

INNOVATIVE ACTIVITIES USED FOR TEACHING ENVIRONMENTAL STUDIES- II IN SOUTHERN INDIA



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ABOUT THIS PROJECT

In any educational system teacher plays a very important role. Teaching is a very interesting communication process by which students gain knowledge develop skills and mould their attitudes. Teaching learning activities both inside and outside the classroom have a very significant contribution in this process. Students not only listen to the teacher but also see and do activities themselves which imprints rewarding and lasting impression on them.

Teachers make changes in their methodology to suit changing needs, changing environment and changing physical facilities. They alter and modify existing ideas to achieve educational goals. This leads to better interaction and positive growth and development of the students.

The innovative ideas of the teacher are based on action research in the classroom. He uses locally available materials and involves local community. His direct interaction with the students and the surroundings helps him to modify his methods. His rich experience and innovative practices need to be communicated to other teachers for possible try-out in their classrooms. Different teachers are faced with different environment, different facilities and different group of students. But the innovative activities of other teachers will help and inspire them in modifying

their own approach. So it is desirable that innovative methods tried out in the classrooms are widely disseminated.

This study has been undertaken to compile and analyse such innovative activities. For this purpose a project team having rich experience both in the content and methodology of teaching science was constituted. The members were well acquainted with the production of low cost activities used in the schools. The members were also familiar with the different languages used in schools situated in different regions.

The environment in which the child lives has also to be exploited in order to make learning more effective. By using local surroundings and ensuring community participation, it is possible to provide a variety of exciting experiences. However this needs lot of imagination, and innovation on the part of the teacher.

It was necessary to select schools from different regions like, seashore, dry area, forest area, urban area and cities, because the physical and social environment are different in these regions and accordingly the teaching activities may differ.

The members of the project team visited the schools in different regions and had discussions with the teachers.

Wherever possible they saw the activities conducted by the teacher in the classroom and in other cases requested the teacher to demonstrate the activities they had used in the classroom. In order to get maximum information from such interactions a detailed proforma to collect data was prepared. These proforma were tried out in Demonstration Multipurpose School, Mysore and suitably modified (Appendix I). The project team took note of only those activities which are not discussed in the class textbooks.

Dr. Gopal visited schools in Vijayanagaram district of Andhra Pradesh, Dr. Madha Suresh visited schools in Villupuram district of Tamil Nadu, Dr. Prakash visited the schools in the hot and arid region of Raichur district, Karnataka and Sri. D.N. Nagaraj visited the schools in the rural schools of Mysore district, Karnataka, Dr. Narayan visited schools in the forest region of Wynad district of Kerala State. It was necessary that the samples of the schools visited, provide useful information. Accordingly it was decided to select the schools in the DPEP project districts. The teachers in these schools were exposed to recent methods of teaching science in the elementary classes. The list of schools in which innovative practices are likely to be found were supplied by the district educational authorities. On being specifically informed by

the Principal, RIEM about the scope of the project the Principals of DIET in the DPEP districts had sent us a list of 10 schools in each district where according to their information innovative practices are being used in the teaching of EVS. In most cases school inspectors or concerned officers of the DIET accompanied our project staff and helped in getting the necessary information.

Using the proforma filled by our project team, write ups on different innovative activities are prepared. The sketches drawn by them were used by the artists to draw neat diagrams. The writeups were edited and the competencies that could be developed by these activities are discussed and listed in the end of each activity. The innovative activities are listed under four major topics: (1) Good Health, (2) Living Things, (3) Non-living Things and (4) Phenomena of the Earth and Sky. A brief description of the activities is given and the details of the activities differ from teacher to teacher. The description along with the diagrams give sufficient idea for other teachers to try them in their classrooms. All the possible competencies are serially numbered separately. The competencies related to each activity are listed by their serial numbers at the bottom of each writeup.

The salient feature of this report is that it gives the descriptions of activities that are being actually conducted by the teacher, in the schools.

However the study sample was limited to few schools in each state and therefore many other innovative practices could not be recorded.

The activities described in this study can give a good idea of resources available in the schools and in the community of the region. They also give an idea about the possible activities and resourcefulness of the teachers teaching EVS. It suggests the possible learning outcomes that could be expected by teaching EVS. It is observed that the learning outcomes are the same as listed in the MLL.

The activities described will help teachers in teaching EVS. They will be of great use in developing teachers handbooks and supplementary learning materials. They provide a good idea for the curriculum makers regarding the type of possible activities and possible learning competencies. They will also be useful for the key persons in organising inservice training programme for elementary school teachers.

March '98

S.G. GANGOLI
PROJECT DIRECTOR

PROJECT TEAM

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ACKNOWLEDGEMENT

Many educationists have helped in completing this project. Former Principals, Prof. C. Seshadri gave his guidance in formulating the project and Prof. STVG Acharyulu wrote to the Principals of DIETs and got relevant information about the schools. Our Principal Prof. S.N. Prasad and Dean Prof. J.S. Gill took active interest and had useful discussions regarding the execution of this project. The Principals and the staff of the DIETs of the DPEP districts provided us the list of schools that are using innovative practices and helped in collecting the data.

Dr. Gopal prepared the writeups for 20 activities pertaining to Andhra Pradesh. Dr. Madha Suresh prepared writeups for 11 activities of Tamil Nadu. Dr. G.R. Prakash and Sri. D.N. Nagaraj prepared writeups for a dozen activities pertaining to Karnataka. Dr. Narayan prepared two writeups for Kerala. Other members of the project team Mrs. Shubha Keshavan and Miss Manjula Saxena gave useful suggestions at different stages of this project.

I thank all of them and also the Programme Advisory Committee of NCERT for providing the necessary financial support.

March '98

S.G. GANGOLI
PROJECT DIRECTOR

**LIST OF COMPETENCIES THAT ARE EXPECTED TO BE DEVELOPED AT
THE ELEMENTARY STAGE**

1. Awareness about dependence of man on environment.
2. Awareness about one's socio-civic environment and responsibilities towards it.
3. Knowledge of different occupations and appreciation of dignity of labour.
4. Understanding and interpreting the interaction between man and environment.
5. Awareness of the bearing of the past on the present.
6. Awareness of the socio-economic problems and suggesting suitable solution.
7. Understanding the factors contributing to the preservation of good health.
8. Gathering and classifying information about living things from one's environment and drawing simple inference.
9. Gathering and classifying information about non-living things from one's environment and drawing simple inference.
10. Observing simple phenomena on the earth and in the sky and drawing inference.

A-1

School: Government Lower Primary School, Harohalli, P.O.,
Mysore District

Name of the Teacher: Smt. D.A. Nagarathnamma

Topic: Good Health

Major Idea: Water Pollution

Activity: Field trip to observe water pollution in a village tank.

Description: The teacher takes the students (children) to the village tank. They observe the different activities near the tank, i.e. washing clothes, bathing, washing animals, etc. The teacher collects a sample of this water in a bottle. The teacher also collects water from the borewell nearby the school. The teacher now compares these samples and shows that the water from the tank is dirty and therefore it is not fit for drinking purpose.

The water collected from the borewell is clean and it can be used for drinking purpose. The teacher also tells children to make a habit of bringing clean water in bottles to the class for drinking.

Expected Competencies: 1, 2, 3, 6, 7

Water pollution from washing bathing, cleaning animals/vessels/defecating



School: Government Higher Primary School, Mandakalli P.O.,
Mysore District

Name of the Teacher: Sri. Ningegowda

Topic: Good Health

Major Idea: Pollution due to water stagnation

Activity: Students are taken to water logged areas in the village and with their help the cleansing is done.

Description: Teacher asks the students to identify the places in the community where water is stagnated. Teacher takes the students to one such place and explains that it will cause pollution and lead to mosquito breeding. With the help of students and some community members teacher makes a drainage for this water to flow.

This activity helps the students to understand the causes of pollution and its ill effects. They develop an awareness for keeping the home and school surroundings clean. The group activity develops in them a sense of civic responsibility.

Expected Competencies: 1, 2, 5, 6, 7



Pollution due to water stagnation



School: Government Girls Model Higher Primary School, Manvi,
Raichur District

Name of the Teacher: Sri. Hussainappa

Topic: Good health

Major Idea: Factors contributing to pollution

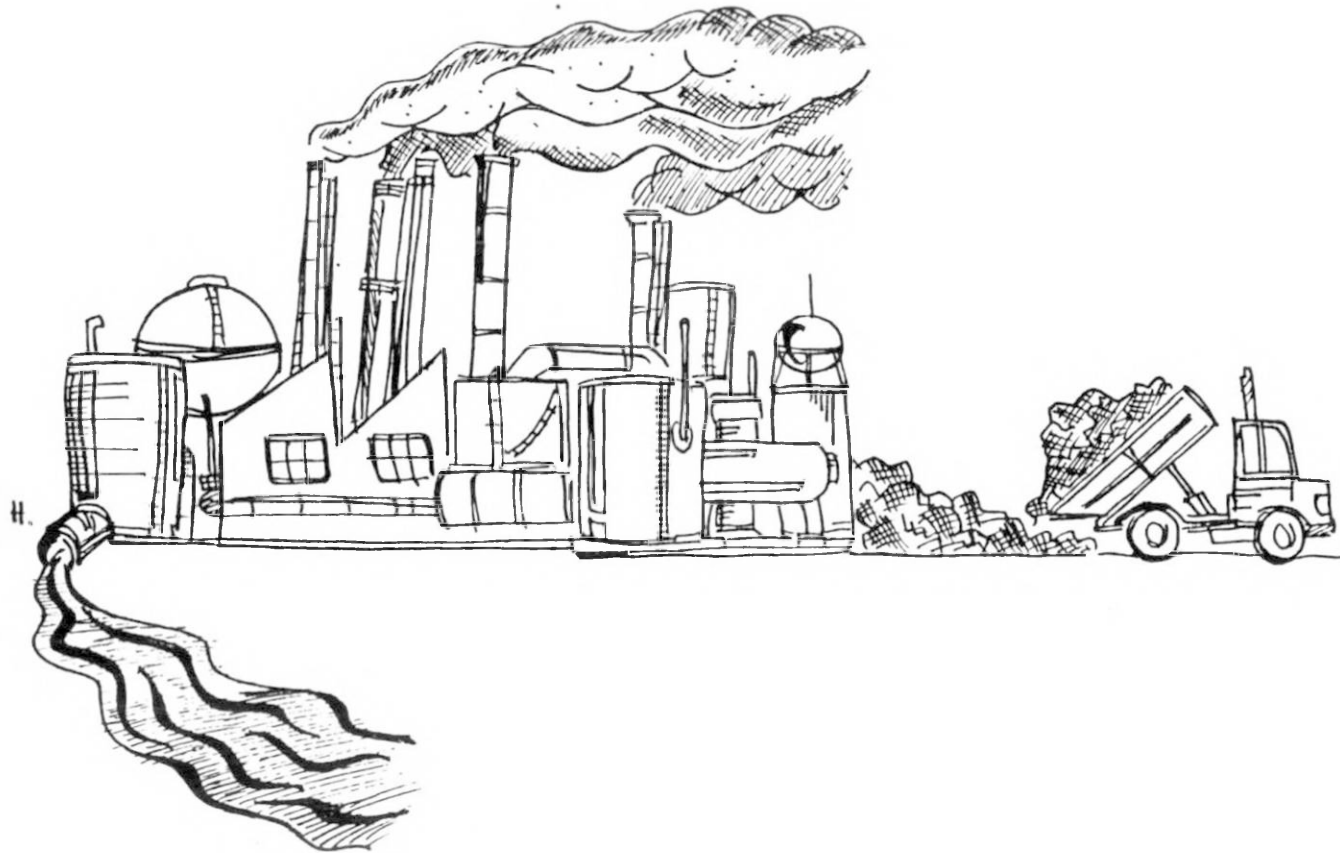
Activity: Use of charts to teach about pollution

Description: Teacher uses an album of charts describing various factors which cause environmental pollution. This album is prepared from newspaper cuttings, magazine cuttings and from xerox copies of diagrams from text books.

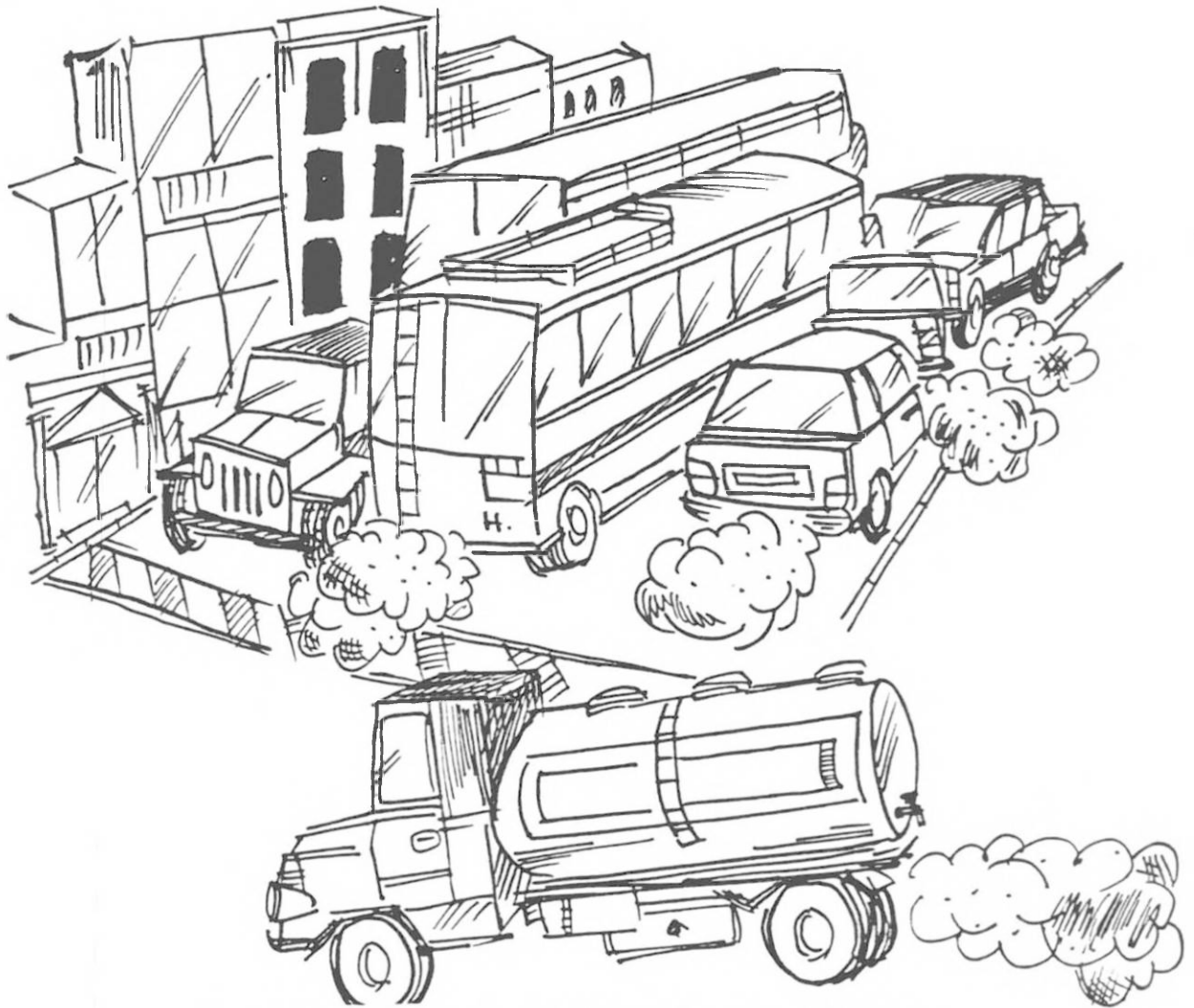
Following charts were used.

- Charts showing
1. industrial waste
 2. cutting of trees
 3. burning of brick
 4. vehicles emitting gases and making noise
 5. washing clothes in a river
 6. bathing animals in the river
 7. burning of cracker
 8. urinating and defecating near river.

Expected Competencies: 2, 4

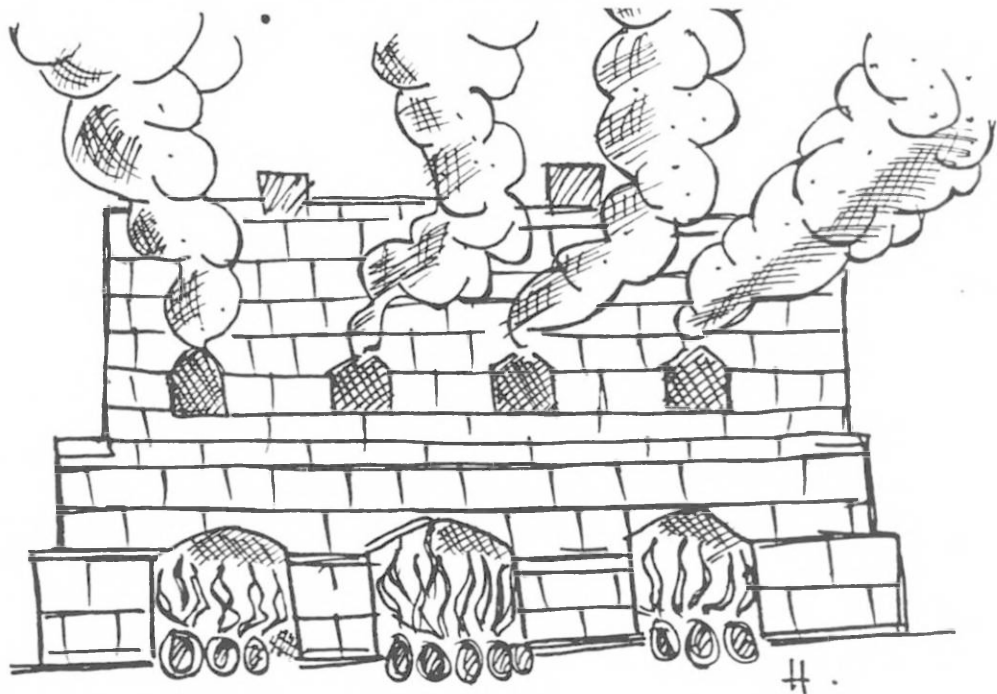


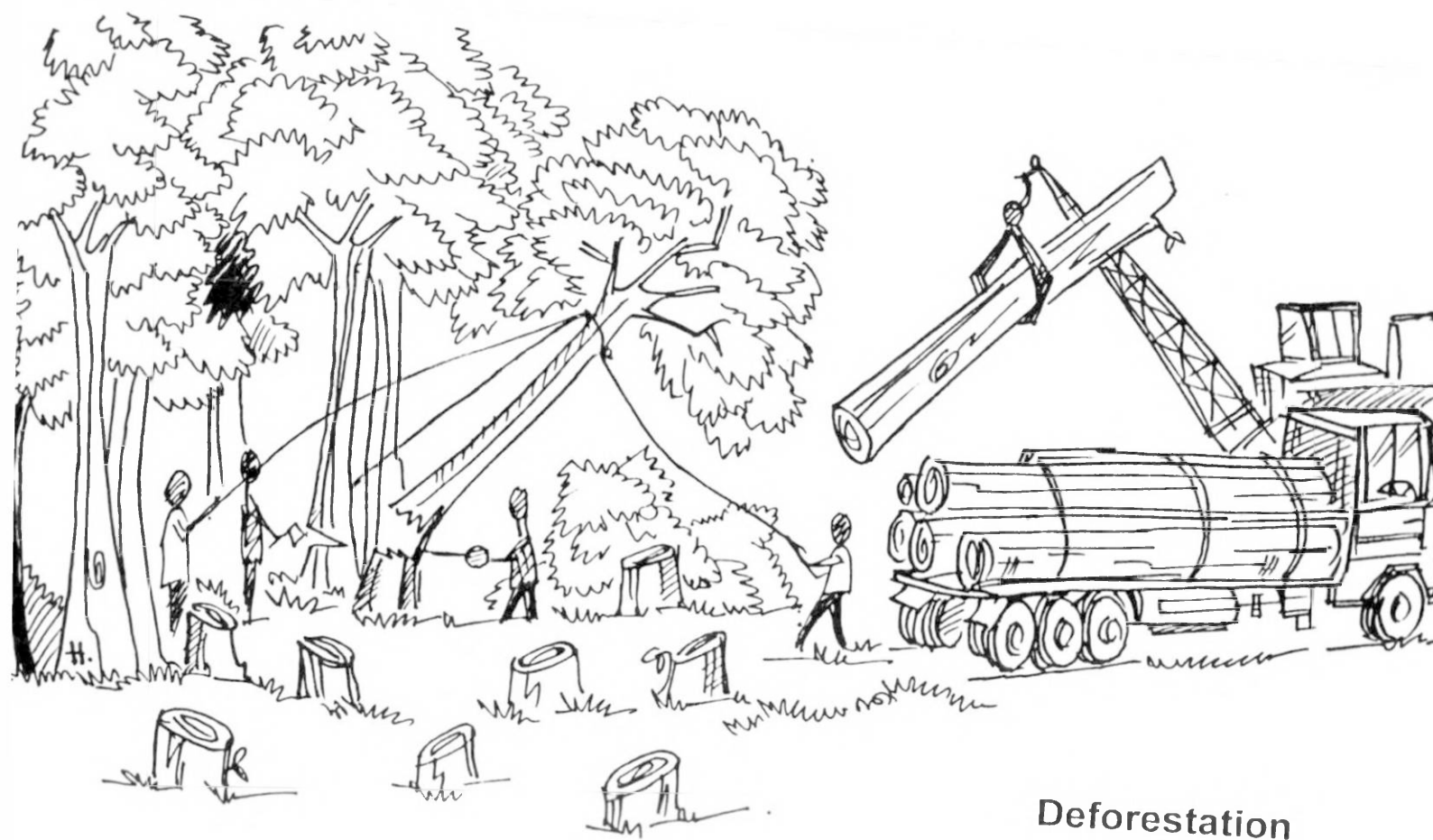
Noise and Air pollution from Industries



Noise and Air pollution from vehicles

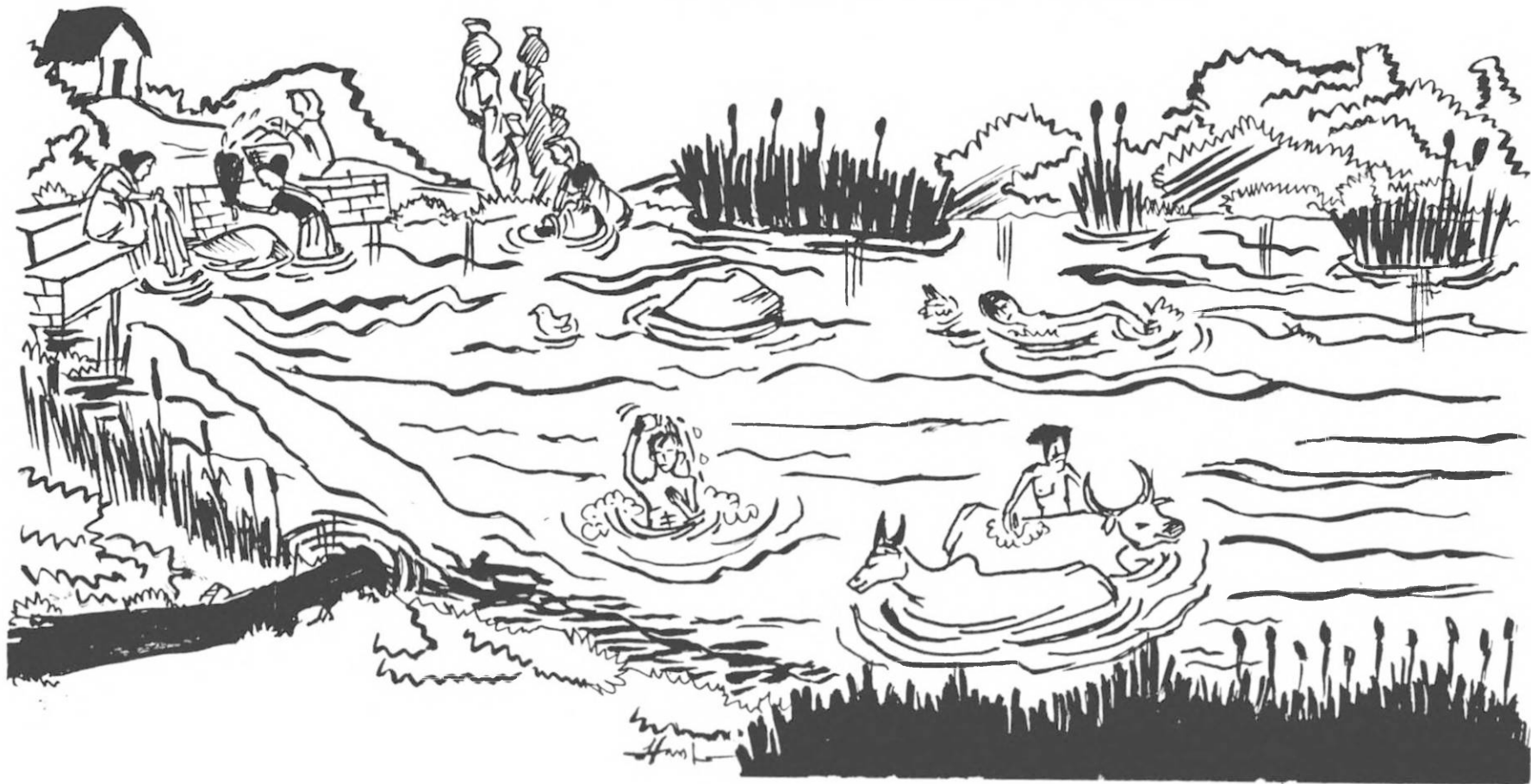
Air Pollution from burning bricks





Deforestation

Water pollution in a village tank





Noise and Air pollution from burning crackers

School: Panchayat Union Elementary School, Moorar,
Villupuram District

Name of the Teacher: C. Thara

Topic: Good Health

Major Idea: Explaining water pollution and its impact

Activity: Field trip to demonstrate water pollution in
surrounding area.

Description: During rainy day teacher asks students to collect fresh rain water in a trough and put it in a small bottle and label the bottle as sample one. Then teacher directs the students to collect rain water flowing in the field. Students collect the water in a bottle and label it as sample two. Similarly students collect water from the lake label it as sample three.

Teacher asks the colour of water of sample one. Teacher explains that since the rain water is collected indirectly without mixing with any substance it seems to be pure.

The sample number two is reddish in colour, since the rain water is mixed with the red soil in the field. The sample is kept in the class for about one hour and the



Polluted and unpolluted water samples

substances settled at the bottom of the bottle. Teacher explains to the students that the substances were nothing but soil particles, humus, etc.

Then the third sample was taken for discussion. Teacher asks students about the colour of water. They said, it is green. Teacher asked reason for the colour. Students were unable to give the answer. Then the teacher asked students what are the life forms in the water. They said that, snakes, frogs, fish and so on. Teacher further explained that the pool water consist of minor organisms and plants like algae apart from the animal. The algae shows its green colour. Then teacher asked the students to filter the water with thin cloth. All substances were filtered and water was so sterile. Teacher advised students that plain water contains contaminants and we should filter and boil this water for drinking, and culinary purposes.

Expected Competencies: 1, 7

School: Mandal Panchayat Elementary School, Pradeep Nagar,
Vijayanagaram District

Teacher: A. Madhavi

Topic: Good Health

Major Idea: Safe drinking water

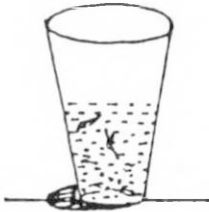
Activity: To discriminate water from different sources

Description: Students make clay models of well, pond and river. With the help these models and other charts teacher shown different sources of water. Students are asked to collect water from differnt sources in a bottle and bring them to the class. Students are asked to examine these samples with the help of magnifying glass and list observations. The teacher also ask them to test the water. In the observation students notice that rain water is the purest though it has no taste.

Expected Competencies: 1, 6, 7, 9

Safe drinking water

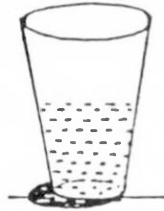
well water



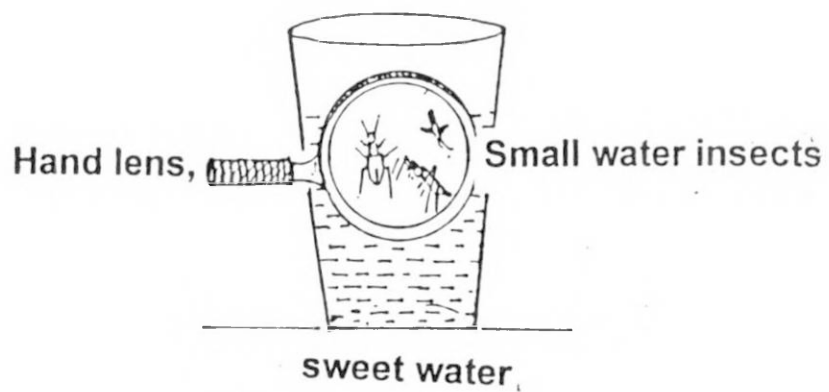
sea water



rain water



pond water



School: Mandal Panchayat Elementary School, Malilcherla-1,
Sankara Peta, Vijayanagaram District.

Teacher: P. Susheela

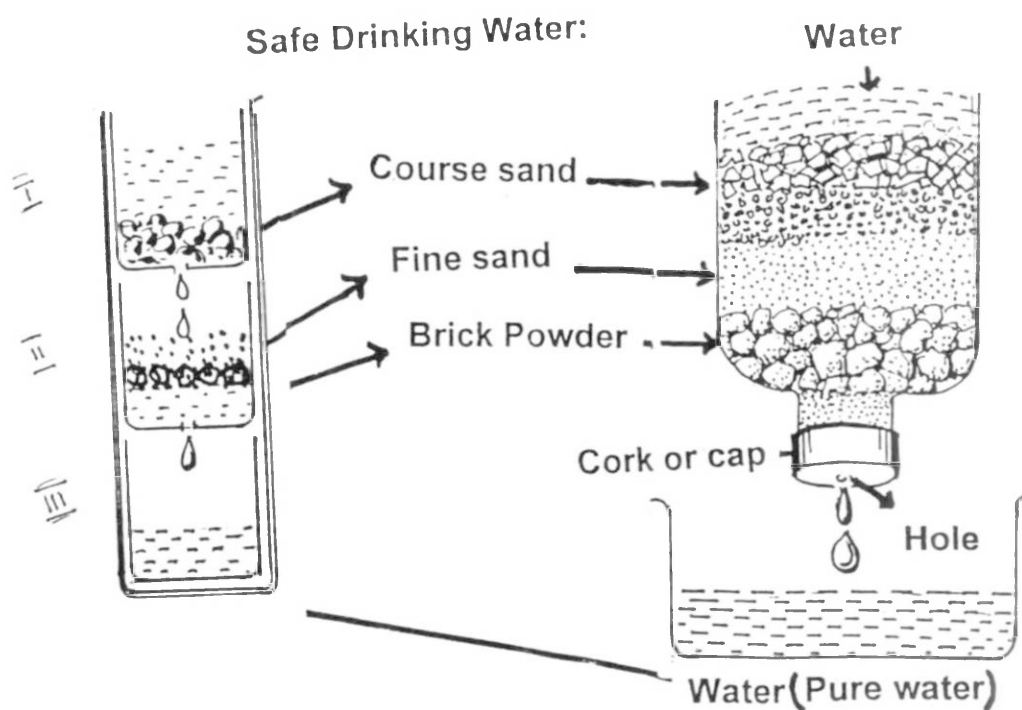
Topic: Good Health

Major Idea: Safe drinking water

Activity: Water purification using low cost materials

Description: Students collect identical empty cans, the first can is filled with coal and stones. A small hole is made at the bottom of the can. The second can is filled with sand and a hole is made in its bottom, and the last can collects pure water as shown in the diagram.

Expected Competencies: 1, 6, 7, 9



School: Mandal Panchayat Elementary School, Nellimarla Junction, Vijayanagaram District.

Teacher: G.V. Roja Ramani

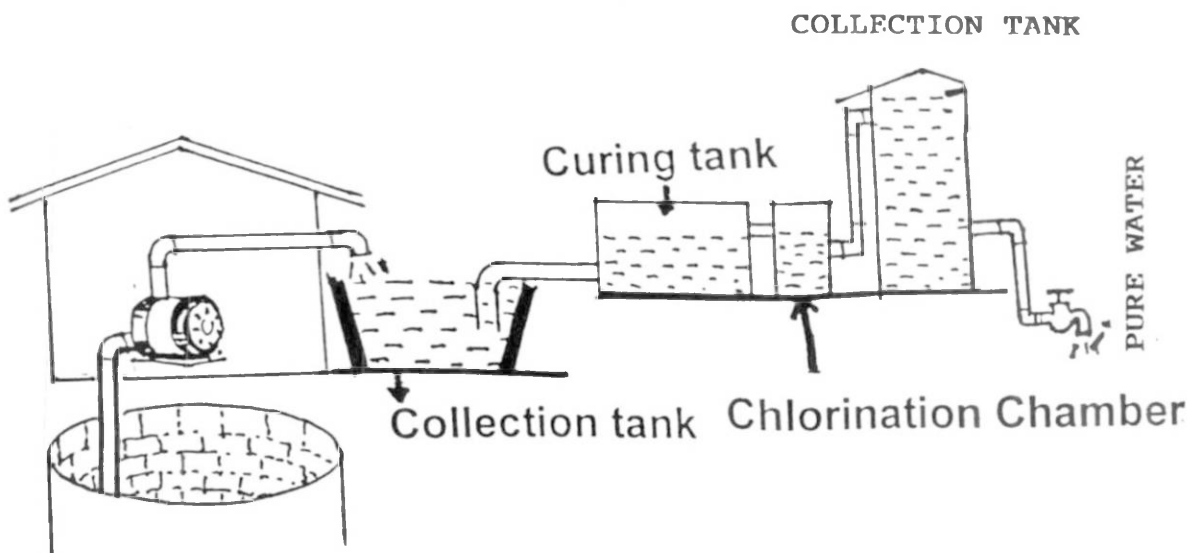
Topic: Good Health

Major Idea: Production of drinking water in the city

Activity: Field trip to study the water supply of safe drinking water in towns.

Description: The teacher takes the students on a field trip to water-works department and explains the following, Water is first collected from a pond or a river and then pumped to a big tub. Water from the tub is pumped to a chlorination chamber where all bacteria are killed. The water is then pumped to a filtering unit before it is stored in a collection chamber. Thus the last chamber provides safe drinking water.

Expected Competencies: 1, 2, 7, 9



School: Government Lower Primary School, Marase P.O., Mysore
District

Name of the Teacher: Smt. Leelavathi

Topic: Good health

Major Idea: Keeping the school compound clean and developing
bio-manure from the waste.

Activity: Students collect the leaf and other organic waste
in the school compound and convert it into biomanure.

Description: The school compound is full of trees and the
leaves shed by the trees cause a problem for the cleanliness
of the school. To overcome this problem, teacher asks the
pupils to dig a pit in the corner of the school compound.
The leaves from the school compound are collected and put in
this pit to degrade. Water is poured over these leaves
periodically. After a few weeks the material in the pit is
decomposed and is ready for use. This manure is used as
fertilizer for other plants in the school compound.

The students are able to understand that waste
material in the school compound can be converted into useful
material.

Expected Competencies: 1, 2, 6, 7

School: Lower Primary School (PWD Camp), Manvi, Raichur
District

Name of the Teacher: Smt. Mahadevi

Topic: Good Health

Major Idea: Re-enforcement of healthy habits

Activity: Teacher provides pictures of some healthy practices like brushing, combing, bathing, clothing, etc.

Description: Students are asked to write about the advantages of these activities and teacher highlights their importance. Teacher also gives a story/poem describing healthy habits and asks students to collect relevant pictures and paste them by the side of the write-up.

Expected Competencies: 2, 7

Good Habits:



a. Brushing



b. Bathing



c. Cleaning of nails

School: Mandal Panchayat Elementary School, Indiranagar,
Vijayanagar District

Teacher: M.L.T. Sundari

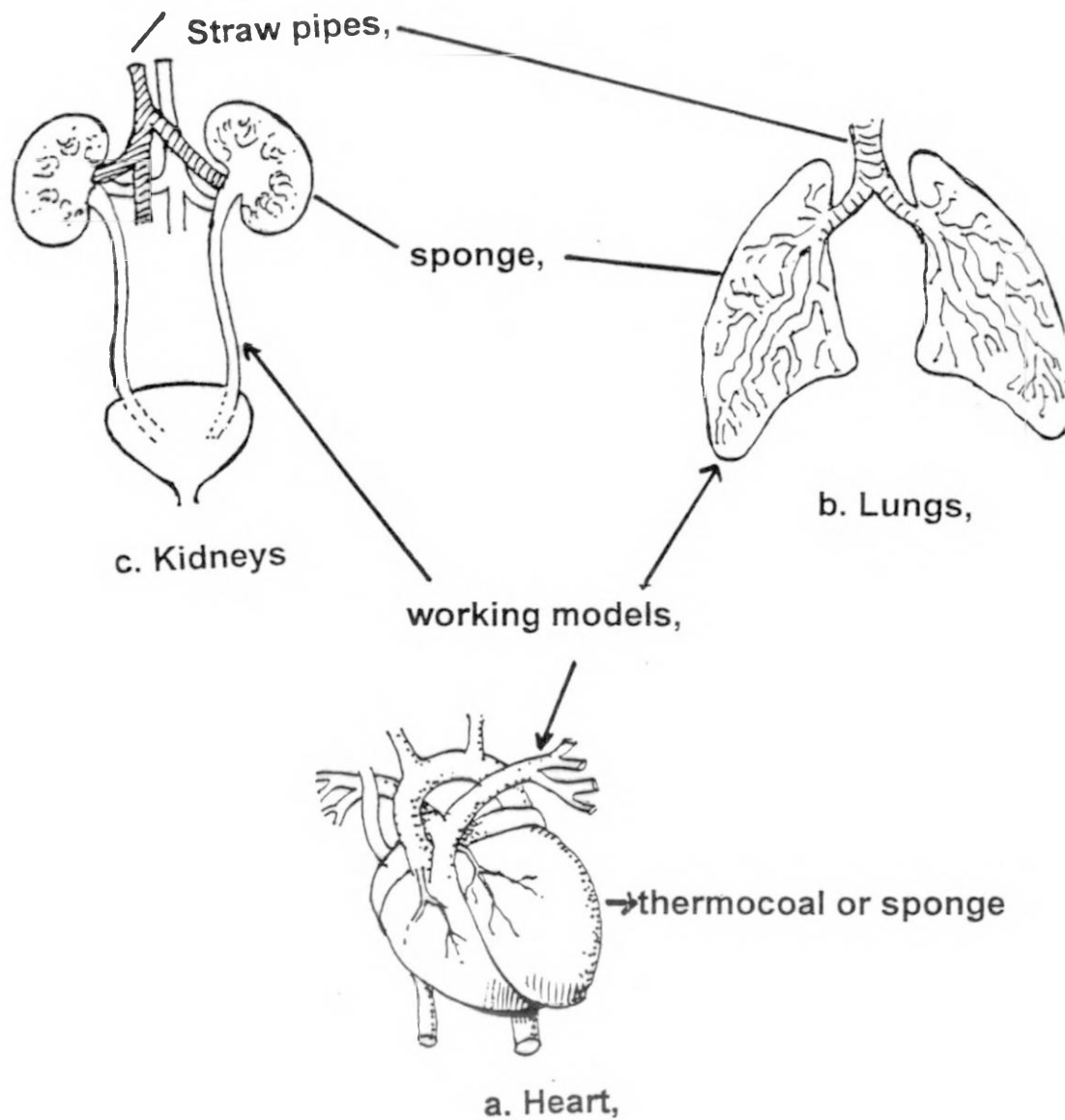
Topic: Good Health

Major Idea: Heart, lungs and kidneys

Activity: Fabrication of models of heart, lung and kidneys

Description: The teacher cuts thermocoal sheet in the shape of the parts of the human organs drawn on the board. The students collect the straw pipes empty glucose bottles and help the teacher in fabricating the working models of human organs.

Expected Competency: 7



Human body and internal parts

School: Abhyudaya Primary School, Jonnada, Vijayanagaram
District

Teacher: G. Satya Sai Shankar

Topic: Good Health

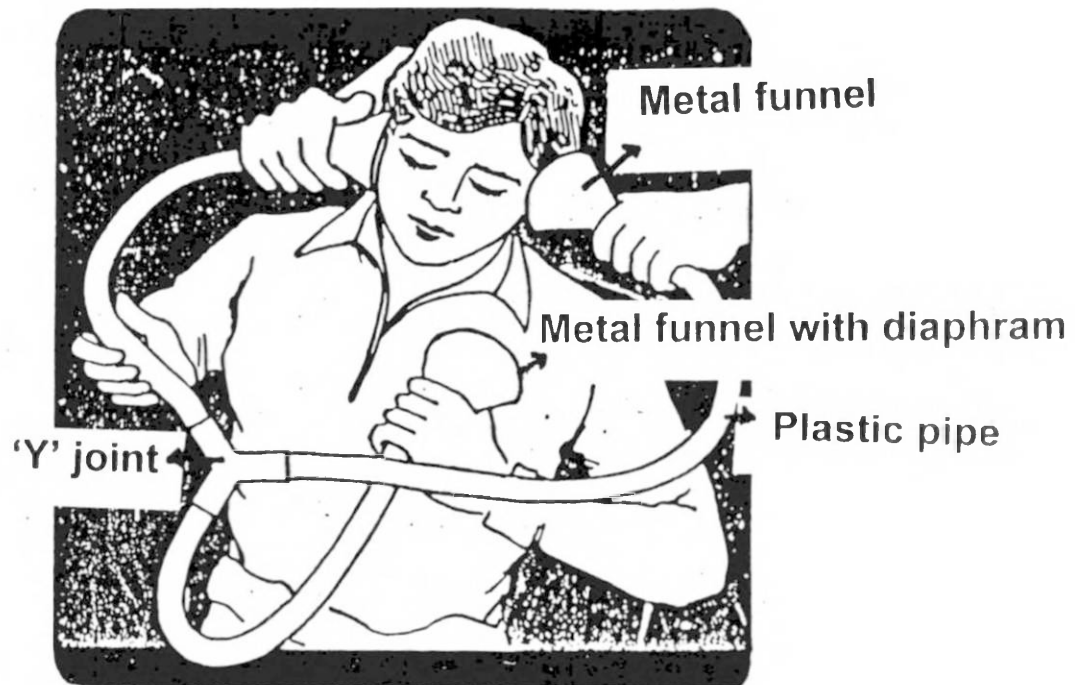
Major Idea: Heart beat

Activity: Fabrication of an instrument for measuring heart
beat

Description: Teacher brings T and Y shaped water joints from sanitary wares shop and three plastic tubes of length 50 cm each. These tubes are fitted in the joints as shown in the figure. Teacher also brings three funnels and fits them onto these joints.

Teacher calls a student and holds two funnels near his ears. The student holds the third funnel on his chest, close to his heart. Student hears the heart-beat and he is asked to count the number of heart beats per minute. The student is then asked to run and come back. His heart beat is measured once again. The rate of heart beat now would be more. The teacher explains that when the person exerts he needs more energy so more of oxygen and this is obtained by breathing faster.

Expected Competency: 7



Stethoscope working model

School: Panchayat Union School, Kattu Vannacur, Villupuram District.

Name of the Teacher: C. Sakila

Topic: Good Health

Major Idea: Different type of noise pollution

Activity: Students were taken to bus stand/industrial establishments and to railway station and made to hear the noise.

Description: Teacher asked students to observe noise level in the class room. Then the students were taken to nearby weekly market and were asked to hear the noise. Students said that they were not in a position to hear clearly. Then the students heard the noise in railway station. They observed that the noise level from the steam engine is higher than that of electric engine. One student told that in railway station the noise is high only during the arrival and departure of train. Next, they were taken to bus stand. They experienced constant noise at higher level. They said that they became sick. Then teacher explains them in bus stand that both noise and air pollution affect us. As a result we got headache and uneasiness. The students observed in factories some workers became deaf. The teacher explained to the children, that our human ear has capacity to hear sound upto some definite level. If the level goes beyond this then they may become deaf.

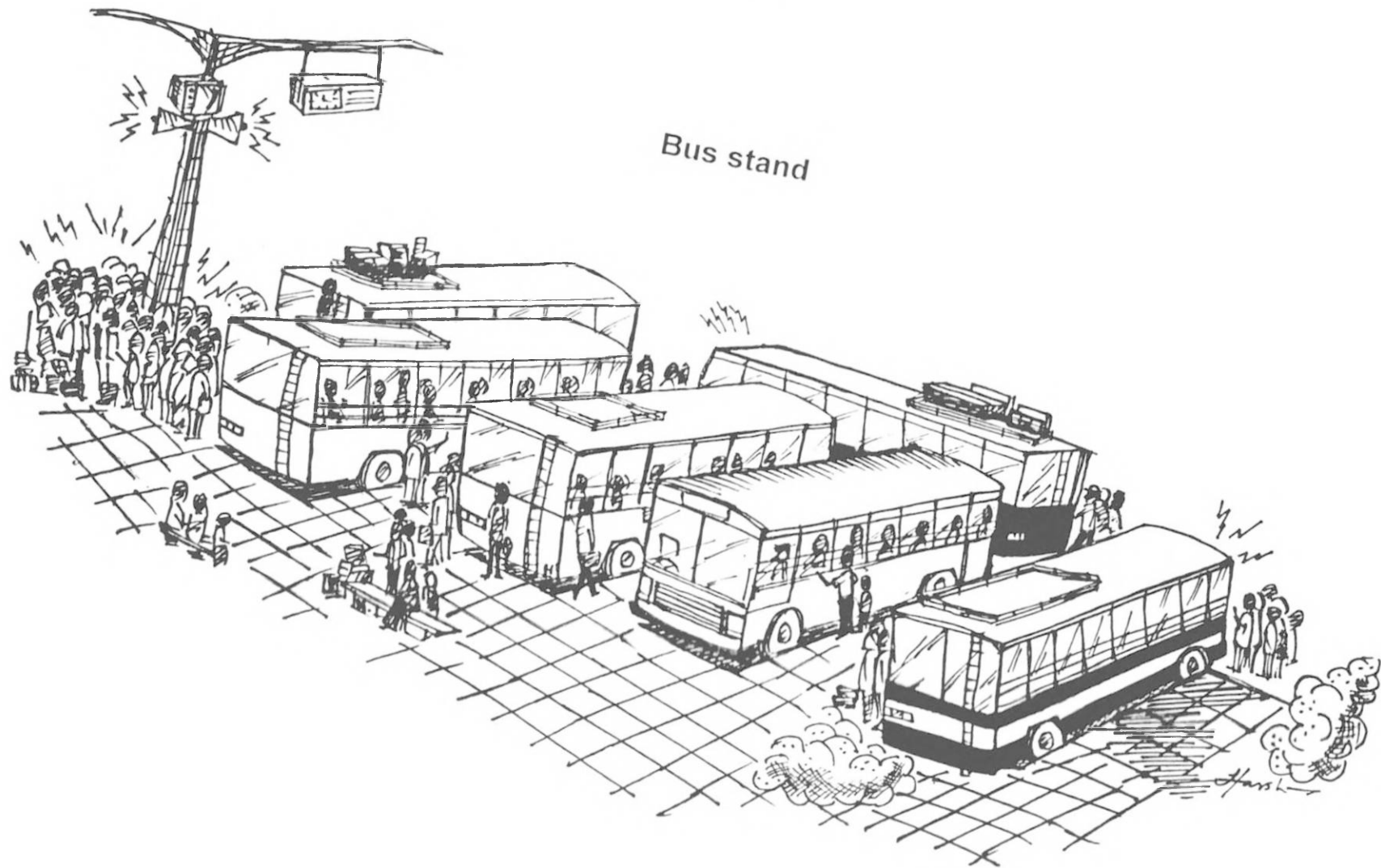
Expected Competencies: 2, 7



Market place



Railway station



School: Panchayat Union Elementary School, Moorar,
Villuparam District

Name of the Teacher: S. Fatimabeebe

Topic: Good Health

Major Idea: Explaining different types of pollution

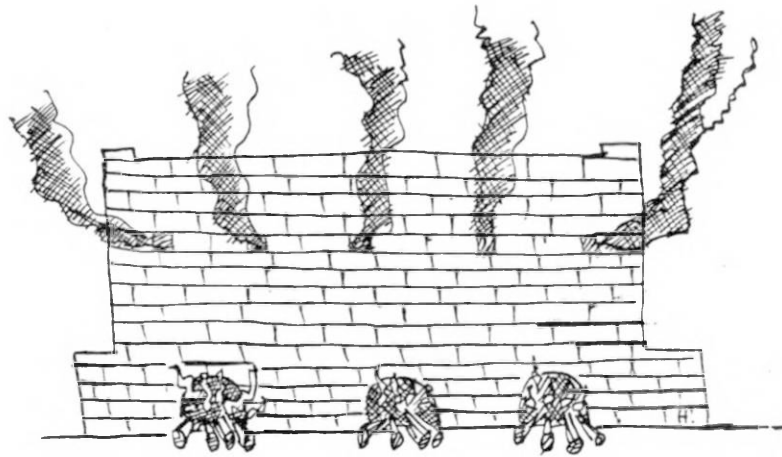
Activity: Field-trip to demonstrate pollution in the
surroundings.

Description: Students were taken to the nearby brick clin factory and they observed smoke. They were asked to stand near the brick-clin. After some seconds students could not withstand the smoke. They were unable to breath properly. They learnt that if smoke is more, it is difficult to breathe and causes symptoms like eye irritation and suffocation.

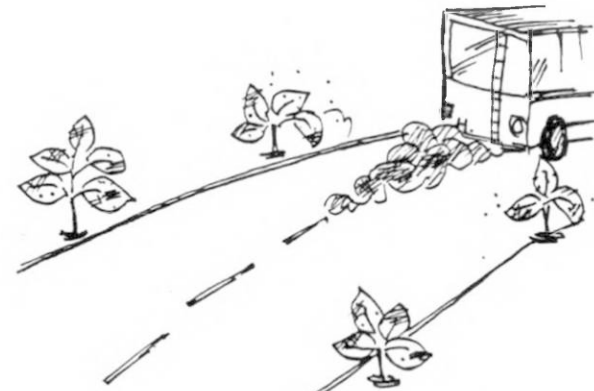
Students were asked to stand besides a flour mill. After some time students started sneezing. The teacher explained to the children that the soot particles entering their nostrils causes sneezing. He also explained that if it continues for some years then it will lead to diseases like asthma and bronchitis.

The students were asked to observe the places by the side of the road. They saw that some plants and trees were deposited with dust. The students observed such trees were not healthy. Then teacher explained to the students air pollution affects both human beings as well as plants.

Expected Competencies: 1, 7



Brick-kiln,



Vehicles



Flour Mill

Air Pollution

Spraying of chemicals



School: Mandal Panchayat Elementary School, Nellimarle Junction, Vijayanagaram District.

Teacher: A. Padmalatha

Topic: Living Things

Major Idea: Resources of the earth

Activity: Playway method of collecting from a nearby surroundings different types of vegetables, plants, etc. and classify them.

Description: Students are asked to collect different types of roots, fruits, bones, flower and leaves, and bring them to the classroom. They are classified under living resources and non-living resources. The teacher also highlights that our food items include leaves, fruits, roots, stem and so on.

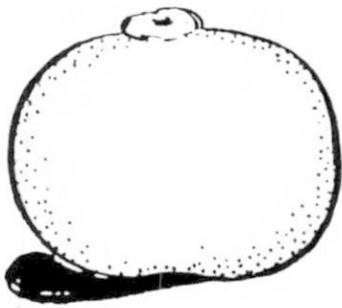
Expected Competencies: 7, 8, 9, 10



Rice



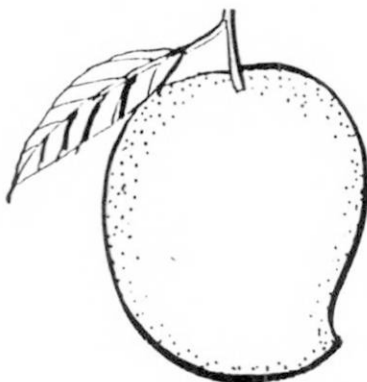
Wheat



Orange



Apple



Mango



Guava

‘ Collection of Different types of Edible Fruits and Seeds’

School: Mandal Panchayat Elementary School, Indiranagar,
Vijayanagaram District

Teacher: P. Sujatha

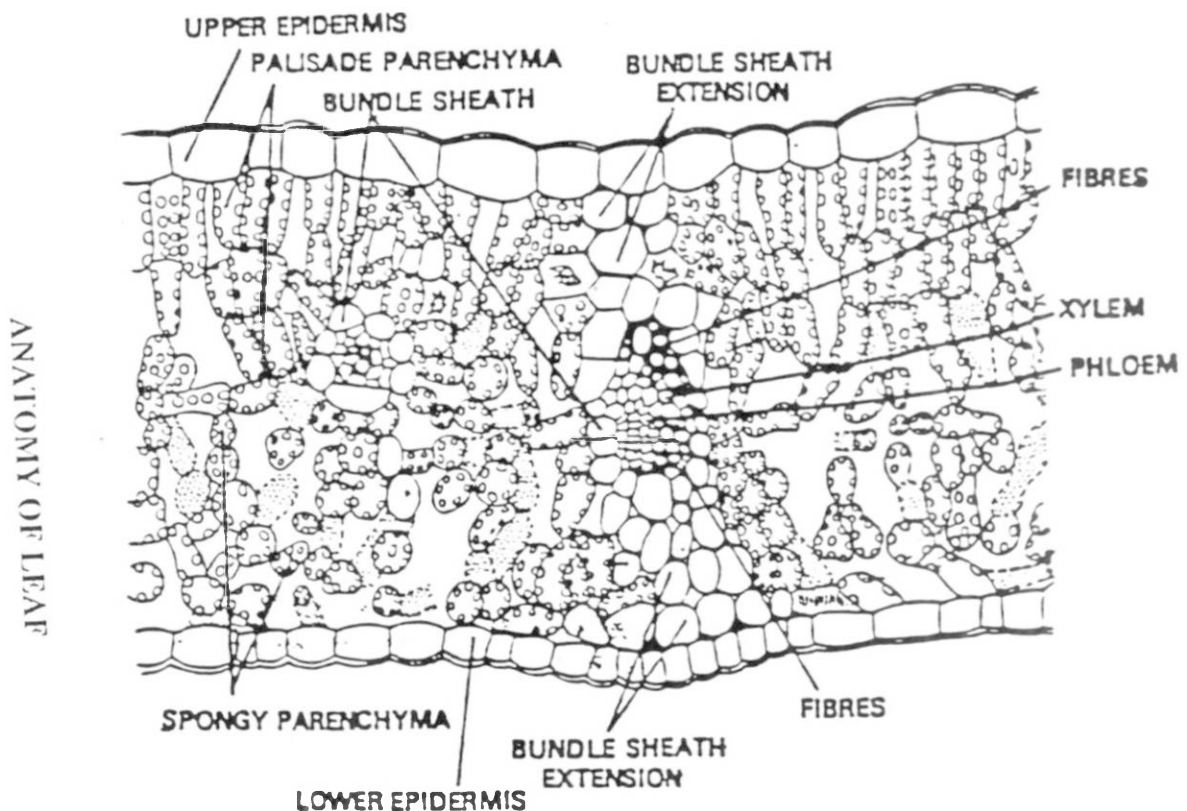
Topic: Living Things

Major Idea: Anatomy of a leaf

Activity: A thermocoal sheet is cut into an anatomical model
of a leaf.

Description: Teacher cuts the thermocoal sheet according to
the anatomical diagram of a leaf. It was cut in a transverse
section to show various tissues as shown in the diagram.

Expected Competency: 8



School: Mandal Panchayat Upper Primary School, Agraharam,
Vijayanagaram District.

Teacher: B. Saraswati

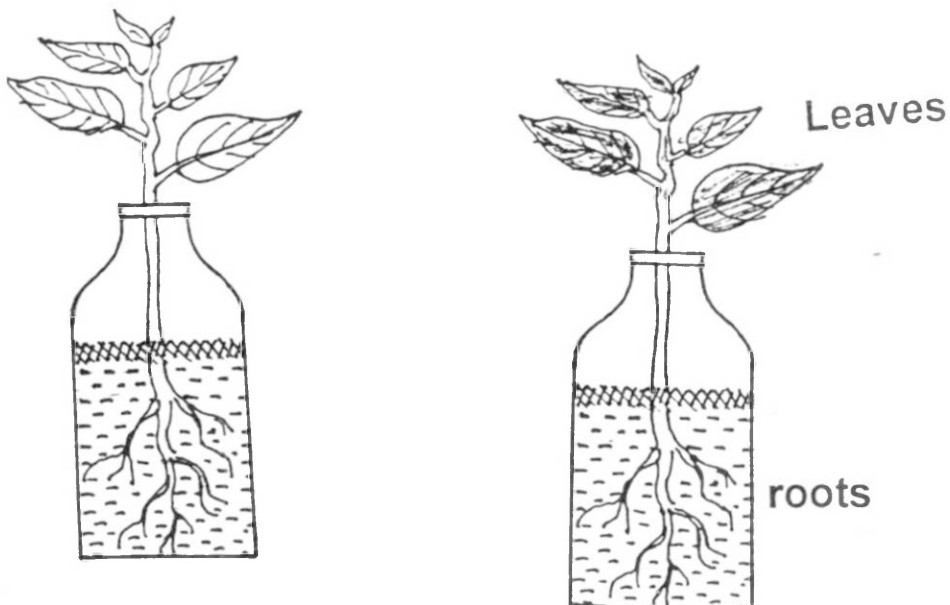
Topic: Living Things

Major Idea: Leaves and their uses for plants

Activity: Demonstration experiments for showing that plants
undergo transpiration

Description: Teacher takes two identical bottles and fills half the bottles with water. He adds 4 or 5 drops of oil in both the bottles. Insert a plant with 5-6 leaves in one bottle. In another bottle insert a similar plant with leaves coated with greece. Students observe the plants in the two bottles for two to three days and record the observations in a tabular column.

Expected Competencies: 4, 6, 8



School: Abhyudaya Primary School, Jonnada, Vizianagaram
District

Teacher: Ramakrishna Naidu

Topic: Living Things

Major Idea: Plants around us

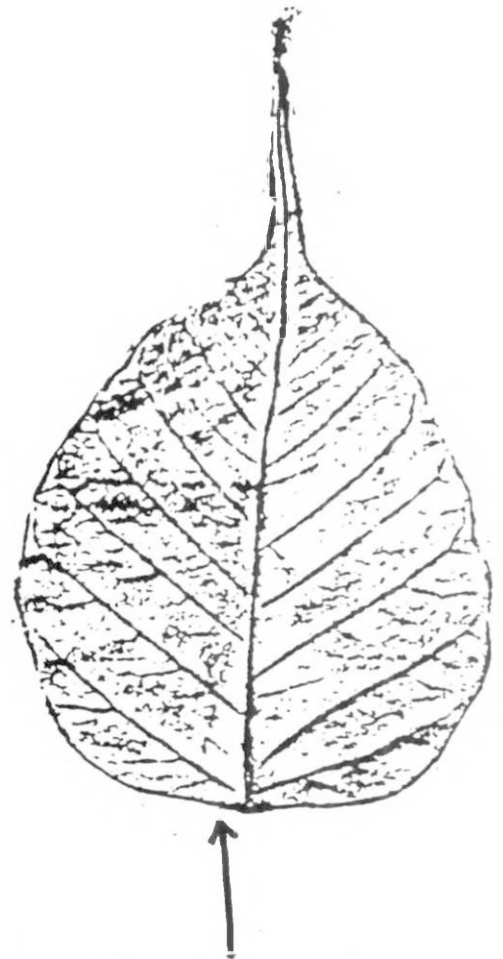
Activity: Field work to collect different kinds of leaves from trees near the school and to take impressions of these leaves.

Description: Different kinds of leaves are collected by the students. Their impressions are made by putting them under the white paper and rubbing with the pencil. Children enjoy this activity. Teacher explains to them about different shapes and shows them more leaves.

Expected Competency: 8



LEAF IMPRESSIONS



(Ficus leaf) Impression with wax crayon

School: Little Flower Primary School, China Salem,
Villupuram District.

Name of the Teacher: K. Kausalya

Topic: Living Things

Major Idea: Classification of plants

Activity: Field trip to collect leaves of different type of
plants and pasting them in a note book.

Description: Students were taken to the field and asked to
collect leaves of different type of plants. They pasted the
leaves in between the note book and kept it for pressing.
After a week the note books were taken for identification
and classification of plants. Students identified short term
plant and long term plants and named it.

Expected Competency: 8



Plant and a Tree

School: Government Lower Primary School, Kenchalagud, Mysore
District

Name of the Teacher: Mr. Nataraj

Topic: Living Things

Major Idea: Different parts of a plant

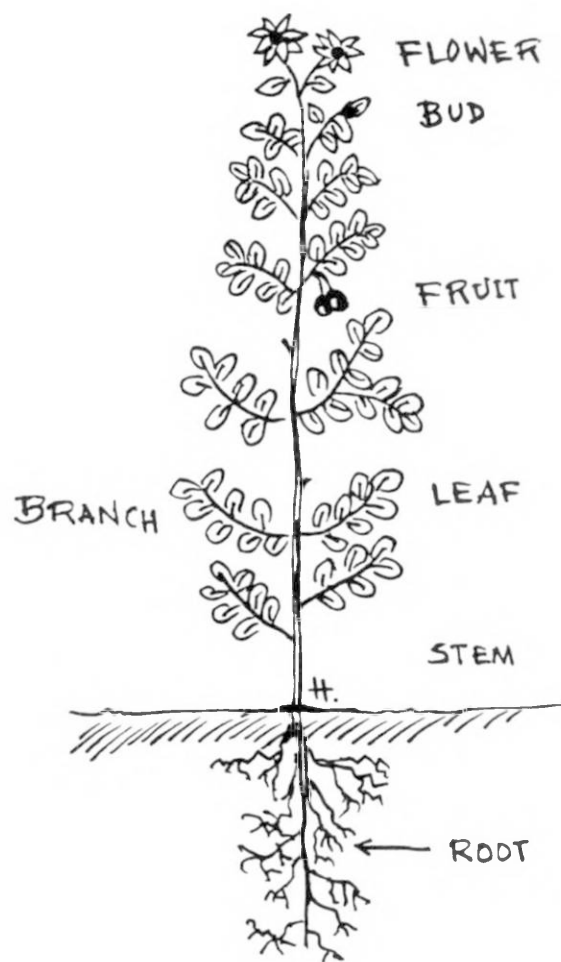
Activity: Field-trip to a farm near the school to understand the plants and its parts.

Description: The teacher takes the students to a village farm near the school where they observe the farmer transplanting the plants from nursery to the fields. Students observe the process carefully to learn that the roots of the plants are important and they should not be damaged. Children also observe the root hairs which absorb the water from the ground. The children are now takes around the field to show other important parts of the plant like leaf, flower, stem, fruit and seed. Students are asked to identify these parts in some of the vegetables grown in the farm.

The children are able to appreciate the uses of various parts of the plant.

Expected Competencies: 3, 4, 8

Plant and its Parts



School: Panchayat Union Elementary School (Girls),
Kallakurichi, Villupuram District.

Name of the Teacher: P. Saroja

Topic: Living Things

Major Idea: Dispersal of seeds through water, air and
animals

Activity: Students were taken to the field and explained how
seeds are dispersed.

Description: Teacher took students to agricultural field with a stream flowing in it. Teacher asked students to list different seeds found nearby. Students listed seeds of different sizes. Then teacher questioned the students as to how seeds are spreading from one place to the other. One boy pointed out that birds carried fruits from tree and eat its fleshy part and leave the seeds behind. Teacher explained that few tiny seeds float in air and these seeds are carried by wind. Teacher also explained that seeds of the plants near the streams were carried away by water.

After reaching the classroom teacher asked the children to form three groups and list the seeds spread through air, water and animals.

Expected Competency: 8

DISPERSAL OF SEEDS



School: Panchayat Union Elementary School, Kallakurichi,
Villupuram District

Name of the Teacher: E. Pandian

Topic: Living Things

Major Idea: Description of fruits, vegetables and greens

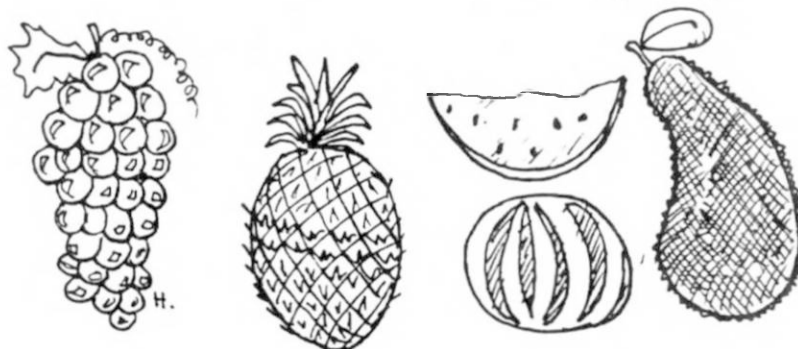
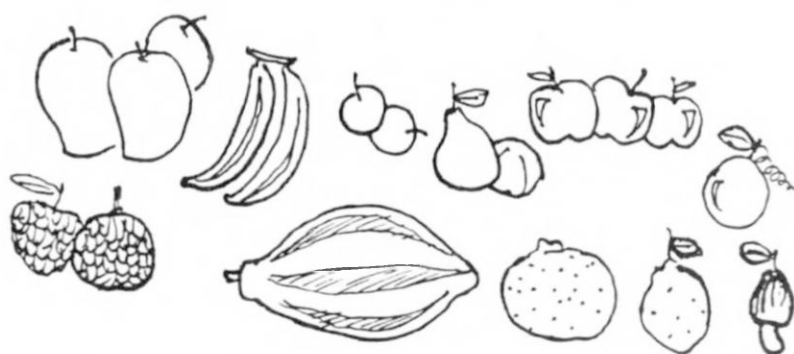
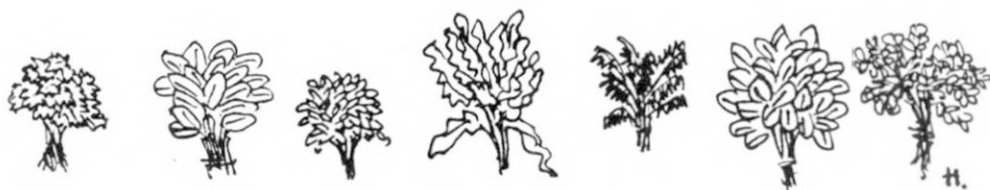
Activity: Play-way method for identification of vitamin
content in different items.

Description: Different types of vegetables, fruits and
greens were collected by the students. The above items were
classified into three groups.

Students were then grouped into above three
categories. Each student will have a item belonging to his
category. He will describe his item with respect to its
vitamin and respective deficiency syndrome. One by one all
students came and explained their items.

Expected Competencies: 1, 7, 8

Different type of Leaves, Vegetables and Fruits



School: Government Lower Primary School, Meenangadi, Wynad District

Teacher: Team work

Topic: Living Things

Major Idea: Vegetable Cultivation

Activity: A field trip to observe methods of cultivation of vegetables.

Description: The method of cultivation of different vegetables are discussed. The children collect the information from parents and from their neighbours and discuss them in the class. These methods are compared with the methods adopted elsewhere. One particular case where the method differs from that in other regions is in the cultivation of tubers like yam. The general practice is to apply manure after the plant has developed from the seedlings. But the farmers in the region add enough manure at the beginning itself and it is claimed that large and better quality tubers are obtained by this method.

Expected Competency: 8

School: Nallimarle Railway Junction School, Vijayanagaram
District

Teacher: N. Sridevi

Topic: Living Things

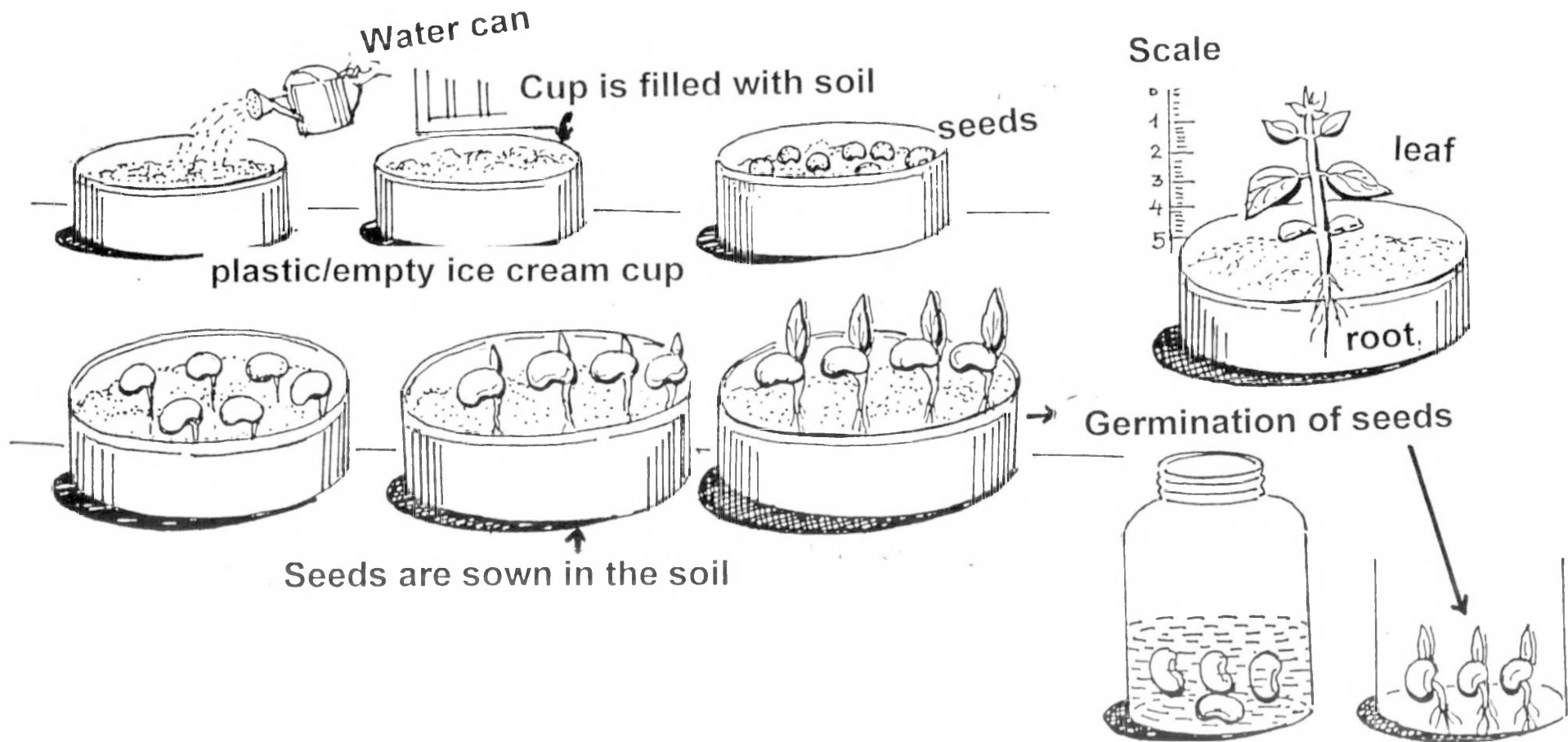
Major Idea: To demonstrate germination of seeds

Activity: Teacher germinates seeds and students record the findings

Description: Teacher takes an empty icecream plastic cups and ask children to fillup with sand and clay. He sows seeds of musterd and soyabean. The plastic cup is placed where there is sufficient light, air and water. Similarly, another cup with soil and seeds is kept in a dark place where there is no insufficient light, air and water. Children observe the growth in the cup after six days and see some green plant shoot up but don't see any growth in the second cup.

Expected Competency: 8

Experiment to show the seed germination



School: Mandal Panchayat Elementary School, Mallicherla,
Vijayanagaram District

Teacher: D. Ram Babu

Topic: Living Things

Major Idea: Living things need air

Activity: Studying the behaviour of the cockroach in the presence and absence of air.

Description: The teacher took live cockroaches one each in two bottles. One bottle had airtight cork and the other cork had a hole. Both the bottles were kept in the classroom. Students were asked to observe what happens to the cockroaches. The airtight bottle cockroach dies after two days. But the cockroach in the other bottle will be alive even after four days. This shows that all living things need air for survival.

Expected Competency: 8



School: Little Flower Primary School, Chinnasalem, Villupuram District.

Name of the Teacher: John Mary

Topic: Living Things

Major Idea: Air is essential for living things

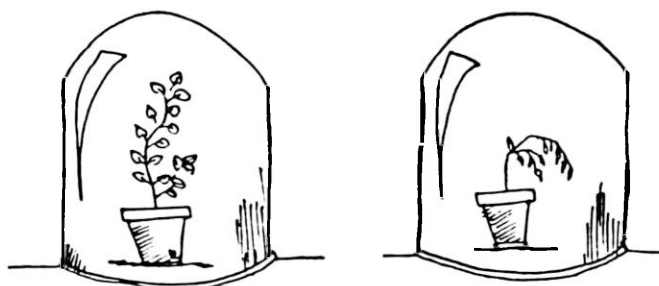
Activity: Demonstration of the behaviour of a frog and a plant in the presence and absence of air.

Description: Students were asked to bring a frog and a pot with a tiny plant to the classroom. Students observed that both are healthy. Thus the teacher asked them to bring a tumbler and used it to cover the frog. After few seconds the frog suffocated. Immediately the tumbler was removed and the frog started moving.

In a similar manner, the plant was covered with a tumbler and after some time the plant become wilted. Then teacher explained to the children that oxygen is essential for living beings.

Expected Competency: 8

Air is required for living



School: Lower Primary School (PWD Camp), Manvi, Raichur
District

Name of the Teacher: Smt. Sharada

Topic: Living Things

Major Idea: Functions of different parts of the body

Activity: Play-way method to study the functions of
different parts of the body.

Description: Teacher prepares cut-outs of the heads and
trunks of a number of animals. Students are asked to match
them.

Similarly students are asked to match heads and legs
of birds.

Afterwards students are supplied with cut-outs of
food the animals and birds eat. Students are asked to match
the food with different animals and birds, and with the
parts of their body used in eating.

Expected Competency: 8

School: Panchayat Union (Hindu) Elementary School,
Sankarapuram, Villupuram District.

Name of the Teacher: A. Indira

Topic: Living Things

Major Idea: Identification of parts of our body and its
functions

Activity: Play-way method to demonstrate different parts of
the body.

Description: Teacher asked students to form two groups and labelled them as head and body. Under body four students were designated one each for eyes, ear, mouth and nose. Hand and legs were grouped under body. Each student was directed to have drawing of their corresponding body part. Students were asked to come forward to tell about their part and their functions.

Then one student was kept in centre and rest were standing in a circle. While teacher called out any one part of the body another student would come forward and touch that part of the student in the centre.

Expected Competency: 7



Matching of heads with trunks & food they eat

School: Government Higher Primary School, K.R. Mill Colony,
Mysore, Mysore District

Name of the Teacher: Smt. Saraswathamma

Topic: Living Things

Major Idea: Sensory organs and their functions

Activity: Play-way method of learning functions of sensory
organs

Description: Teacher describes sensory organs in the human body. to explain their use teacher conducts the following activities.

1. A student is blind folded and asked to describe his experience when he is blind folded and when his eyes are open.

2. The blind folded student is now asked to name object brought near his nose (agarbathi, mango, flower, etc. could be used).

3. The student is now given identical objects like crushed sugar and common salt. He asked to identify these objects by tasting them.

4. The student is now made to listen to the clapping sound from different distances. He is able to distinguish the loud and feeble sound.

5. Two glasses placed before the student - one with warm water and another with cold water. The student is asked to distinguish between them by touching.

Expected Competencies: 7, 8



I CAN SEE WITH
MY EYES



I CAN'T SEE



.... BUT, CAN SMELL
WITH MY NOSE...

Sensory organs



.... CAN HEAR
WITH MY EAR...



.... CAN TASTE
WITH MY TONGUE



... CAN FEEL.

School: Government Lower Primary School, Doddahundi, Mysore
District

Name of the Teacher: Smt. Sathyabhama

Topic: Living Things

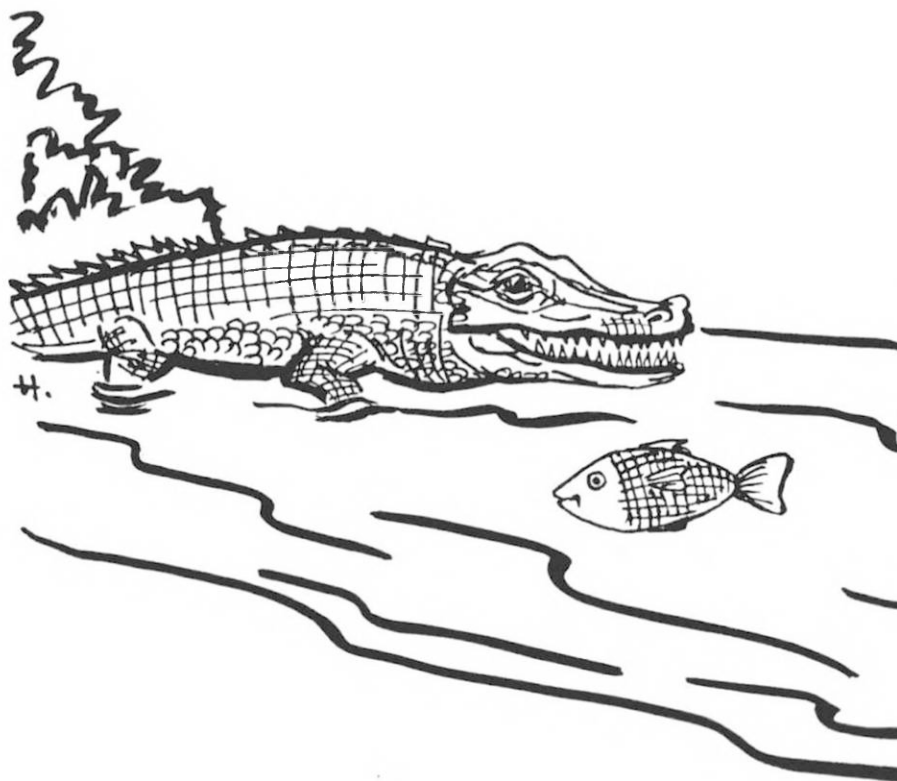
Major Idea: Animals living in water

Activity: Simulated activity - An artificial situation is created in the classroom by drawing a stream and placing animal pictures on it.

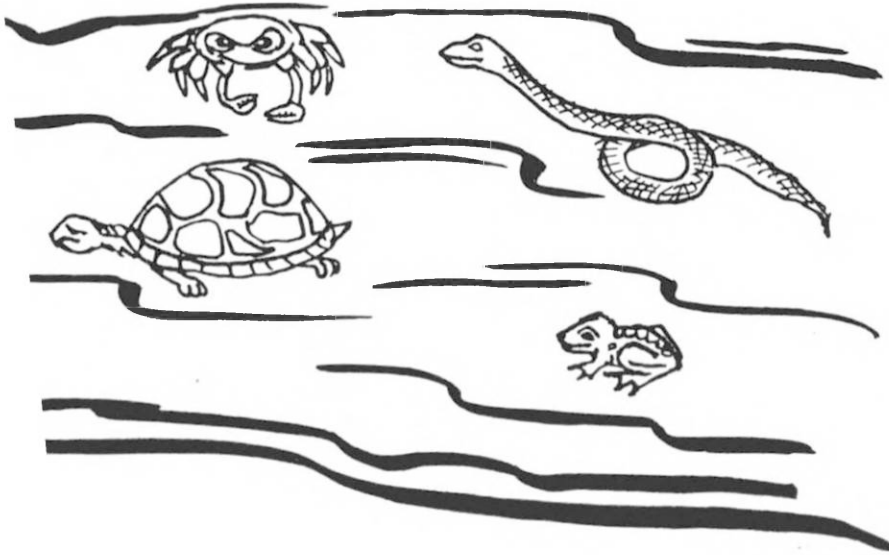
Description: The teacher draws a picture of a stream of water on the floor of the classroom. Water-animals like fish, crocodile, snake, crab, frog, etc. are collected and placed at various places along the stream. The students are able to identify the dangerous animals and select a suitable place for crossing water. Thus students are able to differentiate animals and take suitable precautions while entering in water in real situation.

Students are able to recognise the various animals living in water.

Expected Competencies: 7, 8



Animals in the water



School: Lower Primary School (PWD Camp), Manvi, Raichur
District

Name of the Teacher: Smt. Sharada

Topic: Living Things

Major Idea: Food chain in nature

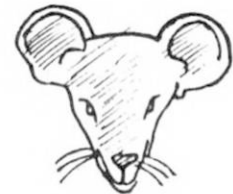
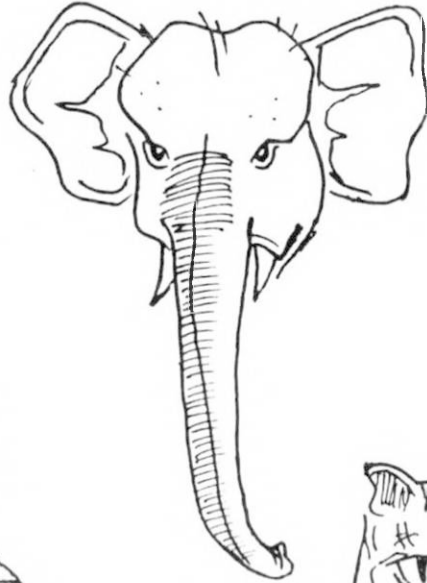
Activity: Play-way method to study food-chain in nature

Description: With the help of students, teacher prepares masks of different animals. Students wear these masks. They stand in a row and in front of each of them teacher writes the food they eat.

Teacher then asks them what happen if one of the animals say tiger is absent. He explains that cattle will increase and they will require more grass. Then he explains the problems arising out of excess or decrease of each animal and how nature balances different food items.

Expected Competencies: 1, 2, 8

Masks of animals



School: Mandal Panchayat Elementary School, Pradeepnagar,
Vijayanagaram District

Teacher: M. Madhavi and Annapurna Devi

Topic: Living Things

Major Idea: Animals and their food habits

Activity: Field trip and explanation using printed charts.

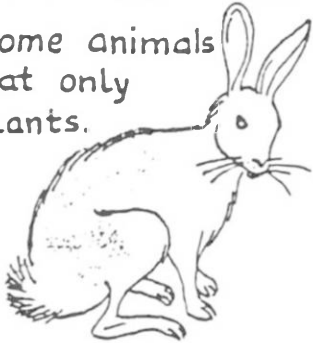
Description: Teacher takes the children to a zoo and shows them different animals. He also shows them many pictures of animals. He explains to them the behaviour and the food habits of the animals.

Expected Competencies: 4, 7, 8

Animals and their Food

Animals eat different types of food.

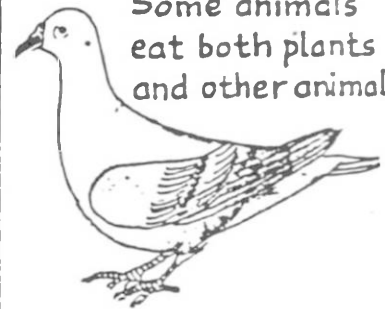
Some animals
eat only
plants.



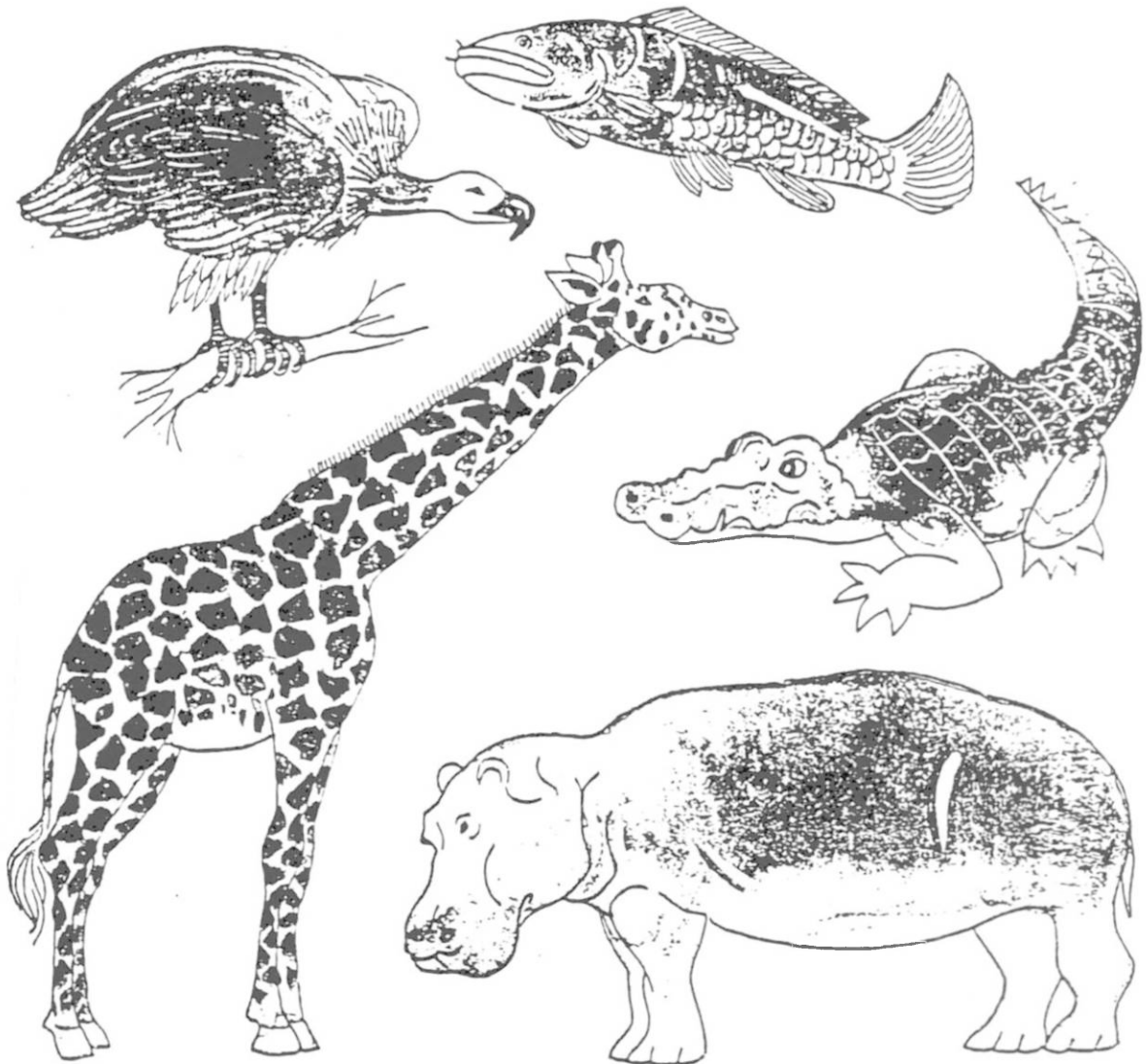
Some animals
eat other
animals.

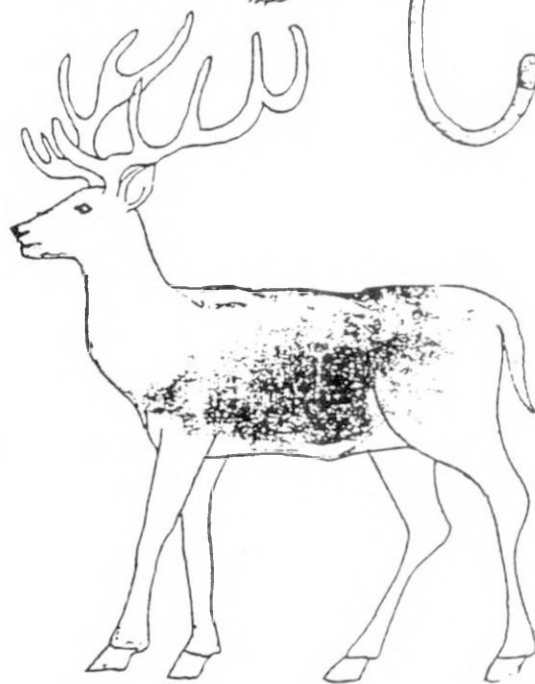
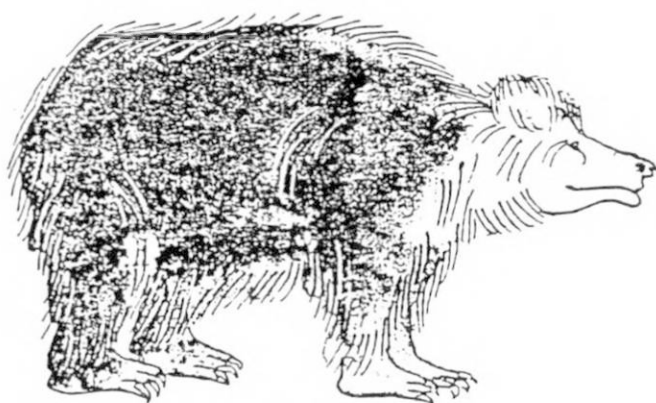
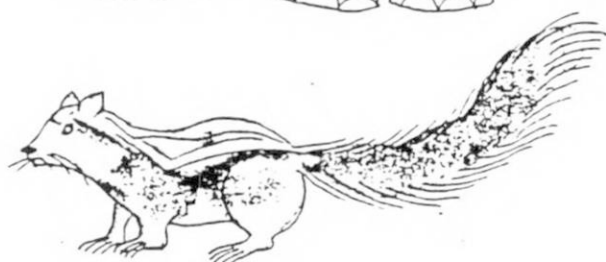
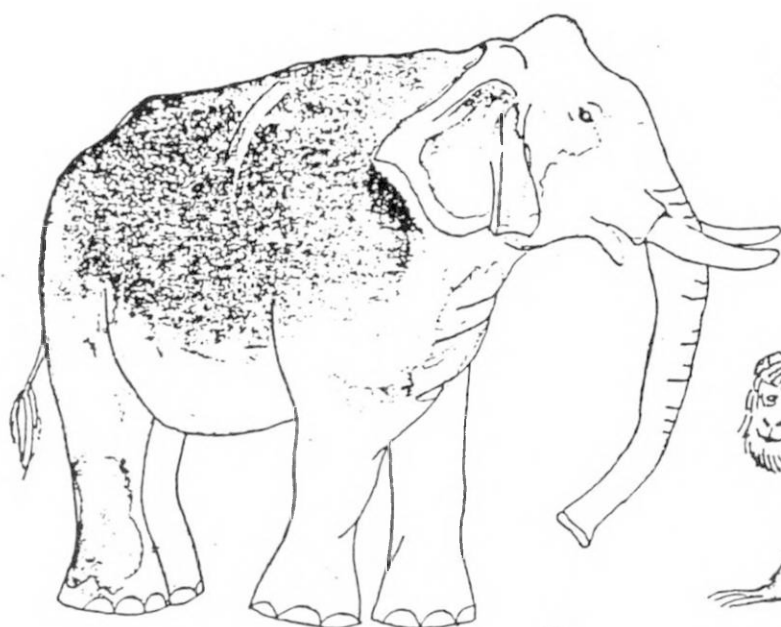


Some animals
eat both plants
and other animals.



Write the names of the following animals in three different groups.





School: Government Higher Primary School, Hallikere Hundi,
Mysore District

Name of the Teacher: Ms. Pushpalatha

Topic: Non-living things

Major Idea: Differences between living and non-living things

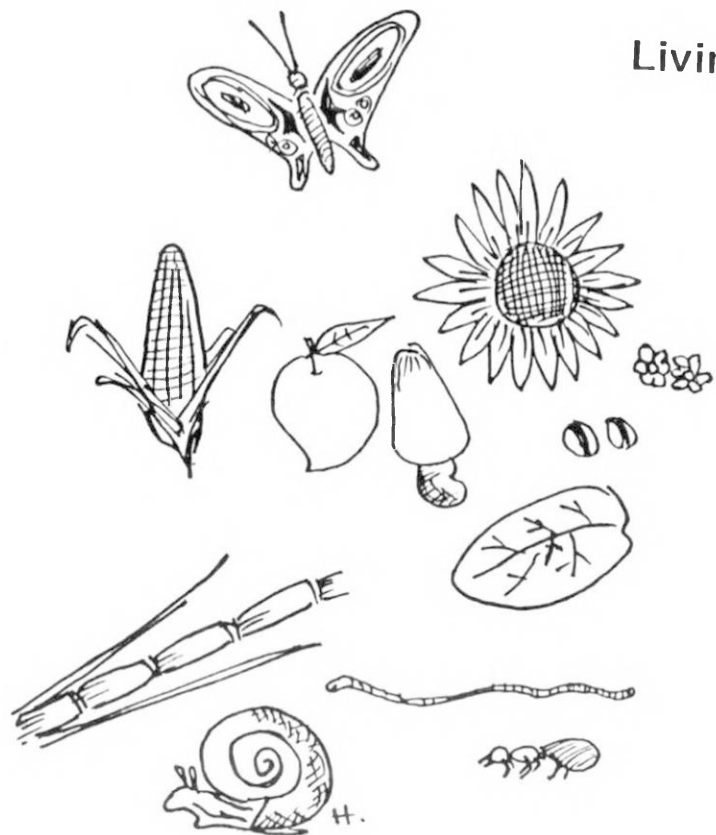
Activity: Collection of several objects and their
classification by play-way method

Description: The teacher takes the students to an
environment walk in the nearby field. She divides them into
groups and asks them to collect small objects nearby.
Students collect items like, stone, clay, brick pieces, tile
piece, seeds, fruits, flowers, bone, butterfly, etc. On
returning to the classroom, students are asked to classify
the objects as living and non-living objects.

The students are able to understand the character-
istics of living things and non-living things.

Expected Competencies: 8, 9

Living and non-living things



School: Nellimarla Railway Station School, Vijayanagaram
District

Teacher: P. Usha Rani

Topic: Non-living Things

Major Idea: Different types of fruits and their uses

Activity: Collection and identification of different fruits

Description: Teacher asks the student to bring fruits and grains from their home. Materials are then classified into fruits, cereals, pulses and so on. The teacher also explains the uses of these materials in preparing jam, pickle and other food items.

Expected Competencies: 7, 8, 9

School: Panchayat Union Primary School, Morar Bad,
Kallakurichi, Villupuram District

Name of the Teacher: A. Usha Rani

Topic: Non-living things

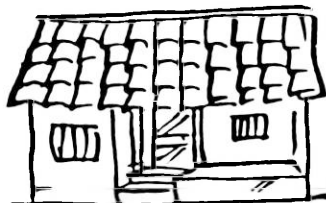
Major Idea: Models of different types of houses

Activity: With help of local materials children construct models of different types of houses.

Description: Students were asked to bring palm leaves, match boxes, gum, cardboard, cigar paper, thermocal paper, etc. Teacher asked the students to list different types of houses. Students listed thatched house, tiled house, and terrace house. Secondly teacher asked them, how to make these houses. The whole class was divided into three groups and models of three types of houses were assembled using low cost materials. At the end teacher asked the students advantages and disadvantages of different type of houses and wrote them on the blackboard.

Expected Competencies: 2, 11

Different types of Houses



School: Government Lower Primary School, Meenangadi, Wynad
District

Teacher: Team work

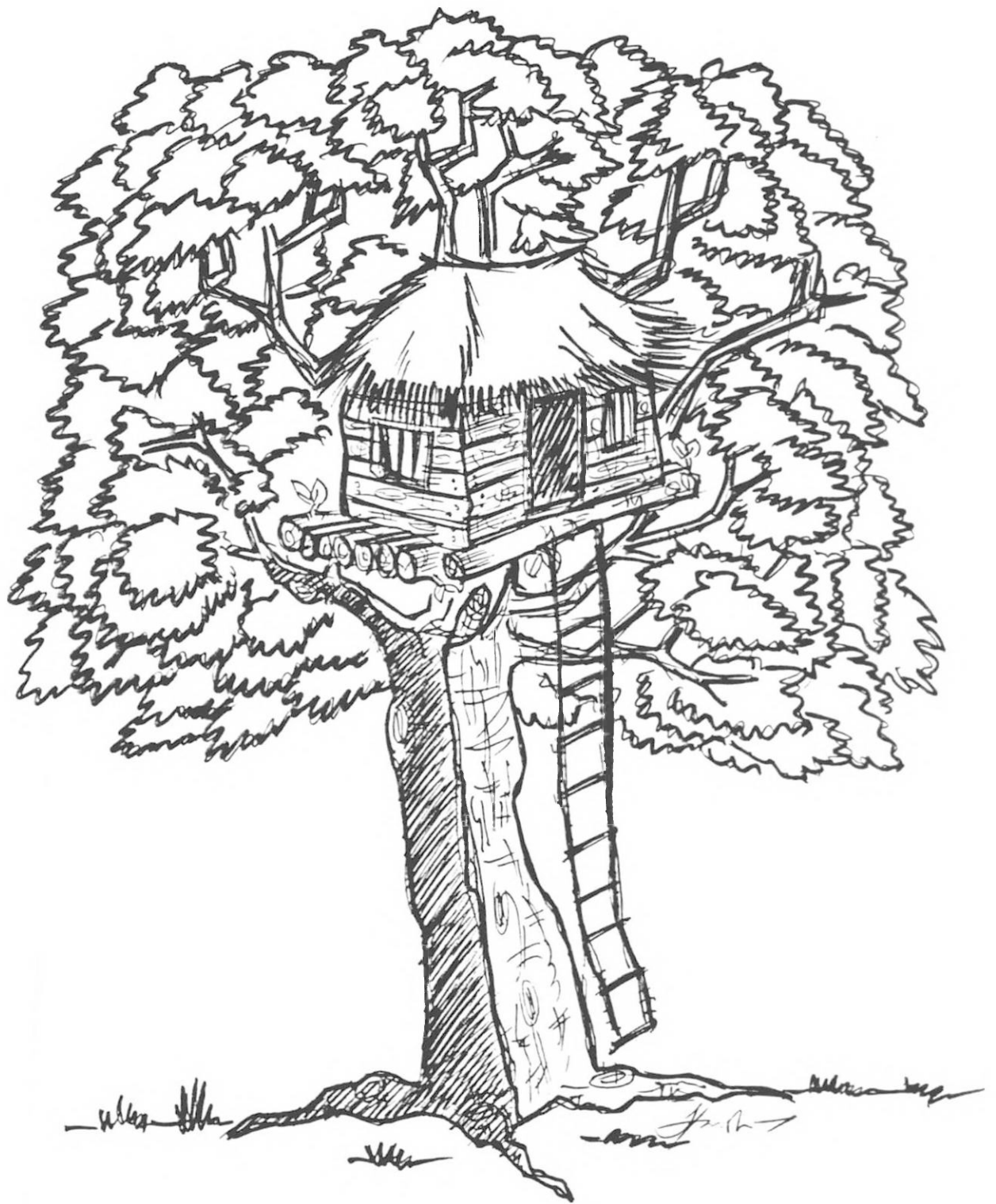
Topic: Non-living Things

Major Idea: Types of houses

Activity: Field trip to see houses in the forest region.

Description: The houses used by tribal people of the region (Wynad) were observed in a field trip. The tree-top houses used by some farmers in the forest region need special mention. Houses are constructed on a tall tree for watching the cultivated fields. The purpose of these shelters is usually to keep a vigil on the crops. The tree-top houses are constructed using bamboos and have a thatched roof. Necessary provision is made for entering the house through ladders.

Expected Competencies: 1, 4



School: Mandal Panchayat Elementary School, Mopada,
Vizianagaram District

Teacher: B.P. Daniel

Topic: Non-living Things

Major Idea: Water used to rotate turbines

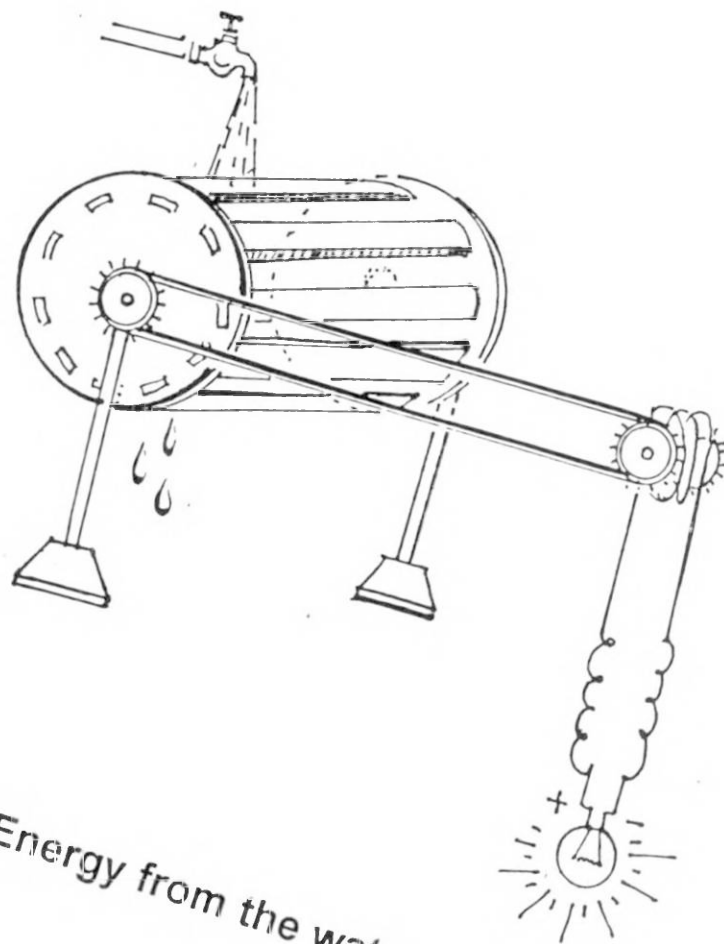
Activity: Fabrication of the working model to demonstrate
how water can work.

Description: Teacher takes a thermocol cylinder and pierces it along its axes, with a metal wire. He inserts thin metal foils, on the surface of the thermocol cylinder.

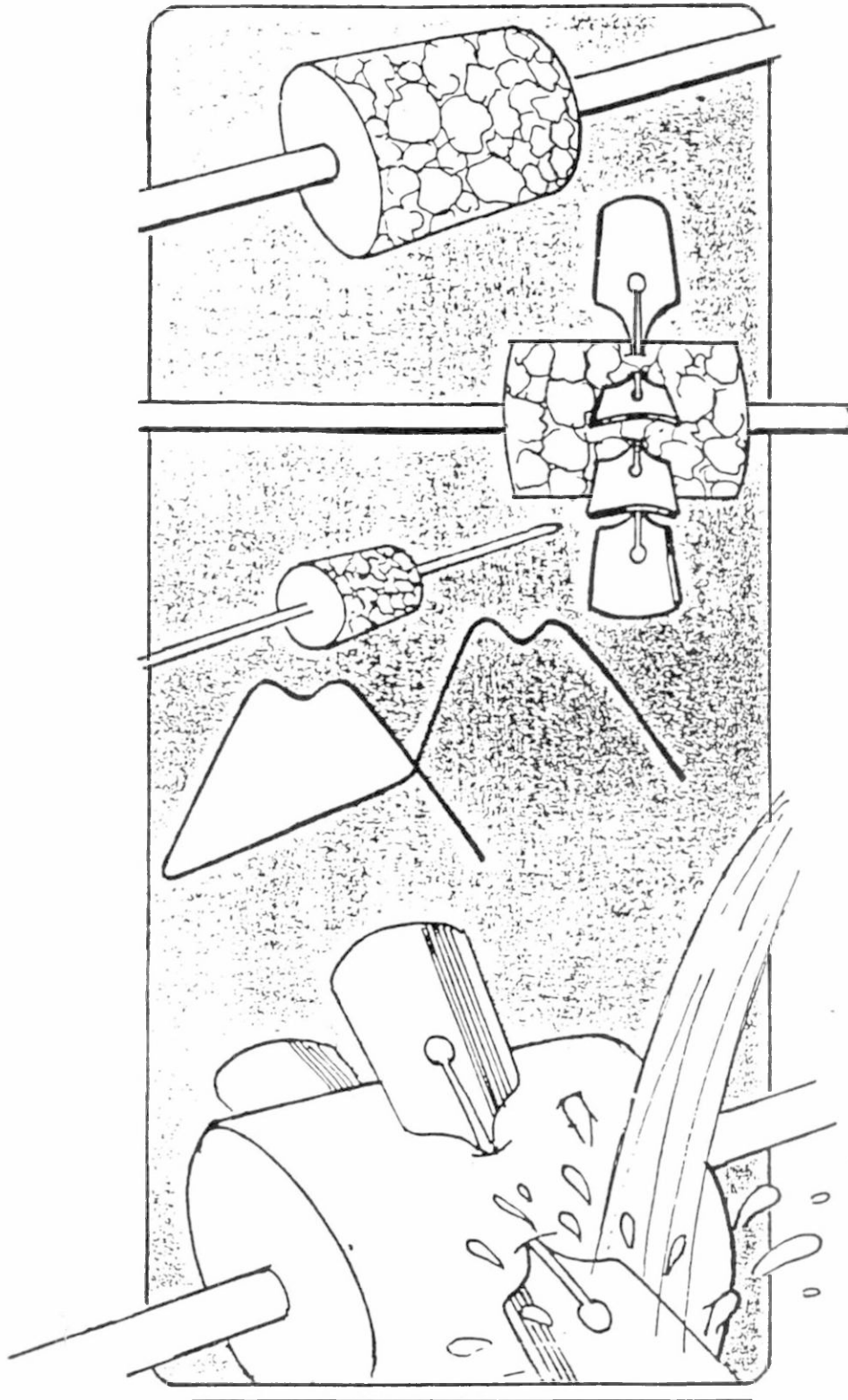
Alternatively, the teacher pierces a cylinder with a knitting needle. He fixes six writing nibs, radially around the coil at equal distance.

He takes discarded coat hanger and models it in the shape shown in the diagram. Next he places the knitting needle in the stand. Next he takes a tin container and make a hole near its bottom and places it in such a position that the can is filled with water and water coming out of the hole falls directly on the blades or the nibs attached to the rotating cylinder.

Expected Competencies: 1, 4, 6, 9



Energy from the water



Turbine,

School: Mandal Panchayat Elementary School, Katavedhi,
Vijayanagaram District

Teacher: K. Srinivasan

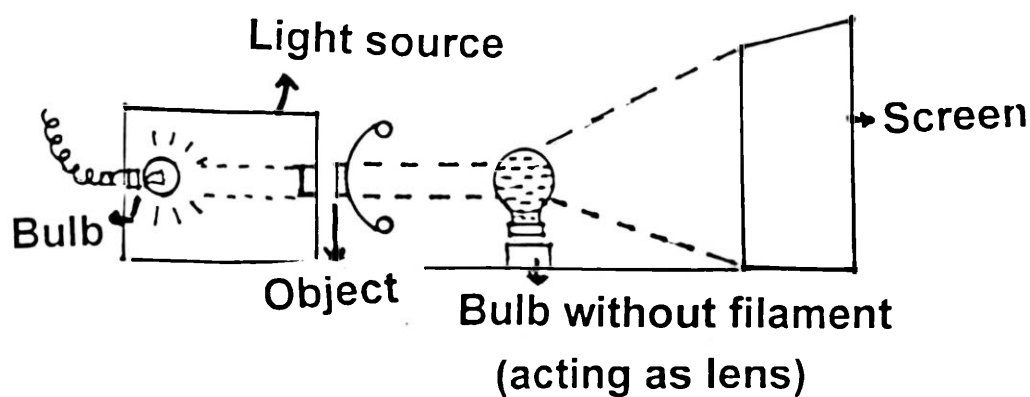
Topic: Non-living things

Major Idea: Optical device to obtain a magnified image

Activity: Fabrication of Projector Model

Description: The teacher takes a cardboard box and fixes an electrical bulb in it. Light coming from this bulb falls on a used bulb which acts as a converging lens. A wall serves as a screen and the arrangements are made as shown in the figure. A magnified image of the object is seen on the screen.

Expected Competency: 9



'Working Model of a Projector'

School: Mandal Panchayat Elementary School, Nallimarle
Junction, Vijayanagaram District

Teacher: P. Usharani

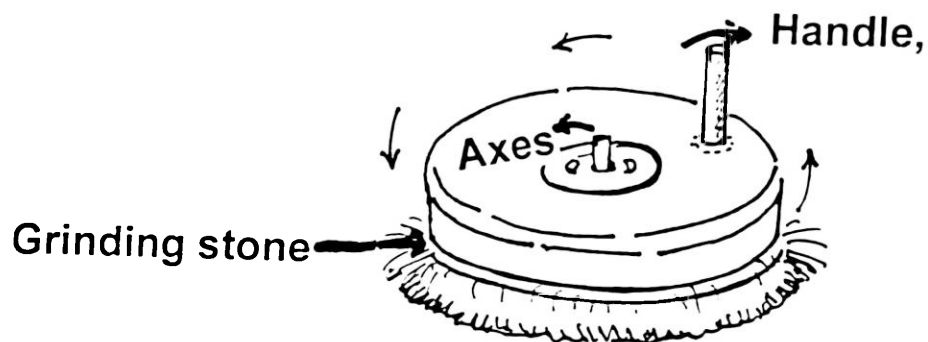
Topic: Earth and the Sky

Major Idea: How the soil is formed from the rocks

Activity: An experimental observation of the soil formation.

Description: The teacher explains that grinding stone has two parts. The bottom is stable and it does not move and the upper one can be turned. When grains are poured in the upper hole, flour is produced and comes around the the grinding stone. Teacher explains that two rocks rubbed against each other rock powder is produced. This powder contributes in the formation of soil.

Expected Competency: 10



Formation of Soil

School: Mandal Panchayat Elementary School, Indiranagar,
Vijayanagaram District.

Teacher: P. Sujatha

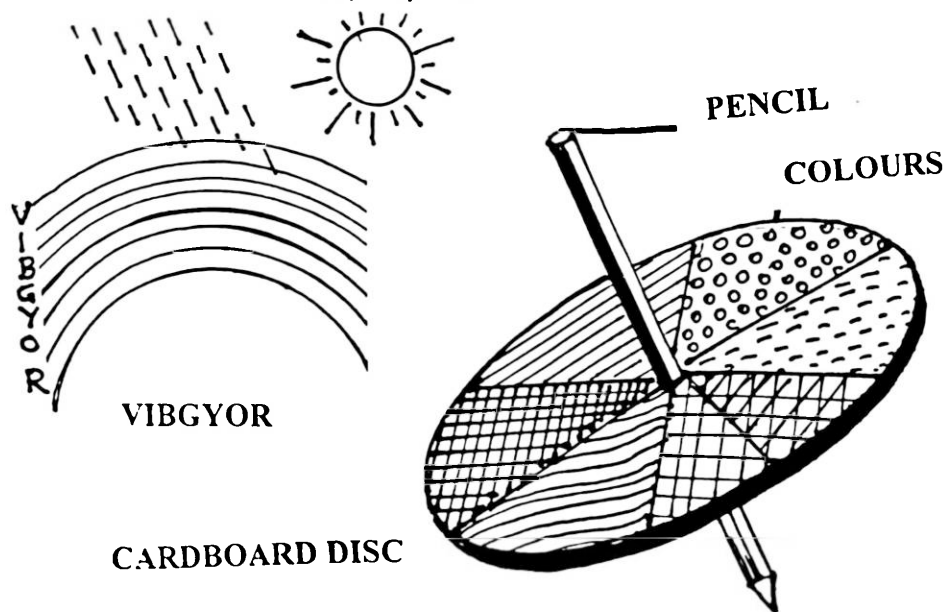
Topic: Phenomenon of the Earth and the Sky

Major Idea: Sunlight in a mixture of seven colours

Activity: Play-way method for studying the rainbow

Description: Teacher takes the students to a spot from where rainbow can be observed. With the help of the students he identifies different colours in the rainbow and also the relative position of the Sun. On returning to the classroom he draws a diagram on the blackboard and identifies the different colours seen in the rainbow. He tries to explain that the rainbow is formed when the sunlight passes through the water drops and that the sunlight is broken into many colours.

Expected Competencies: 1, 9, 10



School: Government Higher Primary School, Munnurwadi, Raichur
District

Name of the Teacher: Smt. Rukmini

Topic: Earth and the Sky

Major Idea: Different seasons of the year

Activity: Play-way method to learn about seasons

Description: Teacher calls three students one to play the role of sun, second to play the role of earth, and third to play the role of moon. The revolution and rotation of the moon and the earth are simultaneously demonstrated by the students. This helps in explaining formation of day and night, and of the seasons.

Four charts are tied at right angle to one another to the student representing the earth. The charts describe the dress habits during the respective seasons, such as white clothes of summer, woolen clothes for winter, rain-coat for monsoon and usual dresses for spring.

Expected Competencies: 1, 10



Day and Night

School: Abhudaya Primary School, Jonnada, Vijayanagaram
District

Teacher: E. Rama Rao

Topic: Phenomenon of the Earth and the Sky

Major Idea: Detecting direction of the wind

Activity: Fabrication of wind vane and detecting direction
of the wind

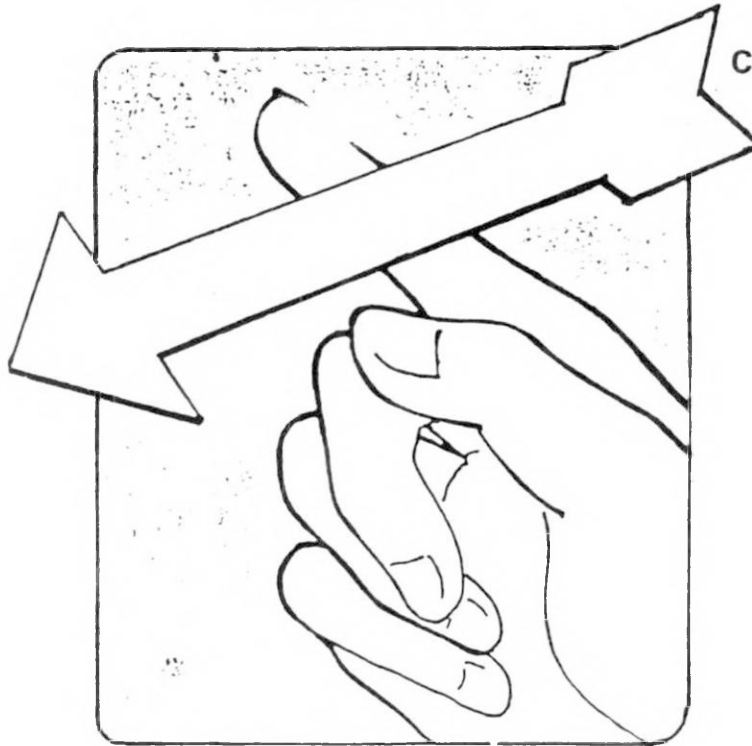
Description: Students cut-out an arrow from the cardboard. They locate its centre of gravity by balancing it on their finger. A long pin is pierced narrowly at this point. The bottom of the pin is then fixed at the top end of a wooden rod. The other end of the rod is fixed vertically to the ground or to some strong support.

This device indicates the direction of the wind by turning itself towards that direction.

Expected Competency: 10

wind vane

cardboard pointer

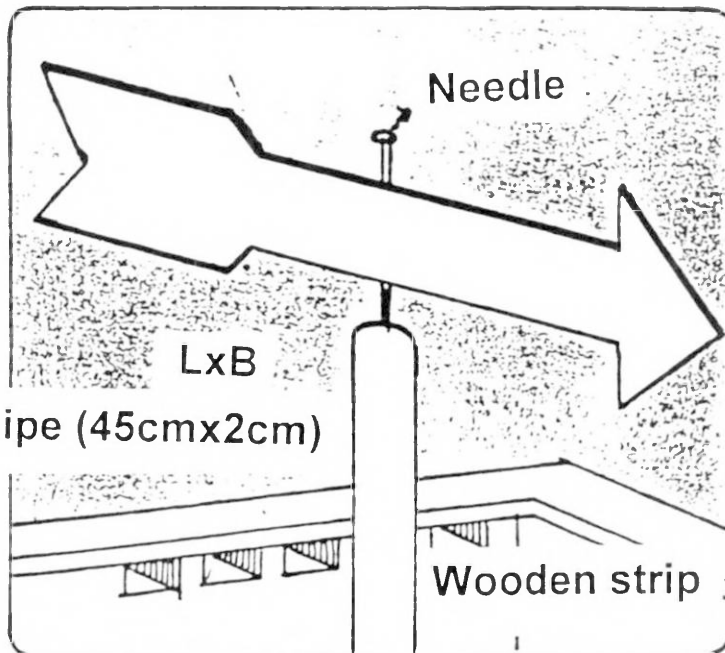


Needle

LxB

Plastic pipe (45cmx2cm)

Wooden strip



Nail

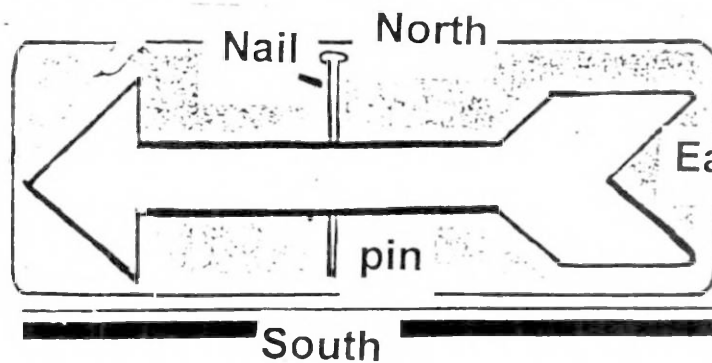
North

West

East

pin

South



School: Mandal Panchayat Elementary School, Pradeepnagar,
Vijayanagaram District

Teacher: Annapurna Devi

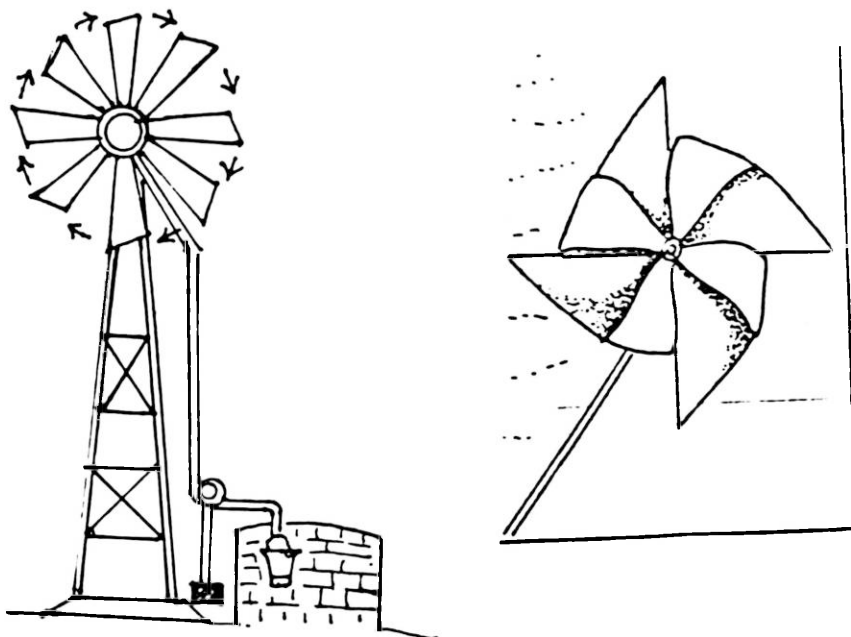
Topic: Earth and the Sky

Major Idea: Wind as a source of energy

Activity: Field trip to study a wind mill

Description: Teacher takes the children to a place where wind mill is situated. She explains that due to the force of the wind the big fan rotates. She explains the similarity of the working of the paper fan made by the children.

Expected Competency: 10



Water is pumped out from the well by using a windmill

School: Abhyudaya Primary School, Jonnadi, Vijayanagaram
District

Teacher: E. Rama Rao

Topic: Earth and the Sky

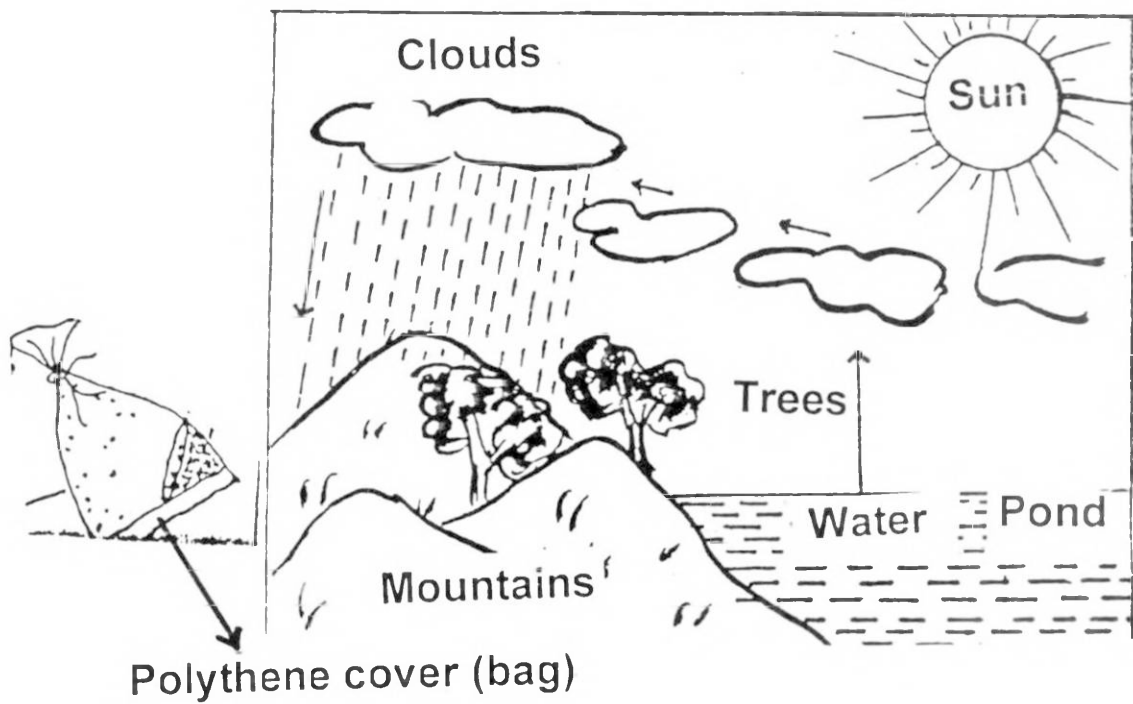
Major Idea: Formation of water cycle

Activity: Boiling water and condensation process.

Description: Teacher takes one polythene cover and pours some water into the bag and ties tightly with a thread. He keeps this in the sun. Students observe water droplets.

Expected Competency: 10

Rain



School: Panchayat Union Elementary School, Sankarapuram,
Villupuram District.

Name of the Teacher: C. Ragira

Topic: Phenomena of Earth and Sky

Major Idea: Different pattern of irrigation

Activity: Field trip to agricultural fields having
irrigation patterns.

Description: In order to teach students the different types of irrigation pattern, the teacher took the students to nearby agricultural field. Teacher approached the well along with students and asked students the use of water in the agricultural land. They said that the water in the well is used for plants. Teacher said that the pattern is called well irrigation. Then they went to nearby lake where water was released. Teacher told to the students water released from the lake is being sent to agricultural land. This type of irrigation called tank irrigation. At last they reached a river where different canals were used and this type of irrigation is called canal irrigation.

Expected Competencies: 6, 11

School: Panchayat Union Primary School, Kattu Nannanchur,
Villupuram District.

Name of the Teacher: R. Prema, Head Mistress

Topic: Phenomenon of the earth and the sky

Major Idea: Properties of air

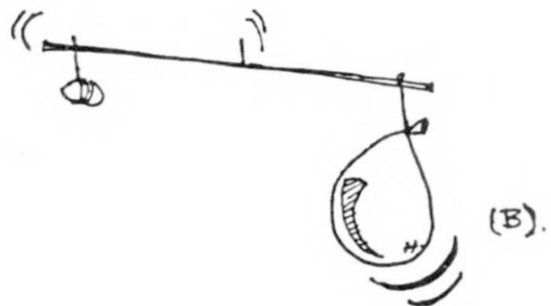
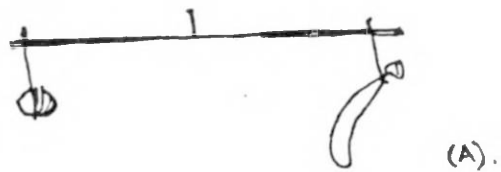
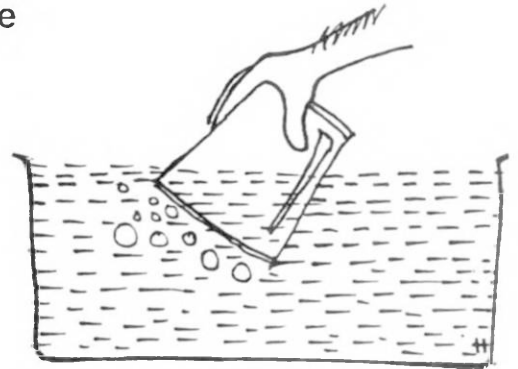
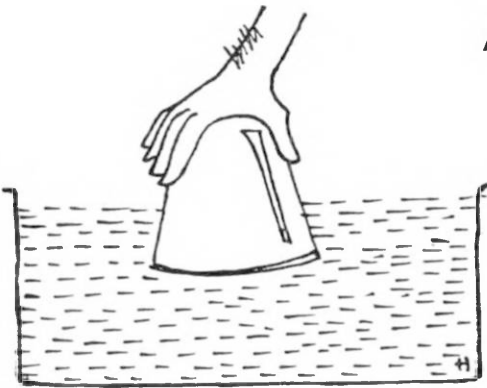
Activity: Activities to demonstrate that air occupies space
and that it has weight.

Description: Students were asked to press an inverted tumbler vertically in a trough containing water. Students said it was difficult. Then they were advised to tilt the tumbler slightly and try. Then they observed that water goes inside slowly. The teacher explained that since air is inside the tumbler water could not get inside. It shows that air occupies the space.

Students were directed to bring foot-scale, balloon and tiny stones. The scale was tied by a thread at centre. The stone and empty balloon were tied at either end of the scale. When the scale was lifted from its center the end of the scale with stones tied to it tilts down. Then air was filled in the empty balloon and balanced. Then the end with balloon come down. Students understood that air also having weight.

Expected Competency: 10

Air occupies space



Air has weight

School: Mandal Panchayat School, Nellimarla Junction,
Vizianagaram District

Teacher: G.V. Roja Ramani

Topic: Earth and the Sky

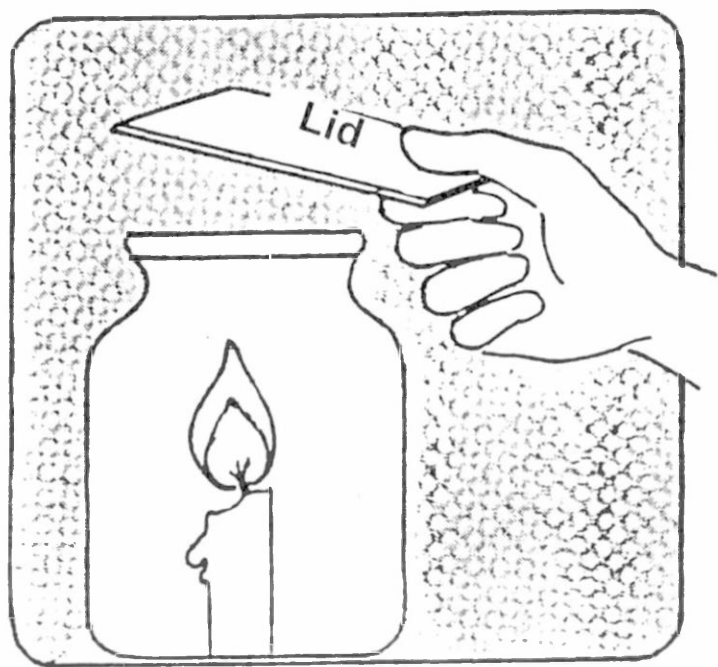
Major Idea: Air is required for burning

Activity: Demonstration experiment to show that air is
essential for burning

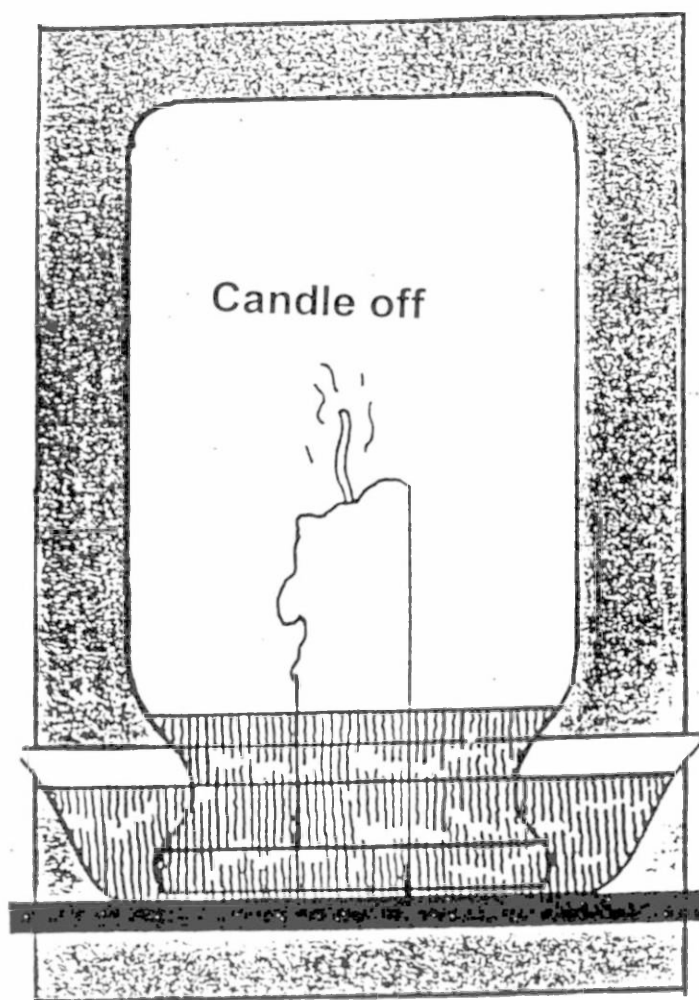
Description: Teacher takes a wide mouthed jar or a drinking glass and keeps a lighted candle in it. Next he takes a piece of cardboard and keeps it on the mouth of the jar. After some time the flame of the candle extinguishes.

Teacher takes a broad saucer with some water in it. He keeps a lighted candle in it at the centre of the saucer. He keeps an inverted jar over this candle. After some time the flame of the candle would be extinguished and the level of the water will come up.

Expected Competencies: 9, 10



Bottle



APPENDIX-I

OBSERVATION PROFORMA

INNOVATIVE ACTIVITY USED FOR TEACHING EVS II

School:

Name of the Teacher:

Address:-----

Topic:

Major Idea:

a) Activity:-----

b) Method:

- i) Story telling
- ii) Games
- iii) Demonstration
- iv) Field trip
- v) Other: (Specify)-----

c) Teaching Aid Details:

- i) Printed Charts
- ii) Drawing
- iii) Models
- iv) Apparatus

d) Description:-----

e)Duration of the Activity:

f)Sketch:

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