TRAINING PACKAGE IN CO-OPERATIVE

LEARNING BASED TRAINING OF TEACHERS IN TEACHING

ENVIRONMENTAL STUDIES II

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Place: Mysore

Date :   [SABITA P. PATNAIK]

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INTRODUCTION TO THE TRAINING PACKAGE

This training package is meant to stimulate the trainers to bring desired improvement in training strategy and in turn to enable them to guide teachers to use effective teaching learning strategies to make the Environmental Studies II classrooms more joyful.

The materials of this package could be used flexibly for preservice and inservice training programs by taking into account of local conditions and circumstances. They can be modified and improved if necessary.

The training package consists of six modules, i.e.

i. Co-operative learning

ii. Co-operative learning based training

iii. Characteristics of primary school learner

iv. Nature of EVS II

v. Alternative methods of teaching EVS II, and

vi. Evaluation in co-operative learning classes of EVS II

At the beginning of each module there are activity sheet, which should be read by all the participants during the training program. All the activity sheets are followed by study materials for further knowledge. The activities used in all the modules lead to group work and active learning.

Very less use of lecture input would be needed. If necessary, the resource persons or participants may add their inputs at the end of each sessions. The aim of the trainers should be to help teachers to be more successful in dealing with individual differences among children, to deal with large classes and in multigrade context.

EXPECTATIONS FROM THE TRAINING PROGRAM

ACTIVITY SHEET

What do you expect ?

Aim

To review the expectations of individual participants.

Activities

1. With your partner discuss what each of you would like to gain from this course.

2. Join up with another pair of participants and explain to the other pair your expectations.

3. Form up with the other groups and agree a general list of course expectations. This list should be helpful in guiding the establishment of course priorities and activities.

Evaluation

1. What are your main priorities for this course ?

2. What strategies will you adopt to ensure that you achieve these priorities ?

LEARNING LESSONS

ACTIVITY SHEET

Aim

To help participants to reflect upon themselves as learners.

Activities

Learning applies to children's learning as well as adult learning. The idea of successful learning applies to both.

When we think ourselves as learners it helps in two ways.

- We should learn better and also support learning of others.

- We understand more about children as learners.

1. Spend a few minutes, think about yourself as a learner.

Working on your own complete these sentences:

- I learn slowly when _____

- I learn quickly when _____

- I find learning easy when _____

- Learning in groups _____

- Learning from books _____

- I learn well from some one who _____

- I enjoy learning when _____

2. Share your responses with another participant

- What implications are there for the way you face your students.

- Discuss your conclusion with the whole group.

Evaluation

1. What measures should you take to help yourself to learn successfully during this program ?

2. Whether some of the measures help children in class rooms ?

3. Whether these measures would help primary teachers in handling their subjects or a trainer in a training set up ?

CO-OPERATIVE LEARNING

ACTIVITY SHEET

Aim

To consider issues involved in the use of co-operative learning.

Activities

1. Work in groups of 4-5 for two minutes to count the shapes in two figures in two phases: (i) persons best in counting shapes (competition- correct answer 40). (ii) Group is excellent or very good. All group members should know the answer (co-operation - correct answer 19).

2. List and discuss the experience of carrying out these tasks. What was significant ? How did you feel ? What did you learn ?

3. Discuss implications for teaching children environmental studies in primary schools.

Evaluation

1. What was the most significant aspect of this activity for you ?

2. How could a teacher make greater use of co-operative learning in her class room ?
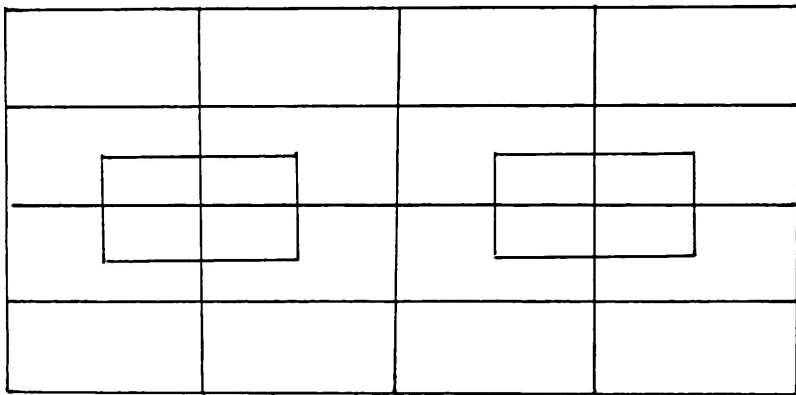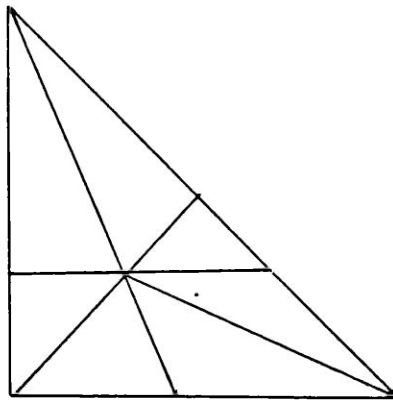
Activity sheet

Fig. (i)

Fig. (ii)

CO-OPERATIVE LEARNING

STUDY MATERIAL

The idea that people working together towards a common goal can accomplish more than people working by themselves is a well established principle of social psychology. What is new is that practical cooperative learning strategies for classroom use have been developed, researched and found to be instructionally effective in elementary and secondary schools.

Principles of cooperation have been applied since many years in industry, in military, in sports and many other activities. They have also been utilised in education for a long time but their use had been tended to be occasional and informal.

Systematic cooperative learning programme that could be used as the principal means of delivering instructions were developed in 1970s. The rationale for this new emphasis of cooperation in the classroom was the profound dissatisfaction with the traditional classroom system in particular traditional grading. It was felt that the competitive nature of grading was counter productive, as it led students to discourage their classmates from doing well academically. They did not develop the social skills required, the individual tasks were boring and isolated for

the students in addition to decreasing academic achievement. For these reasons and others, several researchers developed programmes by applying the principles of cooperation to classroom settings. Some of the most distinguished personalities in this field are Shlomo Sharan (1976) of Tel Aviv University, David and Roger Johnson (1976) at the University of Minnesota, John Slavin (1980), David Devries (180) and Keith Edwards (1980) at John Hopkins University. They have stressed the importance of cooperation which is fundamental to democracy. This implies educational setting in which children with diverge backgrounds and a variety of achievement and ability levels work together sharing common educational experience. Thus, cooperative learning is an instructional methodology in which students work on learning activities in small heterogenous groups and receive rewards or recognition based on their group's performance.

Cooperative learning strategies have been found to increase academic achievement, develop social skills and mainstreaming of handicapped students, reduce ethnic tension and increasing self esteem among school children. The students work in small mixed ability learning groups, have members consisting of high achievers, average achievers and low achievers. The students in each group are responsible

not only for learning the material taught in the class, but also for helping their groupmates learn. Regardless of the subject matter, students are encouraged not just to give answers but to explain ideas and skills to one another. Students serve as a major learning resource for each other, sharing and gathering information as needed and the teacher acts as a consultant and activity coordinator. Slavin (1988) has advocated that two conditions must be fulfilled if cooperative learning is to enhance students achievement. First, students must be working towards a group goal. If students care about the success of the team, it becomes legitimate for them to ask one another's help and to provide help to each other. Second, the success at achieving this goal must depend on the individual learning of all group members, that is, there must be individual accountability. To enhance the achievement of all students in the group, the group success must be based not on a single group product, but on the sum of individual learning performance of all the group members. The group's task in instructionally effective forms of cooperative learning is almost always to prepare group members to ensure that all will be successful on learning assignments. When cooperative learning methods provide group goals based on the learning of all members, the effects on student achievement are remarkably consistent.

Majority of the researchers in this area have suggested that heterogenous grouping, in which students are mixed within groups according to their ability, sex and ethnic background is also an important factor in bringing out the best in the students. Classes can be structured by arranging the students desks and chairs in clusters. The classes could be conducted out of the classroom under the trees, in the school garden with a movable blackboard. It requires the imagination and skill of the teacher to make the best utility of this method to optimise instruction and enhance academic achievements.

In order to provide peer support and group accountability, students are evaluated as a group and each student's individual learning affects the group's evaluation. Groups are evaluated for the mastering of the subject matter and their ability to work together. Students reactions to cooperative learning can also be evaluated and their perceptions can be used by teachers to evaluate cooperative learning and make appropriate changes. In following these guidelines, cooperative learning has mutual benefits for the teacher as well as the students. Both teacher and students like it - teachers, because their students learn a variety of academic and social skills and students, because they learn a lot and have fun during the class.

One of the models of cooperative learning which can be easily implemented in any classroom is 'Learning Together' model. This model involve students working in six member heterogenous groups on the instructional tasks or assignments. They can be given discussion or study material and can be given instructions to discuss and do the activities together. Each group has to give back their assignment sheet and receive praise as a group based on how well they worked together and how they have done on the group task. To implement this technique, the following strategies can be used in 40 minutes classroom transaction.

a. Dividing the students into groups (maximum six students in each group)

b. Distributing discussion/study material

c. Allowing ten minutes to think/discuss and share/write

d. Regrouping

e. Allowing 10-15 minutes to think/discuss and share/write/consolidate

f. Consolidation of points from each group and presentation by the group leader and then by the teacher.

During the above 40 minute period the students should be actively involved in thinking/discussing/writing and sometime should be given for consolidation. The teacher helps the students in grouping, regrouping, management of discipline, interacting, discussion and consolidation,

summarization and finally praising, discussing and writing main points on the blackboard for the benefit of the whole class.

Some other approaches which are used for cooperative learning are as follows.

Student teams achievement divisions (STAD)

STAD was developed by Robert Slavin and his colleagues at the Johns Hopkins University and is perhaps the simplest and most straightforward of the cooperative learning approaches. Teachers using STAD present new academic information to students each week, either through verbal presentation or text. Students within a given class are divided into four or five member learning teams, with representatives on each team of both sexes, of the various racial or ethnic groups, and of students who are high, average and low achievers. Team members use work sheets or other study devices to master the academic materials and then help each other, learn the materials through tutoring, quizzing one another, or carrying on team discussion. Individually, students take weekly or biweekly quizzes on the academic materials. These quizzes are scored and each individual is given an "improvement score". This improvement score is based not on a student's absolute score, but

instead on the degree to which the score exceeds a student's past averages.

Each week, through a short (normally one page) newsletter or some other device, teams with the highest scores and students who have high improvement scores or who have perfect scores on the quizzes are recognised. Sometimes all teams who reach a certain criterion are recognised.

Jigsaw

Jigsaw was developed and tested by Elliot Aronson and his colleagues (1978)at the University of Texas and then adapted by Slavin and his Johns Hopkins colleagues. In Jigsaw, students are assigned to five or six members heterogeneous study teams. Academic materials are presented to the students in text form, and each student has the responsibility to learn a portion of the material. For example, if the textual material was no cooperative learning, one student on the team would be responsible for STAD, another for Jigsaw, another for Group Investigation, and perhaps the other two would become experts in the research base and history of cooperative learning. Members from different teams with the same topic (sometimes called the expert group) meet to study and help each other learn

their topic. Then students return to their home team and teach other members what they have learned. Following home team meetings and discussions, students take quizzes individually over the learning materials. In the Slavin version of Jigsaw, team scores are formed using the same scoring procedures used in STAD. High scoring teams and individuals are recognised in the weekly class newsletter or by some other means.

Group investigation

Many of the key features of the Group Investigation (GI) approach were designed originally by Herbert Thelen. More recently, this approach has been extended and refined by Shlomo Sharan and his colleagues at Tel Aviv University. The group investigation approach to cooperative learning is perhaps the most complex of the cooperative learning approaches and the most difficult to implement. In contrast to STAD and Jigsaw, students are involved in planning both the topics for study as well as how to proceed with their investigations. This requires more sophisticated classroom norms and structures than do approaches that are more teacher centered. It also requires that students be taught the communication and group process skills. The teachers who use the GI approach normally divide their classroom or six member heterogeneous groups. In some instances, however,

groups may form around friendships or around an interest in a particular topic. Students select topics for study, pursue in-depth investigations of chosen subtopics, and then prepare and present a report to the whole class. Sharan et al. (1984) described the following six steps of the GI approach.

1. **Topic selection:** Students choose specific within a general problem area, usually delineated by the teacher. Students then organize into small two to six member task oriented groups. Group composition is academically and ethnically heterogeneous.

2. **Cooperative planning:** Students and teacher plan specific learning procedures, tasks, and goals consistent with the subtopics of the problem selected in Step 1.

3. **Implementation:** Pupils carry out the plan formulated in Step 2. Learning should involve a wide variety of activities and skills.

4. **Analysis and synthesis:** Pupils analyze and evaluate information obtained during Step 3 and plan how it can be summarized in some interesting fashion for possible display or presentation to classmates.

5. Presentation of final product: Some or all of the groups in the class give an interesting presentation of the topics studied in order to get classmates involved in each other's work and to achieve a broad perspective on the topic. Group presentations are coordinated by the teacher.

6. Evaluation: In cases where groups pursued different aspects of the same topic, pupils and teachers evaluate each group's contribution to the work of the class as a whole. Evaluation can include either individual or group assessment, or both.

In addition to development of intellectual and social skills, the cooperative learning also reduces anxiety among the students, they enjoy learning, become active participant in the class. It can also be very effectively used for large classes and in multigrade teaching context to make the teaching learning more effective.

CO-OPERATIVE LEARNING BASED TRAINING

ACTIVITY SHEET

Aim

To consider the idea of 'co-operative learning based training' as a means of training teachers as they try out new ways of working.

Activities

1. In small groups consider how the idea of co-operative learning based training (both pre- and in-service) might be used ? What sort of difficulties do you anticipate ? How might these be overcome ?

2. Discuss the implications for training teachers of primary schools on teaching of environmental studies.

3. Report your findings to other members.

Evaluation

1. How might you make use of the idea of co-operative learning based training to help you to develop your own training programme ?

2. How might you overcome possible difficulties ?

CO-OPERATIVE LEARNING BASED TRAINING

ACTIVITY SHEET

The pre-service, in-service education and training programmes are essential for achieving and sustaining quality of education. They are supposed to develop desired attitudes and skills among teachers apart from necessary knowledge about different aspects of education. Therefore, a significant consideration in this regard is to design pre-service and in-service programmes after identifying the training need and contact mode. Increasing emphasis is to be given a reflective rather than prescriptive input. The modality of training must generate and sustain intrinsic motivation or desire to learn and improve practice. This leads to the conclusion that whether pre-service or in-service, training program process is more important than content to stimulate the trainees desire and capacity to acquire knowledge and competencies.

Keeping in view the drawbacks of the most commonly used traditional methods of training, in which the participants/trainees have less role, low motivation and feel extremely bore because of less participation, the strategy of co-operative learning based training is to be advocated as it is quite evident that the trainer dominated recitation is actually counter productive for individuals by depressing their interest and learning rates.

According to Kagan (1972) and Johnson (1976) a co-operative learning situation compared to others, promote more intrinsic motivation, greater achievement orientation, more effective information processing, higher achievement in learning concepts and solving problems and lower level of anxiety.

Practical use of co-operative learning strategies for classroom have been found to be instructionally effective for school children. Some of the distinguished personalities who have worked in this area are Johnson and Johnson (1975), Sharan (1976), Slavin (1980) and Kagan (1985). They have developed co-operative learning method and have used these methods in actual class rooms, have researched in this field for past twenty years. But substantial uses are not done and researches are not conducted to see the effect of co-operative learning strategies on pre-service or in-service training. In India, attempt was made by Jangira, Ahuja and Mukesh Kumar (1991) to see the effect of co-operative based training learning in in-service training on special needs and their findings were quite encouraging. In another project of N.C.E.R.T., i.e., Effective school for all: Multisite Action Research Project (1993), the co-operative based training learning was used for teacher educators of elementary and secondary schools. The result of this training was also positive.

In a co-operative learning based training set up when the trainees would work together in groups for topics related to - for example 'teaching of environmental studies', they would work towards a common goal, they would depend on one another with efforts to achieve the group goal and there would be greater enthusiasm for contribution and the energy generated in co-operative setting would generate more intrinsic motivation. The feeling of connectedness would produce positive energy and would be motivated to do their best.

As the situation would be structured co-operatively, the trainees would enjoy learning together, they would have more freedom to explore their thoughts and ideas. Keeping in mind all the positive aspects of co-operative learning based training, it can be assumed that this strategy would be highly effective in changing some of the behaviours of teachers and teacher educators, i.e. in terms of result in knowledge, attitude and skill. As there would be face to face interaction, group discussion, etc., they would like the training modality and accept it to use it in their own set up.

Some of the other implications of co-operative learning based training are as they learn from each other,

i.e. in groups, it would lead to more participation and involvement and it would bring life to the training sessions and participants/trainees would enjoy the sessions. Also it would improve social relation of participants. It can be used effectively for large groups with meager institutional facility, i.e. space and other infrastructure.

CHARACTERISTICS OF PRIMARY SCHOOL LEARNER

ACTIVITY SHEET

Aim

To help participants to reflect upon the characteristics of a primary school learner.

Activities

1. Spend few minutes thinking yourself as a primary school learner. What are the things you liked to do ? What are the things you were more interested ?

2. Share your responses with participants of your group. What implications are there for the way we treat/ teach children ?

3. Discuss your conclusion with the whole group.

Evaluation

1. What measures are to be taken to understand about the characteristics of learners ?

2. How these measures help children in Environmental Studies classes ?

CHARACTERISTIC OF PRIMARY SCHOOL LEARNER

STUDY MATERIAL

Ramaa, S., RIE, Mysore

The knowledge of the developmental characteristics of the learner is very much essential for planning and providing appropriate educational programmes for the learners at different stages. Though the knowledge of the developmental characteristics of preceding and following stages are essential, here the discussion is restricted to late childhood (6-12 years) only.

I. Psychomotor development

The structural development is manifested particularly in motor ability leading to the acquisition of new skills. The characteristic features are:

i. Abundance of energy and vigour; there is an organic need for strenuous physical activity; skeletal muscles require exercise.

ii. Resistance to fatigue as well as increase in strength so that they can work for longer hours.

iii. Increased manual dexterity and muscular co-ordination so that they can undertake various physical activities.

iv. Increased accuracy and endurance in relation to games.

II. Intellectual development

1. Child begins to form concepts of physical and social reality.

2. By the age of 10, the child develops perception of size, shape, colour, time and distance, etc.

3. Memory increases at a very rapid speed. The child can learn rote memorization.

4. Creativity develops in children and imagination begins to grow.

5. Thinking and reasoning develop in relation to concrete material.

6. Span of attention increases from 7 minutes to 10 minutes and interest in exploring the environment increases.

7. Child is now able to use symbols in language, drawing, symbolic play and problem solving.

8. The child asks questions about his environment, imaginative plays are liked.

9. The child's capacity for more accurate thinking is developed. This seems to be due to child's transfer from

fantasy to reality in his thought life, his growing ability to see aural relations and his growth in the use of reading skills. These things are elaborated below.

10. Courage and loyalty increase (children show courage in doing things).

i. The seeking for reality and objectivity:

a. Children who are about this age begin to get a realistic picture of themselves and the world.

b. The child's concept of natural phenomena gradually develops from fantasy and personal identification to an understanding of natural laws. This helps them in understanding the various concepts/laws discussed in environmental studies.

c. Slowly the child distinguishes himself from the external world. At about eight or nine, the child begins to make a clear distinction between himself and the outer world. This is helpful in understanding the spatial relations - his position in the space, familial relations, his strengths and limitations in comparison with other people. He can perceive himself as different from other people in his immediate environment.

d. The child's ideas concerning the origin and the natural functioning of plants, animals, water, sky, sun,

moon, earth and so forth become remarkably clear and correct.

e. The child at this stage is interested and develops rapidly in his understanding of mechanical causality and natural phenomena. In addition, he exhibits an equal interest and understanding of his own relationship to others.

f. It is a time of eager absorption of information and ready accumulation of ideas.

g. Children of this age group are more objective, factual, accurate, impersonal, practical, empirical, utilitarian, cool and phlegmatic, insensitive, tough-minded or materialistic.

ii. The increasing use of causal relationship in the physical and mechanical fields:

a. Along with the growing concept of reality, there appears to be an increasing ability to see causal relationships and to form generalizations. The generalizations are used in more accurate reasoning.

b. Children during these years remain primarily interested in current happenings.

c. Capacity for logical thinking increases. The child becomes increasingly efficient in selecting,developing

and applying cognitive operations in relation to concrete objects.

d. The child during this period has a better general understanding of problems. He has a much better sense of what a conceptual problem is. He can rationally analyse a problem. He is able to deal with the environment in a flexible, efficient and symbolic manner. He has at his disposal a set of operations or rules that are logical although concrete.

iii. Increase in the use of reading skills:

a. Grades IV through VI have long been considered as the period of rapid growth and refinement of taste in reading.

b. Free reading reaches its peak at this stage. Interest in reading reaches its greatest height.

c. Use of reading of factual materials, scientific and mathematical information and fiction with a realistic theme increases.

III. Cognitive development (Piaget's theory)

During this age children will be in concrete operations stage. Some of the important features of this stage are as follows:

a. Mental operations performed by the child are closely connected to concrete objects and actions.

b. Logical thinking does occur, only if concrete objects are available or if past experiences are drawn upon. If the problem is in verbal form, he finds it difficult to comprehend the same.

c. Egocentrism decreases in its intensity. That means he begins to consider other's view point and his speech becomes socialized and less egocentric.

d. He begins to understand objects from several dimensions.

e. He develops the ability to conserve. Conservation is the ability to understand that an amount of something has permanence and the amount of something does not change if you alter its shape.

Conservation of length and number occurs in between 6 and 7 years; area, mass and liquid between 7 and 8 years and weight between 9 and 10 years.

f. Decentering becomes possible. He can think of multiple dimensions of a single object.

g. Further advance in the child's ability to classify, to form concepts, and to group object along several dimensions are noticed in this stage.

h. Inductive thinking dominates, that means the child can proceed from particular to general.

i. Logical thinking using concrete objects occurs. Thinking abstractly about future possibilities does not occur.

j. The child develops certain logical laws which are helpful in consistency in thought. These laws are as follows:

1. Law of combination or combinativity

Two distinct classes may be combined to form a comprehensive class which includes both the previously distinct classes:

Example: All boys and all girls = all children

Plants and animals = organisms

Elements and compounds = matter

2. Law of additivity

Things of the same kind can be added to form larger quantities or measures or number

Example: a + 3a + 4a = 8a

3. Law of reversibility or inversion

For each operation there is an opposite operation which annuls it, or two classes to form a comprehensive class may be separated.

Example: All children, except all boys   = all girls

         All elements, except non-metals = metals

4. Law of associativity

If several operations are to be combined, the order in which they are combined is of no consequence:

Example: A + (B + C) = (A + B) + C

5. Law of identity

When the operation is combined with its opposite it is annulled.

Example: Travel 5 miles due north then 5 miles due south and one is back at the starting point.

        7 colours -- white light -- diffraction -- 7 colours

6. Law of tautology

With the exception of combination of numbers.

Example: 3 + 2 = 5, whenever a class is combined with the same class it remains the same class.

Example: Repetition of the same point adds nothing to our argument.

IV. Emotional Development

Various changes occur during this stage. The ones which are more relevant in the present context are discussed here.

a. The feelings and impulse that constitute the emotional life of the child are interwoven with all his thoughts and actions.

b. As they grow older, children gain in their ability to express feelings indirectly by verbalising them.

c. At first, the child is frustrated by things that he cannot do. As he grows older and can do more and more things for himself, physical frustration becomes a less frequent cause of emotional behaviour.

d. The child becomes increasingly familiar with the people and objects in his world.

e. It becomes increasingly important for him to be accepted by his peers.

f. A major source of satisfaction comes from opportunities to put their abilities to use.

g. The growing child is acquiring new motives and new goals. These enlarge the possibility of his becoming frustrated and thus emotional.

h. Child learns to refrain and control emotions.

i. Peer group relationship and school atmosphere and other environmental factors influence his emotional

behaviour. His emotions get linked with the new experiences, interests and new stimuli.

j. He does not react with the various old stimuli.

k. The individual normally begins to develop emotional attitudes toward such cultural values as the golden rule, democracy and human brotherhood.

l. Emotional reactions to aesthetic experiences become increasingly important during childhood years.

m. Creative expression is an excellent outlet for strong emotions and appreciation of the great works of art and literature also plays an important role in the emotional life.

n. Emotions are expressed even in the absence of concrete objects.

o. Emotions are most contagious during childhood, because children are highly suggestible and dependable on others.

p. Early childhood fears of animals, high places and noise disappear and fear of supernatural, imaginary creatures, fear of failing, being ridiculed and being different appear.

q. Anger is caused by thwarting, teasing, making unfavourable comparisons with other children, interruption of activities in progress, ridicule by peers or elders and negligence, etc.

r. Emotional adjustment during this stage depends on the child's ability to meet the usual developmental talks of this period. These include developing the basic school taught skills, learning work habits and learning how to get along with age-mates as well as with authorities outside home.

V. Social Development

The important characteristics are as follows:

a. The beginning of formal schooling not only increases a child's opportunities for furthering his social development but also give rise to problems of adjustments that encourage the development of socially desirable behaviour through their resolution under skilled and sympathetic teacher guidance.

b. Children take interest in group games. Boys and girls from their own groups. Group consciousness develops and the child becomes less selfish, self centred and aggressive but more co-operative and outgoing.

c. Social consciousness develops very rapidly. The child shows greater loyalty to his gang. He conforms to the stand of his gang.

CLASSROOM PRACTICE

ACTIVITY SHEET

Aim

To provide an opportunity for participants to review their own classroom practice.

Activities

1. On your own, draw a picture of primary school Environment Studies classroom. Try to show by illustration the things that you feel are important. This is not a test of your artistic ability so feel free to draw in whatever way you like. Use cartoons, colours or words to emphasise particular points if you wish. You may also like to talk to other course participants as you draw. The aim is to use drawing to help you to think about your own classroom.

2. With another participant talk about your picture. What are the problems that you face in your teaching ? Try to agree a list of common issues and problems.

3. Form into groups of four and compare your lists of common issues and problems.

4. Finally discuss generally the points that have arisen from these activities with all the other course members.

Evaluation activities

1. What are the main issues and problems about classrooms that have emerged from this activity ?

2. What objectives are suggested that might be addressed during this course ?

FACTORS INFLUENCING CLASSROOM LEARNING

ACTIVITY SHEET

Aim

To consider classroom factors that influence children's learning.

Activities

1. Consider the 'classroom strategies chart'. This was produced by a group of teachers who included the ways they use to help individual pupils learn in their classrooms. In the empty boxes you can add any other strategies that you find useful.

2. Put a star against the three strategies that you think are most useful to you. Remember, our concern is with strategies that help you respond to individuals in the class.

3. In groups compare your chart with others. Then choose **one** strategy as a group and work out a plan for using this strategy in the classroom. Try to make use of all the expertise in your working group.

4. Share your group recommendations with the rest of the course.

Evaluation

1. Has this activity helped you to pinpoint aspects of your teaching that could be improved or developed ?

2. Did you find it useful to discuss classroom practice with other teachers ?

FACTORS INFLUENCING CLASSROOM LEARNING

ACTIVITY SHEET

CLASSROOM STRATEGIES CHART

GIVING WORK TO INDIVIDUAL TASKS		TALKING TO INDIVIDUAL STUDENTS
	GIVING CHOICE TO THE PUPILS	PRAISING STUDENTS FOR THEIR WORK
	USING DIFFERENT MATERIALS IN CLASS	GIVING GROUP WORK
	LISTENING TO INDIVIDUAL STUDENTS	RECORDING PROGRESS OF STUDENTS

CHILDREN'S LEARNING ENVIRONMENTAL STUDIES (SCIENCE)

Activity sheet

Aim

To help the participants to think about children learning environmental studies.

Activities

1. Read the discussion material 'what do you know about learning environmental studies'.

2. Look and think over six statements about learning. Make notes of some examples from your own experiences as a learner (that illustrates or contradicts) both now and in the past and examples of learners learning in your place in any of the primary school set up.

3. Working in small group of 4-5, discuss each of these statements and examples you have noted with your friends. Think about implications of each statement for your practice and your work place/practice of primary teacher and in primary schools.

4. Working in same groups of 4-5, select one of the six statements and discuss it.

5. Report your findings to rest of the participants.

Evaluation

1. What are implications of these discussion for your classroom practice/training practice.

2. Are there particular aspects of your teaching/ training that you might want to develop in the light of these discussion.

NATURE OF ENVIRONMENTAL STUDIES

Study Material A

Do you know that in learning Environmental Studies II the

Learning about environment is never complete.

Even as adults, our knowledge and understanding about environment continues to develop as we test our new ideas against previous knowledge. Old ideas can be changed in the light of new experiences in/about the environment. **Learning about environment is individual.**

Even if a whole group of children or adults are exposed to the same kind of environment experience, the learning that takes place will be different for each individual, child or adult, brings to every situation a unique kind of previous experience.

Learning is a social process - Even it is true in case of during learning of Environmental Studies II

Some learning takes place in a group. Sharing learning with others can be stimulating.

Learning can be enjoyable - Learning in/about environment is still more enjoyable

Learning in the environment is sometimes hard and also enjoyable at the same time. Even making mistakes can be part of fun. All these are true for learning Environmental Studies II.

Learning is active - It is more true in case of learning Environmental Studies II

Some one can teach but no one can do learning for anybody. Learning in any subject, especially in environmental studies requires active engagement of learners, in doing and talking.

Learning means change

The challenge of change through learning may be experienced as exhilarating or as daunting. Often it is both.

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NATURE OF ENVIRONMENTAL STUDIES

Study Material B

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Background

Environmental studies is not a new subject in our school curriculum. It had been under varied names as general knowledge, social studies, general science, nature study, citizenship for the young and such others. It was even equated to liberal education. It was also viewed, by some, that the EVS made a unique contribution to liberal education. Considering the term 'Environmental' it has been used Eulogistically to describe a very wide range of educational activities. While talking of Environmental Studies, atleast five overlapping but different senses may be distinguished. (1) The whole experience of the child, (2) the character of the school, (3) the features of the classroom and the school used in the active learning, (4) the social and physical characteristics of the child's home, neighbourhood and thee wider world and (5) features of the neighbourhood and natural surroundings used in teaching.

John Dewey viewed environment as consisting of those conditions that promote or hinder, stimulate or inhibit the

characteristic activities of the living being. Considering, the above point, EVS forms a bridge between the school environment and that of the home and community outside; where, the child can test the relevance of his classroom experience to the world, in which he will use it and at the same time accustom himself to employing in society those interests and skills which he had learnt.

Progressivists viewed that exploration of the environment was an itself a satisfying experience for children. They differ from the traditionalists who had seen field studies as a low academic standards. The progressivists' approach to EVS was through an emphasis on field work and project studies, where the child is actively involved in the process. Thus, the evolution of the concept of EVS has led to the present conceptual framework; where, EVS is seen as both natural and social environment (aspects).

Conceptual framework (present)

Of late, two new perceptions of EVS have acquired particular importance. 1. There is a growing concern for environment demanding proper awareness about the problems and consequentially of conservation measures. 2. Environment is given much a broader meaning that covers both natural

vis-a-vis human aspects and thus pointing out to the social origins of environmental configurations. Apart from these, there is a growing realisation that the EVS should be seen as an integrated curriculum approach at the early school stage. The fabric of EVS by its very nature is a network of interactive linkages and accordingly the human being and his socio-natural environment have to be viewed at certain levels of generalities and specifities within the range of visualisation of the learner.

The primary aim of EVS is to help the child to understand the processes which shape his surroundings so that he does not remain as a passive spectator to natural and social environment around him but becomes an informed and active mediator of his environment. It provides distinctive opportunities for the development and exercise of the general cognitive abilities. EVS not only aims at developing awareness of the child to the various features of his immediate environment but also enables him to use his own environment as a source of stimulus to learning. It is based on child's organised investigation of his own natural or physical surroundings and learning revolves around the study of environment. In other words, environment becomes a stimulus to learning and learning is directed to the study of environment. EVSs infact has an educational advantage in

the sense that it develops certain process skills. In general terms, here is a situation — what means can we use to record it ? What techniques are necessary to analyse it ? What information would contribute to understanding it ? How is the situation developing ? How could we contribute to that development ? If we had the opportunity, how can we communicate the results of our enquiry ? and so on. Therefore, EVS is not a content area but an **approach to learning.** The basic idea here is, to teach the information gathering skills rather than imparting scientific facts. It emphasises upon tapping the immediate surroundings which forms a seat of learning. It focusses upon the direct experiences of the child. The basic difference between EVS and Science Education is, in Science Education, the abstractions and generalisations are the focal point. The situations are sought in the environment to explain these principles. Whereas in EVS, it provides themes in which the relevant scientific principles are sought and elaborated. Thus, EVS constitutes an approach "learning how to learn", wherein training is acquired in the methods of self learning. EVS also educate young child to be better equipped to face everchanging environment in his future life.

EVS in School Curriculum

EVS curriculum is organised in two different ways at the primary stage: (1) in one approach EVS is divided into

two separate curricular subsections, i.e. Social Studies and science usually referred to as EVS parts 1 and 2. However, in the first two standards a holistic approach is maintained based on the view that it is too early to expose the child to separate disciplines . as science and social studies. (2) There is another approach, where some people consider that it is worthwhile to postpone the split approach till class 5. This view is held because, a formalised division would hamper correlated teaching and operation of concepts and field of experience. Under such an approach the units of study are so identified that the content of each unit is homogenious. There are two more issues pertaining to EVS: one pertains to national goals and aspirations to be cultivated through the teaching of EVS, such as democracy, secularism, socialism, scientific temper, etc., the other issue is related to local specificness that is reflected in the EVS curriculum. When so many changes are taking place, especially in the areas of Science and Technology and the socio-economic and cultural scenario, EVS is the only major area of primary school curriculum which has to reflect them.

These considerations can be met through appropriate teaching-learning strategies, techniques and devices including text books and other curricular materials. A teacher education programme should provide for proper

awareness of these requirements and development of skills
for accomplishing the tasks. Teach preparation efforts for
EVS are very complicated ones requiring necessary awareness,
competencies, good deal of open mindedness, flexibility and
ingenuity. It is desirable that the teacher follows learner
centred, activity based and problem solving oriented
teaching-learning strategies. He should act more as an
activity facilitator, co-investigator, co-learner, and a
guide to identify the learning resources and not merely a
communicator and the disseminator of knowledge related to
Environmental Studies. The teacher has to employ the methods
to develop the process skills like, formulating hypotheses,
to ask questions, to experiment with new idea, to stimulate
creative thinking and solve problems. The teacher has also
to employ the principles of psychology in understanding the
non-scholastic dimensions of the child's needs. He/she has
to be apt in providing guidance and counselling after
assessing the child's problems.

To conclude, the EVS can be viewed as an approach to
the learning of natural and social environment without being
burdened by any disciplinary considerations. Though it
deduces from a philosophical conception, it is an apparatus

of physical activity, personal discovery, the evolution of knowledge through activity with teacher as a guide and integration of subjects. Ontologically,EVS builds up certain inherent values like, self reliance, self confidence, social development, learning of social roles, development of group spirit or comradeship in an out of school situation.

Alternative method of teaching EVS II

Activity sheet

Aim

> To help participants to reflect on different methods of teaching of EVS II.

Activities

> 1. In small groups list the methods of teaching EVS-II which would make children active, happy, satisfy their curiosity, if necessary opportunity should be their for the students to go out of class.

> 2. Discuss the implications of use of these methods on children and classroom management while teaching EVS II.

> 3. Report your findings to other members.

Evaluation

> 1. How the identified methods can be used in co-operative learning set up to make it more effective.

> 2. How would you overcome the possibly classroom management problem.

ALTERNATIVE METHODS OF TEACHING EVS II

STUDY MATERIAL

To make the learning more joyful the following child centred activities can be taken up in the primary classrooms. In a co-operative learning set up also some of these methods can be adopted.

Telling stories

Children like stories. Either teacher or a student in a group tells a story, and communicates better. Telling a story catches the attention of the young children. But it is important to use a story to maximum effect. Here are some points to remember. Before deciding to use a story, the teacher has to: a. make sure that the story has a scientific message which the children can understand. It should be relevant to the lesson. b. The story teller must understand the story and practice telling the story before the lesson. c. While listening to a story,children should be comfortable and can see the story teller. d. Story should be told slowly and questions should be asked as story goes along to check that the children are understanding. e. If possible illustrate the story by charts/cards which can be reused.

Science games

Games (card/board/outdoor) can effectively used in co-operative learning situation.

A game is often, but not always, introduces competition. There are advantages and disadvantages in this. Children enjoy games. They add to the interest of lessons. Games usually have rules and as children grow up, they like to learn these rules and keep them in their mind. A teacher can often teach a game in her environmental studies II lesson. The children can then play the games in their activities lesson. The teacher should see that the games are simple to play. They are enjoyable. They should have simple rules.

Demonstrating experiments

Some simple experiments can be used as a good way to begin a cooperative learning lesson. They catch the children's attention and throw up many points for discussion. Here are some examples.
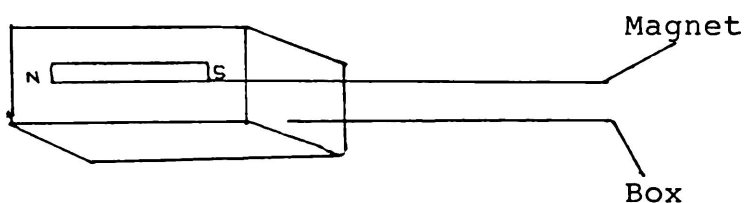
1. What happens ?

2. What happens if pins or metal clips are held nearby ?

Experiment 1

Balloon

Bottle

Hot water
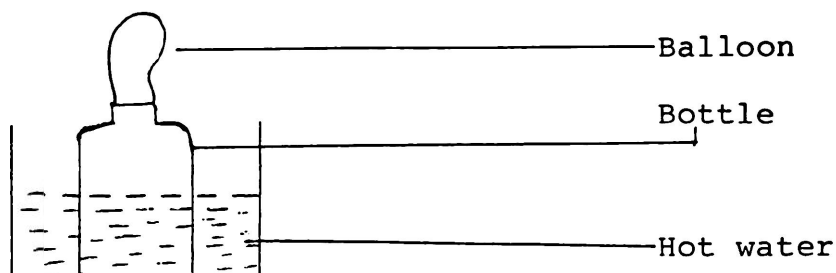
(heated by a candle)

Experiment 2

Magnet

N ⎡_____⎤ S

Box

Puppets

Young children are very imaginative. Therefore, a puppet may be very useful with these children. Puppets can be made out of cardboard, cotton cloth, etc. match sticks, bottons can be used for nose, eyes, etc. Puppets shows can be used for some of the lessons to make them more lively and interesting. In a cooperative learning set up, to introduce the lesson it can be used.

Field trips

There may be places around school which can be visited during EVS II lessons. Children can visit the people

at work, the carpenter, the mechanic, cobbler, farmer, potter. They can visit places such as local hospital market, nearby secondary school or college, a garden, a hillside, a pond, a diary, a forest, etc.

The planning of visit should include why, when, how aspect. During visits children should be encouraged to observe carefully, note and ask questions. After the visit in groups, they should talk about what they saw and heard, make drawing, painting, collages or write about their experiences. Discuss about objects which have been brought. Their records may be used for group discussion in a co-operative learning set up.

Role playing

In order to provide meaning to the abstract concepts, role playing is a useful strategy. Having children act out the meaning of the words helps to visualize them. In an unit of astronomy, the words, 'rotation', can be acted out. Similarly to give understanding about the relationships among planets in our solar system, role playing helps. Students can be assigned different roles to play - the sun, mercury, venus, mars and so on. Role playing, if not always, can effectively used in cooperative learning. The above example of role playing can be used for different groups.

Films/slides/video

T.V. in the classroom is a window to the world. The program allows students to move beyond the boundaries of space and time and to see the things in new way. After the film/slide/video, children can be made groups to discuss and consolidate the points.

Projects

The teacher or students may select a project. They might choose the animals in the school compound. All the various aspects of animals of the school compound are considered such as insect, different animals, their size, animals living on and around trees, burrows, sky. Projects can be given very effectively to different groups where children experiment, observe, record, consolidate and present.

Exhibition

Children can plan and present plant/animal show for children in other classes. Visuals, charts, plants, animal materials, live plants/animals might be brought into. They can classify plants/animals. Also classification can be made according to other characteristics. Groupwise work can be assigned to the children and finally they are asked to present their experience and learning.

Scrap books

Students in groups can collect appropriate magazines and newspapers cuttings and bring them to school. They can be placed on a table for free time activity. With teacher's guidance and suggestion, the pictures of animals/plants can be put into separate sections. Preparing albums containing parts of animals/plants such as feathers, flower, leaves, etc. can also be encouraged.

Investigations

The problems can be given in groups and after investigating the children learn certain aspects of a lesson. Eg. Encourage children to observe four seeds put into damp cloth, i.e. two boiled in hot water, other two untreated. Untreated seeds would sprout (children observe they do not need light for sprouting). The seeds can be put to garden soil (again observe, once leaves come, plants need light. Observe the treated seeds decay or covered with mold/fungus. Observe and infer that these non-green plants get food from the stored material in the beanseeds).

Written language/reading

In groups, children can write a prose piece/poem/ autobiography about the life of specific plant or animal, i.e. snail, beanseed, a lily, a calf, or a butterfly.

Other activities which can also be taken up are as follows: demonstration, collection, drawing of diagram and colouring, preparation of models, puzzles, riddles, completion of pictures, action songs, class room display, etc.

These activities are very very useful in cooperative learning because children like them, learn better, learn themselves, some of them develop creativity, leadership and cooperative spirit. But the success of these activities depends upon the interest and devotion of the teacher. They should act as facilitator and encourage learner's active participation and as well as learning by doing.

EVALUATION ENVIRONMENTAL STUDIES II IN CO-OPERATIVE

LEARNING CLASSES

ACTIVITY SHEET

Aim

To consider the ways of evaluating pupils in/after co-operative learning classes.

Activities

1. Considering the cognitive, affective and psychomotor development aspect of pupils, suggest ways of evaluating pupils in/after co-operative learning. Share them with other members of the whole group.

2. In small groups finalize the procedure of continuous and comprehensive evaluation for environmental studies, keeping in mind the competencies.

3. Report your recommendations to the whole group.

Evaluation

1. In the light of these discussions/work, what strategies of evaluation you might suggest ?

2. What support do you seek in implementing these approaches ?

EVALUATION OF ENVIRONMENTAL STUDIES II IN

CO-OPERATIVE LEARNING CLASSES

STUDY MATERIAL

In a co-operative learning set up, i.e. during transaction of lesson the student are evaluated as a group. Individual students learning in that group affect the result of that particular group. They are also evaluated on another important aspect, i.e. how they work together. But usual procedure of evaluation can be followed during and after transaction of lessons in EVS II.

Measuring the outcomes of teaching-learning in Environmental Studies requires a great variety of evaluation techniques. For some purposes, testing devices such as objective tests or essay tests are necessary. But for some other purposes non-testing techniques are used such as rating of social skill, pupil made products, observation of or nature and extent of an individual child's behaviour during selected activities.

The evaluation procedure used by the teacher for environmental studies serves such functions as: i. Providing **feedback** information for the teacher and helping him to decide how effective a given amount of teaching has been. ii. Supplying **diagnostic** information concerning individual pupils. iii. Providing **motivation** for students. As pupils

see progress towards established goals, they can be
motivated for further learning. iv. Affording sound evidence
for differentiating among pupils.

The steps of evaluation are as follows:

i. Defining objectives, i.e., that can be achieved
after teaching-learning of environmental studies.

2. Assigning relative emphasis to objectives.

3. Outlining content

4. Selection of appropriate devices

Continuous and comprehensive evaluation of children
give the important informations which the teachers need.

The techniques such as testing, observation, rating
pupils, recording of activities are generally used for
evaluation of EVS II.

Testing technique

Short answer and objective type of items are
generally used for testing of knowledge in EVS II.

In some of the objective test items pictures can be
used and such items are liked by the primary school
children.

Example 1

— Petals

— Sepals

— Stalk

— Branch
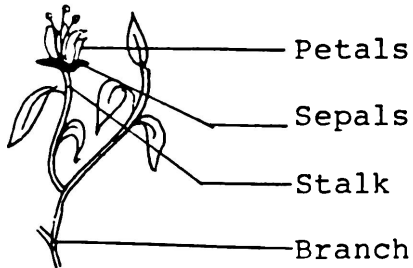
Here is a picture of a flower with the name of some of its parts. Use these names to complete statements about flower

a. Flower is attached to the plant by _____

b. The part which protects flower is called _____

c. Insects get attracted by _____

Example 2

I	II	III	IV
Aeroplane	Doll	Cockroach	Truck
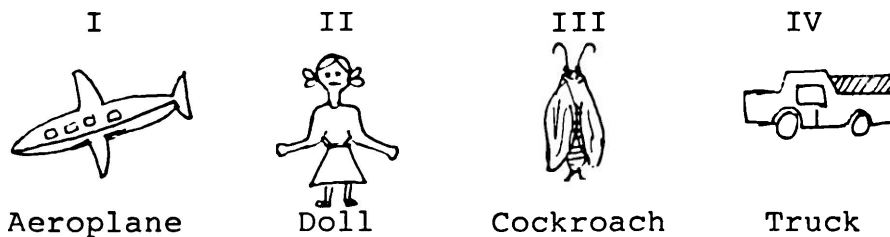
Which of the above picture shows a living thing ?

Non-testing techniques

    -- Observation

    -- Checklist

    -- Rating scale

Observation: During a co-operative learning lesson much of the students activities (specially group behaviour and performance tasks) can be observed and through this the student achievement in content, attitude and social skills can be informally determined, eg. (a) During measurement of

a line by a scale. (b) While dissecting a flower. (c) During construction of models. (d) During class discussion.

Checklist: Checklist can be used during observation of performance tasks or other activities.

eg. (a) When children use scale/thermometer/graduated cylinder, etc. measure length of straight line/temperature of water/volume of water, taking weight in a simple balance.

(b) While drawing diagram, colouring, cutting and pasting, etc.

(c) When children were asked to observe certain animals' behaviour - observing the characteristics of a earthworm (acceptable/non-acceptable behaviour).

Rating scale: For appraising the quality of chart, models, scrap books, projects, discussion, presentation after consolidation or any other activities the rating scales can be used.

Evaluation of non-cognitive areas

The evaluation of non-cognitive areas in EVS II includes attitude, interest, appreciation and psychomotor skills of students.

Some of the aspects which are to be taken into consideration while assessing attitude should be showing the characteristics such as curiosity, openness, precision, confidence, perseverance, satisfaction, respect for another's ideas, etc.

When we say students are curious about plants, animals or any other object, they show specific behaviours, i.e., express verbally/non-verbally (stare, touch, etc.) a desire to investigate and know more about the object with no prompting by anybody, request for more information from teacher, friends or book, interact with the object and gain more information about it.

To evaluate attitude and interest, the teacher has to record the specific behaviours. Appreciation of students can be evaluated by identifying their non-verbal and verbal behaviours, i.e. facial expression, type of question asked, type of books read by them, etc.

The evaluation of skill aspect involves the physical manipulation of specimens, instruments apparatus or objects. These skills must be performed by the students in order to demonstrate that they have acquired them.

AN OUTLINE OF PROCEDURE OF EVALUATION OF EVS II IN COOPERATIVE LEARNING

	Domain	Evaluation technique
Cognitive	Knowledge, understanding, application, problem solving ability, creativity	Oral test, short answer test, objective test
	Total (in terms of %)	
	Attitude	Interview, observation
	Interest	schedule, rating scale and
	Appreciation	checklist
	Values	
	Total (in terms of grade)	
Affective	Cooperation	
	Confidence	
	Alertness	- do -
	Leadership	
	Any other	
	Total (in terms of grade)	
	Observation	
	Measurement	
	Experimentation	
	Simple dissection	
Psycho-motor skills	Drawing simple graphs tables, etc. Cutting and pasting, Drawing diagram	- do -
	Preparing models	
	Handling equipments/ apparatus/objects	
	Any other	
	Total (in terms of grade)	
	Overall grade	

TIME TABLE FOR COOPERATIVE LEARNING BASED TRAINING OF TEACHERS FOR TEACHING OF EVS II

	Session I	Session II		Session III	Session IV
1st day	Inauguration	Course expectations and objectives of training program		Concept of cooperative learning: Activity	Cooperative learning:Discussion
2nd day	Characteristics of primary school learner: Activity	Characteristics of primary school learner: Discussion	B	Nature of EVS II: Activity	Nature of EVS II: Discussion
3rd day	Alternative method of teaching in EVS II: Activity	Alternative method of teaching in in EVS II: Discussion	R E A	Development of materials on alternative method of teaching in EVS II: Group work	Nature of EVS II: Discussion
4th day	Demonstration of cooperative learning in EVS II in a single class setting	Demonstration of cooperative learning in EVS II in multigrade setting	K	Planning of lessons based on cooperative learning in EVS II: Group work	Nature of EVS II: Discussion
5th day	Evaluation of EVS II in cooperative learning: Activity	Evaluation of EVS II in cooperative learning: Discussion		Evaluation of EVS II in cooperative learning: Group work	Concluding session

APPENDIX - B

LESSON PLAN: SAMPLE OF DISCUSSION OR STUDY MATERIAL

CLASS: III

SUBJECT: ENVIRONMENTAL STUDIES II

COMPETENCY: 1 AND 2
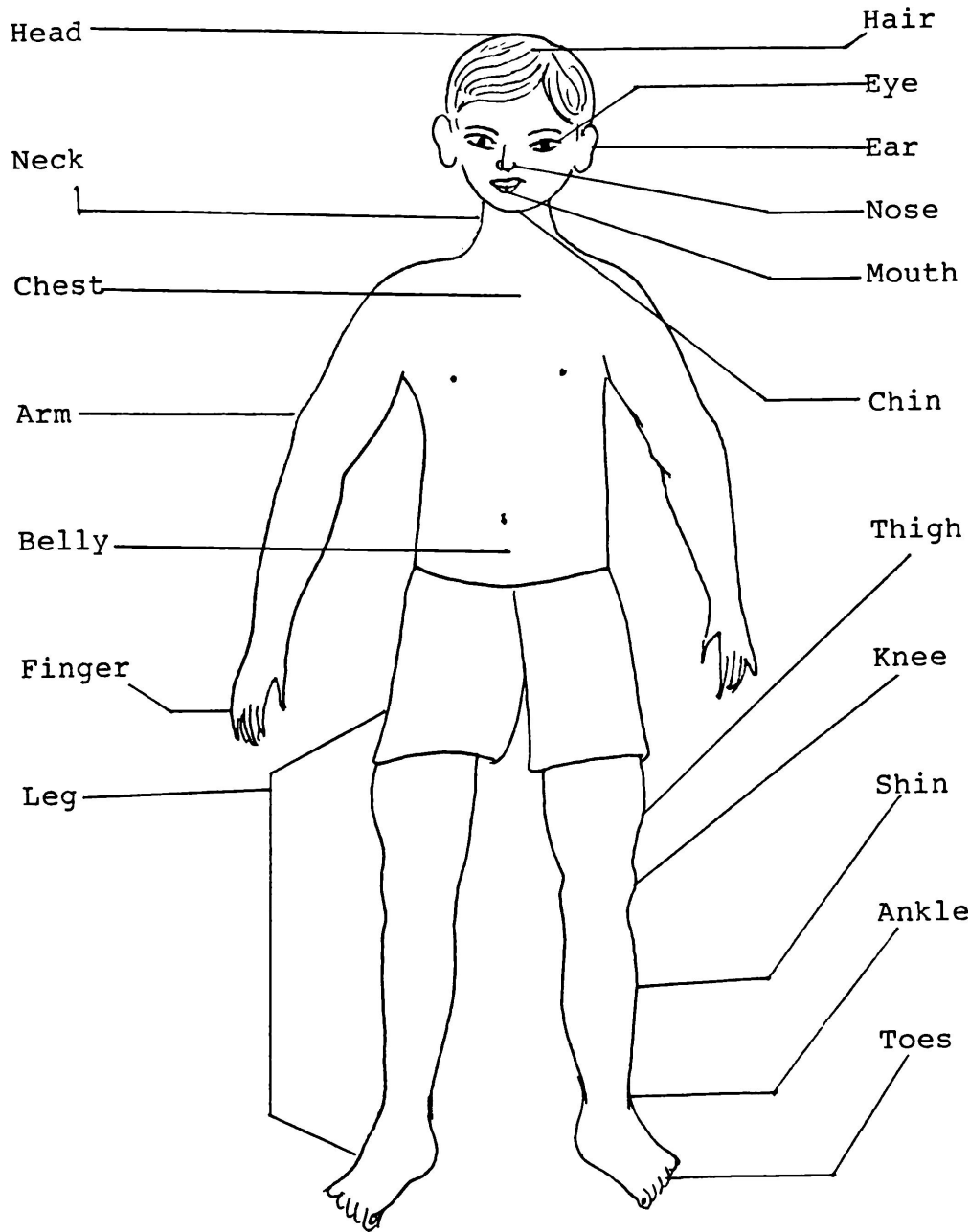
INSTRUCTIONAL OBJECTIVES

To enable the students to:

1. Identify the parts of the body

2. Know the functions of the main parts of the body.

ACTIVITIES

Observe the given figure shown below. Compare the parts given with your own body parts and discuss among yourselves about them. List the different parts of our body and their function in the table given below.

OUR BODY PARTS

Head

Neck

Chest

Arm

Belly

Finger

Leg

Hair

Eye

Ear

Nose

Mouth

Chin

Thigh

Knee

Shin

Ankle

Toes

Sl.No.	Parts of our body	Their functions

Evaluation

1. Tell the names of your body parts.

2. Identify the parts of your body which help you to walk, and stand.

3. Which part of our body helps us in eating and speaking ?