write your grand father's full address including pin code of
Calcutta
- 4 Affix proper stamps.

- 5 Put the letter into the post box.
- 6 The postman takes it to the post office.
- 7 In the post office it goes into the Mail bag bound for Calcutta.
- 8 The mail van takes the bag to the train.
- 9 The train takes it to the post office in Calcutta.
- 10 Your letter goes to the post office near the house of your grand father.
- 11 The postman in Calcutta deliv^ers the letter to yof^u Dadaji.
- 12 Dadaji enjoy reading your letter.

DIRECTION:

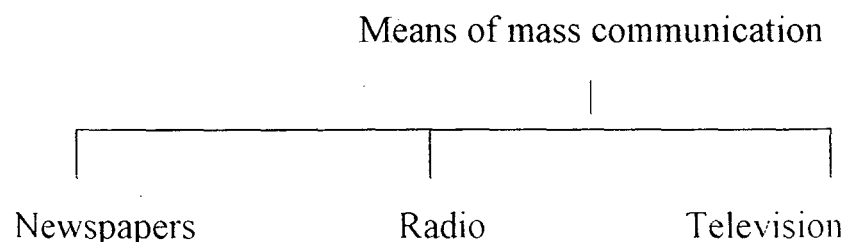
To play this game: call any twelve students from your class. Give them number one, two ... to twelve. Write the above twelve steps separately or flash cards or pla cards. You may cut these cards from the cards given below. Give one pla card to one student. Now the twelve students should be asked to stand in the sequence of their number say 1 to 2,3 ,... and so on to 12. The other students will enjoy this game.

TEACHING POINT;

There are means of communication for communicating message to masses.

TRANSACTIONAL STRATEGY

Teacher may draw the following diagram on the black board to explain the means of communication for sending messages to masses.



Now explain that –

- The latest national and international news reaches us through the news papers.

- Radio is a very effective means for listening to news and entertainment programmes.
- Television is a very effective means for watching national and international events selling in their own homes.

ACTIVITIES FOR STUDENTS

- Ask students to prepare the news brief with the help of news papers and present before the group/class.
- Share their experiences of listening to Radio programmes as well as watching the programme on T.V. with their classmates.

TEACHING POINT :

Modern means of communication is Internet

TRANSACTIONAL STRATEGY

Teacher should explain the use of computers through Internet for receiving and transmission of information in any part of the world.

ACTIVITY

Plan a visit to the communication centre or the computer laboratory. Explain the procedure of using Internet facilities for receiving information and receiving or sending the e-mail.

Modern means of communication such as computers, T.V. uses satellites for sending and receiving the information.

EVAUATION EXERCISE

1. Fill in the blanks :
 - a) We use to send an e-mail (computer)
 - b) Modern means of communication are controlled by (satellites)
 - c) A machine is always attached to a telephone (Fax).
2. Circle the means of communication

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| W | I | R | E | L | E | S | S | A | T | P |
| F | A | R | P | E | T | X | U | N | E | C |
| A | R | J | A | T | K | R | O | C | L | L |
| X | A | I | G | T | U | A | T | O | E | B |
| A | D | M | E | E | R | S | R | U | G | C |
| M | I | V | R | R | R | N | O | R | R | M |
| M | O | B | I | L | E | P | Q | I | A | N |
| T | E | L | E | P | H | O | N | E | M | U |
| N | E | W | S | P | A | P | E | R | O | S |
| S | P | E | E | D | P | O | S | T | S | G |
| T | E | L | E | V | I | S | I | O | N | M |

पहेलियों के उत्तर दीजिए

- 1 छोटा सा डिब्बा घर घर का व्यास दिखाएं दुनियां सचमुच है प्यारा
- 2 बिन पैरों के ही चले तेज अशक की चाल बतलाता संक्षेप में जो आवश्यक हाल
- 3 समाचार लाता हूं प्रातः नही लगाता देर मैं फैंक दिया जाता हूं दूजे दिन रद्दी के ढेर में
- 4 करदी पहल उठाकर थैला नियत समय पर वह चल देता गली गली घर घर जाकर के जिसका हो उसको दे देता ।

उत्तर - 1 टेलीविजन 2 तार 3.अखबार 4.पोस्टमैन

2 Select from the following means of communication. (Post card, radio, television, newspaper, telegram, envelope)

For sending personal message to For sending messages to mases

- | | |
|---------|---------|
| a)..... | a)..... |
| b)..... | b)..... |
| c)..... | c)..... |

COMMUNICABLE DISEASES : SOURCES AND THEIR PREVENTION

OVERVIEW

There are certain diseases, which are caused when a sick person comes in contact with a healthy person. Such diseases are called communicable diseases. they are caused by different kinds of germs. The germs of these diseases are transferred from a sick person to a healthy person by air, water, food or insects (housefly, mosquitoes). Many diseases like Cholera, Measles, Dysentery, Malaria etc. are caused due to germs. Prevention of these diseases can be done by preventing contamination of water sources. see that garbage should not be disposed around the source of water. Washing hands properly avoids contamination of food. Trimming the nails from time to time and burying the nails of patients under the ground prevents contamination of diseases. When a patient coughs or sneezes, germs from his mouth or nose spread in the air. So avoid them. Proper diagnosis and treatment of these diseases, we should consult the doctor.

Objectives :

- Pupil have the knowledge of communicate diseases.
- Students also understand that it is due to contamination of food.
- Student apply knowledge that if water contaminates it leads to communicable diseases.
- Pupil realises that apart from food and water air causes communicable diseases.

- Flies are the agents of diseases.
- Bacterial and viral diseases spread from person to person.

MAJOR TEACHING POINTS/CONCEPTS

- 1 Communicable diseases spread through agents like Food/ Water/ Air.
- 2 Communicable diseases spread through flies.
- 3 Some diseases spread through Bacteria.
- 4 Virus also agents of communicable diseases.
- 5 What are the symptoms of diseases like (a) Malaria (b) Cholera (c) Typhoid (d) Jaundice (e) Dysentery

EXEMPLAR ACTIVITIES

(Activities in proving concepts/Teaching points)

CONCEPT/TEACHING POINT :

Communicable diseases spread through agents like Food/Air/Water.

| | |
|---|--|
| <p>Sometimes germs collect underneath the nails of the hands due to improper handwashing. When such a person cooks(or) serves food to a healthy person, he fall ill due to this, House flies also carry germs from garbage/food/farcal matter and contaminate food.</p> | |
| <p>People if dispose the human waste near a water source like a well, tube well (or) a hand pump. The germs present in the human. Waste</p> | |

| | |
|--|--|
| therefore get transferred to the source of water. The person who uses it may fall ill. | |
| When a patient coughs or sneezes germs from his mouth or nose spread in the air. These germs enter the body of a healthy person through breathing so that diseases spread through air. | |

ACTIVITY

Ask the students to differentiate between pure water and contaminated water. Students can discriminate between fresh cooked food and contaminated food. Make the students to observe the persons whose nails are not cut and how they spread diseases. Students are advised to be careful when they come across with a patient suffering from sneezing and coughing by holding handkerchief.

2.CONCEPT/TEACHING POINT :

Communicable diseases spread through houseflies diseases like Cholera, Typhoid, and Diarrhoea spread through flies, when these flies sits on the garbage or excreta, the germs present on the legs of the housefly directly contaminates the food items. If a healthy person eats such food, germs enter his body and the person may fall ill. in this way house flies spread the communicable diseases.

ACTIVITY

Ask the students to make notice about the food items which will be sold by vendors around their schools. Instruct them not to take such

contaminated food and get into diseases. Make students alert in observing a person who consumes that food during recess period. Care should be taken by the teachers to avoid vendor around the school.

3.CONCEPT/TEACHING POINT – Some diseases spread through Bacteria

Certain bacteria spreads diseases like Typhoid, Dysentery, Cholera and Tuberculosis, Diphtheria and Whooping cough. These bacteria will be present in contaminated food, water and air. This contamination of food will take place due to flies and nails of human beings. Diphtheria and whooping cough. Spreads through Air. So bacteria are unicellular organisms present in water and Air. Through agents like flies, food, water and air the diseases contaminates from one person to another. The diseases Typhoid and Tuberculosis contaminates through food, water and utensils.

ACTIVITY

If possible take the students to near hospital where you can see separate wards for patients suffering from Infections diseases.

4.CONCEPT/TEACHING POINT – VIRUS ALSO AGENTS OF COMMUNICABLE DISEASES

Viruses are more powerful micro organisms. They spread the diseases like Jaundice, Heasels. This virus present in sick person comes in contact with healthy person when they share utensils/food/clothes. Segregation is maintained in this diseases. Apart from medicines food plays an important role incurring this diseases.

ACTIVITY

Ask the students to notice and make queries about this two diseases with their parents. If possible observations can be made by teh students about the sufferers.

5.CONCEPT/TEACHING POINT – WHAT ARE THE SYMPTOMS OF DISEASES like (a) Malaria (b) Cholera (c) Typhoid (d) Jaundice (e) Dysentery.

Diseases and symptoms of the above diseases are explained in a tabular form.

| S.No. | Diseases | Symptoms |
|-------|---------------------------|--|
| 1 | Malaria (Mosquitoes) | Fever and cold (chillness of the body) |
| 2 | Cholera (Houseflies) | Vomitting and Loose motions |
| 3 | Typhoid (Flies)(Bacteria) | * High and continuous Fever * Evening Fever can be seen |
| 4 | Dysentery (Bacteria) | * Blood and mucus in stools * Frequent pain in stomach * Frequent passing of stool |
| 5 | Diphtheria (Bacteria) | * Fever * Itching and swelling in throat * Difficulty in Breathing |
| 6 | Whooping cough (Bacteria) | * Dry and continuous cough * Face turns red while coughing * Watery eyes * Wild fever |
| 7 | Tuberculosis(Bacteria) | * Poor appetite * Loss of body weight * Low grade fever * Blood with sputum |
| 8 | Measels (Virus) | * Running nose, cough |

| | | |
|---|------------------|---|
| | | <ul style="list-style-type: none"> * Redness on the body * Fever |
| 9 | Jaundice (Virus) | <ul style="list-style-type: none"> * Nails, Eyes and skin become yellow * Urine turns yellow * Loss of Apptite * Mild fever |

ACTIVITY

As the students to identify any sick person nearby his home and if it is Malaria ask him to take preventive measures in controlling mosquitoes. Take students to the near by health centre and to show the parents suffering from above diseases. Students are also asked to enquire about the above diseases with their parents, neighbours, elders and relatives. Through there or cautions students will become Alert.

6.CONCEPT/TEACHING POINT : PREVENTION OF COMMUNICABLE DISEASES

The preventive measures for communicable diseases can be explained to the students through charts. Hang the charts on the wall of the classroom after teaching is over.

| S.No. | Diseases | Prevention |
|-------|----------|--|
| 1 | Malaria | <ul style="list-style-type: none"> * Prevention of Mosquitoes * By sprinkling kerosene on water pools. |
| 2 | Cholera | <ul style="list-style-type: none"> * Use clean water * Use ORS (Oral Rehydration |

| | | |
|---|----------------|--|
| | | solution) |
| 3 | Typhoid | * Vaccination * Avoid contaminated food and water |
| 4 | Jaundice | * Use clean water and food * Get/take Hepatitis vaccination |
| 5 | Dysentery | * Avoid contaminated food and water |
| 6 | Measels | * Vaccination/Segregation |
| 7 | Tuberculosis | * Vaccination |
| 8 | Diphtheria | * Vaccination |
| 9 | Whooping cough | * Vaccination |

ACTIVITY

Ask the students to make a list of contaminated diseases and their prevention.

EVALUATION

Answer the following questions

- 1 Is contamination of food/water/air leads to communicable diseases?
- 2 How does Malaria spread from one person to another?
- 3 Give importance of diseases like Diphtheria and Whopping cough.

Fillin the blanks :

1. Cholera spreads through and
- 2 Loss of weight is a symptom of disease
- 3 Measels spreads through
- 4 ORS is given to control disease.

True/False

- 1 Dysentery is a blood motion
- 2 Evening fever is seen in Typhoid.
- 3 If urine is yellow it is an indication of Jaundice
- 4 Cutting of nails leads to infectious diseases.

Home Task

- 1 Ask the students to discuss and report about the various communicable diseases
- 2 Ask the students to make out a list of prevention of communicable diseases.

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APPENDICES

DEPARTMENT OF EDUCATION
REGIONAL INSTITUTE OF EDUCATION, AJMER

Training of KRPs in activity based teaching of EVS at primary level with Focus on evaluation and low cost teaching aids for the state of J&K and U.T.
Chandigarh

Venue ; SIE, Jammu

Dates : 27.12.04 to 30.12.04

Working paper

Environmental studies – an introduction

Curriculum revision and development is an on-going process of education. The last decade has however, witnessed some significant developments both at the national and global level. This necessitated changes in the curriculum at all levels of school education. In view of the above, National Curriculum Framework for School Education (NCFSE), brought out by NCERT in 2000, has recommended some modifications at all levels. The NCFSE perceived environmental studies differently in terms of concept, approach and treatment at the primary stage. The change in the concept approach has been guided by various environmental concerns such as explosion of knowledge, technological advancement, change in ways and quality of life, change in school set up etc. In the new scheme of studies, for classes III to V, Environmental studies (EVS) has been introduced an independent area of study where in the social (social studies or EVS-I) and the natural (Science or EVS-II) components of the environment have been visualised in an integrated form.

Environmental studies (EVS) at the primary stage has a three fold approach in its treatment, i.e. learning through the environment, learning about the environment, and learning for the environment which makes this area distinctive and inter disciplinary. It employs a systematic exploration of environment through a variety of individual and Group Activities. The prime purpose of organising individual or group activities is to involve the children in the transactional process.

Activities

The core idea of organising group activities is to develop necessary social skills among the children such as working together, sharing, helping others, team spirit etc. Lesson 10 (working together) in class III and lesson 11 (our school) in class IV are focused on such social skills. Many such activities are suggested in the text book in the section 'things to do'.

Suggestive activities for classes III-V.

Which can be organised in graded manner for teaching learning of EVS:

- Observing local environmental objects
- Discriminating; environmental objects
- Classifying environmental object.
- Finding solution to simple problems of soil erosion etc.
- Conducting simple projects e.g. preparation of scrap books, albums, means of communication etc.
- Organising resources of an protection of environment etc.

Teaching Learning Material (TLM)

The best TLM are the actual environmental objects available in the immediate environment and eal life of day to day situation of the child.

The environmental objects of the immediate environment such as : different kinds of plants, animals, non-living things, various kinds of food items, types of houses, soil etc. are such resources which can be used as an effective learning aids for the children.


Locally available concrete environmental material such as pebbles, soil, sticks, wood may be used as learning material.

Low cost developed materials such as charts, maps, pictures, globes, models (internal organs, body system), pictures etc. can be used as teaching aids.

EVALUATION IN EVS

Evaluation in Environmental studies has to be formative in nature with adequate emphjasis both on cotinuity and comprehensiveness. The suitable techniques of evaluation in classes III to V are observation, oral and written tests. Diagnostic and remediation should go hand in hand to overcome the hardspots of learning. The observation schedules and rating scales for assessing habits, skills, attitudes may be used. The written form of tests includes short, very short and objective type questions.

Absolute grading on five point scale for assessing cognitive behaviour and direct grading on three point scale for affective and psycho-motor aspects of child behaviour have been suggested.



(Dr. V. P. Agarwal)

Programme coordinator


Regional Institute of Education, Ajmer
Training of KRPs in Activity Based Teaching of EVS at primary level

Venue : State Institute of Education, Jammu (J&K)

Dates : 27.12.04 to 30.12.04

| Date & Date | 9-10AM | 10-11 AM | 11.15-12.15PM | 12.15-1.15PM | 2.30-3.30PM | 3.30-5.00PM |
|-----------------------|--------------------------|----------------------------|---|--------------------------------|--------------------------------|--|
| Monday 27.12.04 | Registration | About the programme | Environment and Environmental Studies Conceptional Meaning | NCF & EVS at the primary level | Activity based teaching of EVS | Group work |
| Tuesday 28.12.04 | Transactional Strategies | Integrated approach to EVS | TLM in EVS | Water & water pollution | Evaluation in EVS | -do- |
| Wednesday 29.12.04 | Grading | Force, work & Energy | Air and Air Pollution | Transport | Our country & National symbols | -do- |
| Thursday 30.12.04 | Value dev. through EVS | Living and Non-living | Communication | Communicable diseases | Group work | Presentation of Group work report valediction |

Tea break 11.00-11.15 ; Lunch break – 1.15 –2.30 PM


 Programme coordinator

Class wise (III, IV, V) Course content

Theme – Me and My surroundings

(14)

| Sub-Theme | Class III |
|-------------------------------------|---|
| 1. My Body | <ul style="list-style-type: none"> • Main parts of the body (External) and their functions • Physical similarities and differences in human beings and other living things |
| 2. My Needs (i) Food, Water, Air | <ul style="list-style-type: none"> • Difference kinds of food taken (cooked/raw) • Need for food and water for living beings • Ways of safe storage and handling of food and drinking water and avoiding their wastage. • Avoiding wastage of food and water • Need of clean air • Water cycle • Sources of drinking water |
| (ii) Shelter | <ul style="list-style-type: none"> • Need for shelter for the living beings and their types • Shelters of other living beings (Local) • Location of places (in the village/town) through use of symbols and map, not to scale |
| (iii) Clothing | <ul style="list-style-type: none"> • Dresses we wear • Times and need for wearing clothes (season wise) |

| Class IV | Class V |
|---|---|
| <ul style="list-style-type: none"> • Main internal organs of the Body- names and their recognition • Similarities and difference between living and non-living | <ul style="list-style-type: none"> • Main system of the body |
| <ul style="list-style-type: none"> • Sources of food and drinking water • Food items taken by the family and their importance • Constituents of air, its characteristics; safeguards against pollution of air | <ul style="list-style-type: none"> • Difference between needs and wants • Interdependence of man and environment vis-à-vis food • Classification of food items on the basis of their importance for body building, energy-giving, providing protection against diseases • Common deficiency diseases- causes and their prevention • Air borne diseases |
| <ul style="list-style-type: none"> • Safe and healthy living places (Sun-light, ventilation, sanitation) • Types of houses and their relationship with environment • Locating important places in the neighbourhood with help of a map | <ul style="list-style-type: none"> • Buildings' agencies in the community- health centre, Police Station, their major roles • reading map (state, country) and locating places on the globe • Need for scale and standard symbols on a map |
| <ul style="list-style-type: none"> • Maintenance of clothes • sources of raw material for clothes and people associated with producing them | <ul style="list-style-type: none"> • Relationship of dress with physical and cultural variations |
| <ul style="list-style-type: none"> • Constituents and functions of | <ul style="list-style-type: none"> • Care of body parts including sense |

| | |
|---|--|
| | |
| (V) Recreation | <ul style="list-style-type: none"> • Various means of recreation at home/locality • Common celebrations in the family and their significance • Celebrations and community Singing in the school |
| (vi) community service | <ul style="list-style-type: none"> • Care of old, sick, differently challenged groups of people-role of individuals • Care of plants, animals pets-role of individuals |
| (i) Social and administrative structure | <ul style="list-style-type: none"> • |

| | |
|--|--|
| <ul style="list-style-type: none"> • Emergency care | <ul style="list-style-type: none"> • material • Guarding against local myths and superstitious vis-à-vis disease |
| <ul style="list-style-type: none"> • Celebrations in the school and community (Social, national level celebrations) • Community signing in the community school • National symbols-their significance • National bird, animal and flower | <ul style="list-style-type: none"> • Celebrations of important days National and International (Environment Day, Children's Day, Literacy Day, Teacher's Day, Health Day, etc.) and their significance • National parks, bird sanctuaries |
| <ul style="list-style-type: none"> • School Health Club (Health messages for parents, community emergency care) • Stories of great men and women of our country • India and its neighboring countries (names) • Life in Villages • States and Union Territories, their capitals • Some historical personalities and important monuments/buildings (local and national) | <ul style="list-style-type: none"> • Role of individuals and community during natural calamities • Stories of freedom fighters (local and national) • Stories of Indians who contributed in the fields of medicine, educations, arts etc. • Care of Historical monuments and their preservation • Stories related to historical monuments • Indian democracy and its features • Cultural heritage-being proud to be Indians |
| <ul style="list-style-type: none"> • | <ul style="list-style-type: none"> • |

(v)

| | |
|--|---|
| <p>iv) Surroundings</p> <p>(i) Natural Phenomena and Resources</p> | <ul style="list-style-type: none">• Heavenly bodies-the earth, the sun, the moon, the stars• Local Natural Resources –their uses in day-to-day life |
| <p>(ii) - Transport and Communication</p> | <ul style="list-style-type: none">• Local means of Transport and Communication.• Safety rules in the home, school and on the road; road symbols• Story of the wheel |

(1A)

| | |
|---|---|
| <ul style="list-style-type: none"> • Simple natural phenomena- day and night, their effects on day to day life • Natural resources and their uses • Need for protecting natural resources (avoiding misuse) • Inter-dependence of human beings and plants and animals | <ul style="list-style-type: none"> • Major physical features of our country-their effect on climate and ways of life of people including their occupations • Conservation of various natural resources • Inter-dependence of people living in different parts of the country |
| <ul style="list-style-type: none"> • Various types of means of transport and communication, their effects on human life • Story of the fire • Stories of persons who invented different means of transport and communication | <ul style="list-style-type: none"> • Effects of advancements in transport and communication (both positive and negative) on human life • Measures to reduce the negative effects • Stories of inventors and discoveries; their contribution to quality of human life. |

Regional Institute of Education, AJMER

Training of KRPs in Activity Based teaching of EVS at primary level
held at SIE, Jammu (J&K) from 27-30 Dec.,2004.

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