

Draft **Module1.5**



**TEACHING OF  
ENVIRONMENTAL STUDIES  
AT THE PRIMARY STAGE**

## **TEACHING OF ENVIRONMENTAL STUDIES AT THE PRIMARY STAGE**

**Overview:** This module presents a brief about the status of Environmental Studies (EVS) in primary education in India & its importance. It also elaborates upon the teaching –learning approach and learning outcomes of EVS. It provides many examples from EVS textbooks developed by the NCERT linking with the daily life experiences of children.

**This module is suggestive only. Teachers need to create many more examples for different chapters taking care of the environment and backgrounds of children. Teachers need to use the pedagogies which suit the need of children.**

### **Learning Objectives:-**

After going through this module teacher will be able to ----

- Understand the objectives of teaching EVS at the Primary Stage
- Understand the relation between curriculum, syllabus and textbooks and their transaction
- Realize the philosophy which is followed in the NCERT EVS textbook and the approach followed in the chapters and use accordingly
- Reflect on the learning outcomes class wise in EVS
  - Plan, organize, manage classroom processes and provide meaningful learning opportunities for diverse learners within local specific contexts in teaching of EVS.
  - Integrate content, pedagogy and assessment in teaching learning process.

### **Brief Introduction about the Subject area:-**

**Primary education** is the most important stage of education where in the children are introduced to formal set up of schooling and hence it has to be well planned, implemented and assessed to make learning meaningful and joyful experience. The National Curriculum Framework (2005) recommends children's life at school must be linked to their life outside the schools, ensure learning is shifted away from rote methods, facilitate overall development ; with integrated assessment and respecting the identify of each child. At primary stage, development of language competencies and numeracy are given prime importance through concrete experiences.

The **National Curriculum Framework (2005)** views EVS in classes III to V as a subject which integrates the concepts and issues of science (physical, chemical and biological), social studies (history, geography, civics, society, culture etc.) and environment education (protection and conservation). This subject is not there in classes I and II, but the issues and concerns related to it

are meant to be part of language and mathematics. The National Curriculum Framework (NCF)-2005 while placing the child as the constructor of knowledge, emphasizes that curriculum, syllabus and text books should enable the teacher to organize classroom experiences in consonance with the child's nature and environment and providing meaningful learning opportunities for all children.

### **Environmental studies**

EVS at the primary stage envisages exposing children to the real situations in their surroundings to help them connect, be aware of, appreciate and be sensitized towards the prevailing environmental issues. Beginning with the child's immediate surroundings (including natural, physical, social and cultural settings) related to self, home, family and school in the early grades and gradually moving on to the wider environment (neighbourhood and community at large), EVS not only helps children to get acquainted with their own environment but it also strengthens their bond with it. Creating learning situation in the context of children is very crucial to learning EVS. Efforts need to be made to avoid giving direct information, definitions and descriptions and instead create situation for children to construct their own knowledge by interacting first hand with their surroundings and with other children, elders and significant others. During this process they would access various sources of knowledge besides the text book and explore various learning sites besides the classroom.

Real world exposure would lead to opportunities for them to encounter various social issues (such as those of gender bias, marginalization, challenges of the differently-abled (including those of elderly and sick) and natural concern (such as those of protection, preservation, conservation of natural resources). Care may be taken to ensure that besides the resource materials, the classroom environment and pedagogical processes are inclusive that is they cater to the diversity of learners in terms of their abilities, cognitive development, pace, style, etc. In this way an initiative has been taken to establish a strong bond between children and their environment. Thus, this subject enables the children to realize how their decisions and actions affect the environment, builds knowledge and skills necessary to address the challenges of the complex environment. Ultimately, they will learn to keep our mother environment healthy and sustainable for the future.

### **EVS textbooks**

The EVS textbooks are child centered where in there is lot of space for children to explore and learn. There is no place for definitions and mere information in this book. The real challenge is to provide children with opportunities to express, learning by doing, ask questions and experiment.

The language used in the book is not formal but hat spoken by children. Children see a page of a book as a holistic 'visual text' and not separately as words and illustrations. Pages have been developed keeping this in mind, that the textbook is not only the source of knowledge, but should

support children to construct knowledge through all sources around them, such as people, their environment, newspaper etc.

The chapters in the text books contain real life incidents, every challenges and life contemporary issues-related to petrol, fuel, water, forests, protection of animals, pollution etc. There are ample opportunities for children to freely debate, engage with and develop a sensitive understanding about these. The writing team views not just children but teachers too as people who construct knowledge and expand their experiences. Thus teacher also need to use this book as a teaching-learning resources.

The syllabus of EVS consists of six themes – (1) Family and friends, which consists of four subthemes – (1.1) relationships (1.2) work and play, (1.3) animals and (1.4) Plants. Others are– (2) food, (3)Water; (4) Shelter; (5) Travel and (6) Things we make and do.

An attempt has been made to develop a deep and inter-related understanding of each theme in NCERT syllabus. Each theme begins with key questions in a language suitable for children. The whole syllabus is available in the NCERT website for children. Imparting mere formal knowledge is not the purpose of the book. Every idea and concept has been given through activities and discourses to attract their curiosity and generate interest.

### **Curricular expectations:-**

As per the EVS curriculum, children at the Primary Stage are expected to:

- Acquire awareness about immediate / wider surroundings through lived experiences on various themes related to daily life e.g., family, plants, animals, food, water, travel and shelter.
- Nurture natural curiosity and creativity for the immediate surroundings.
- Develop various processes/ skills e.g., observation, discussion, explanation, experimentation, logical reasoning through interaction with immediate surroundings.
- Develop sensitivity for the natural, physical and human resources in the immediate environment.
- Point out and raise issues related to equality, justice and respect for human dignity and rights.

### **Learning Outcomes inEVS**

Learning outcomes are statements that tells about the knowledge or skills children should gain by the end of a particular class or course and helps the teachers to understand why that knowledge and those skills will be useful to the students. They are the statements which are process based which provide the check points that are measurable in a qualitative or quantitative manner to assess the progress of a child as per expected holistic learning for the overall development of a child.

At the Primary Level (for e.g., Class III) it is expected of the students that after studying EVS

### The Learners-

- Identify simple observable features (e.g., shape, colour texture, aroma, where they grow) of leaves, trunk, flowers, roots, fruits and bark of plants in immediate surroundings.
- Identify simple features( as for example, movement, at places found/ kept, eating habits ,sounds, beaks/teeth, claws, ears of animals and birds) in the immediate surroundings
- Identify relationship with and among family members and in extended family
- Identifies objects, signs (vessels, stoves, transport, means of communication, signboard etc); places (types of houses /shelters, bus stand, petrol pump etc); activities(works-people do cooking processes, etc) at home/schools/neighbourhood, directions, locations of objects/places in simple maps
- Describe need of food for people of different age groups: animals and birds, availability of food and water and use of water at home and surroundings
- Describe roles of family members, family influences(traits/features/habits/practices), need for living together through oral /written/other ways
- Groups objects, birds, animals, features, activities according to differences / similarities using different senses.
- Differentiates between objects and activities or past and present
- Guesses (properties, conditions of phenomena), estimate spatial quantities (distance, area, volume, weight etc.) and time in simple standard units and verifies using simple tools/set ups ( e.g., floating and sinking/mixing/evaporation/germination/spoilage/breathing/taste)
- Records observations, experiences , information on objects/activities/places visited in different ways and predicts patterns
- Creates drawings, designs, models, maps, poems and slogans
- Observes rules of a games and other collective tasks
- Voices opinion on good/bad touch, stereotypes
- Shows sensitivity for plants, animals and other organisms and diverse family setups in surroundings

### Suggested pedagogical practices for achieving the learning outcomes:-

There is no one specific approach to achieve each learning out come. In order to attain the learning outcomes, the learners have to be provided with opportunities to work in pairs, groups, individually and are to be encouraged to observe and explore the immediate surroundings; record and express them in oral/written/drawings/gestures. Allow the students to discuss with elders

& visit different places, collect information from them on the topic of their choice and discuss the findings in the groups.

The children are to be encouraged to ask and frame questions and respond to the peers and elders without any fear and hesitation.

Various pedagogical approaches including Constructivist approach, cooperative learning, concept mapping, ICT-integration, project method etc. will be used for transaction of the chapters along with in-built assessment. Activities have to be planned, implemented and assessed systematically. Assessment has to be inbuilt part of teaching learning process.

### **Exemplar 1:**

#### **Class V**

#### **Chapter: Experiments with Water**

**Key concepts:** Floating and sinking; solubility and insolubility; evaporation and condensation

#### **Introduction:**

Teacher narrates an incident of cooking luchi (puri) and aloo dom (aloo ki sabji) at home. Students experience their mother to cook luchi at home. They have noticed that as the rolled out luchi goes to the oil, it goes directly to the bottom of the oil, but as it puffed up luchi comes up of the oil.

#### **Learning outcomes to be achieved through the theme/chapter of water**

- ❖ Classify materials on the basis of their properties of floating or sinking, solubility or insolubility
- ❖ Give simple reasons for floating or sinking, why things get dissolved or remain undissolved.
- ❖ Explain processes or phenomena (for example, how conditions of floating or sinking change in salty water etc.)
- ❖ Conduct simple experiments to find out what objects dissolve in water (sugar, salt dissolve in water and chalk remain undissolved)
- ❖ Verify the process of evaporation using simple tools like heating water in a kettle to show evaporation

#### **Pedagogical practices**

#### **Activity 1: Reciting poem and listing things**

**Objective:** Identifying and Listing of objects

**Materials required:** pen, paper.

#### **Procedure:**

Students will read the poem from the textbook on floating and sinking and make a list of things which float or sink from the poem.

**Assessment:**

**Tr: Q1.** Which objects do you think heavy in the poem?

**Q2.** Which objects do you think light?

**Activity 2: Grouping of materials**

**Objective:** Classify materials on the basis of their properties of floating or sinking,

Materials Required: objects that float and sink;

**Procedure:**

Groups are made of five friends. Each group is given a big pot filled with water and the things listed below –

Empty bowl, empty plastic bottle, empty glass bottle, iron nail, cotton ball, a piece of paper, dry leaves, A piece of wood, an orange, a pencil, hibiscus flower, a piece of stone, paper plate ,aluminum foil open and spread out and press tightly in a ball

Students are asked to drop each object in the water and fill in the given table.

Object			Things sink	Things float
	Float	Sink		

**Assessment:**

**Tr:**group the things which float and which sink in the water.

**Activity 4: things float in the salty water**

**Objectives:**Record observation of salty water makes things floating

**Materials required:** lemon, salt, a glass of water

**Procedure:**

Take some water on a glass. Put a lemon in it. Now keep on putting salt little by little in the water such as half a spoon at a time and observe whether the lemon floats.Note down the observation in your notebook.

**Tr:** why do you think things float in salty water?

St: water becomes thick and heavier than the objects when salty

**Activity 5:** things are soluble and insoluble

**Objectives:** Group materials which dissolve in water and which remains undissolved

**Materials required:** salt, sugar, chalk powder, oil, 5 glasses of water

**Procedure:** Make 5 groups, each group will be supplied with the following things -

A teaspoon of salt and sugar, chalk powder, one spoon of mustard oil and five glasses with some amount of water in them. Students will dissolve one thing in one glass. Observe what happens and note down in the following table

<u>Things</u>	<u>Things that dissolve</u>	<u>Things that do not dissolve</u>	<u>What happens after 2 min.</u>

**Assessment:**

**Tr:** why do you think things dissolve in the water?

**Activity 6:** evaporation and condensation

**Objectives:** explain the process of evaporation and condensation

**Materials required:** a kettle, heater, a glass plate

**Procedure:**

A simple experiment will be conducted by the teacher in the class –

Heat a kettle of water and boil it, as smoke comes out through the nozzle of the kettle hold on a cold plate near it. Students will be asked

1. What happens when water boils? (Phenomenon of evaporation)
2. What happens when the cold plate is held in front of the smoke (condensation?)

**Perspective of in built assessment:** Students will be asked questions while performing activities like they will be asked to-

- Make a list of things other than the things they have already worked with from their surroundings which float or sink
- Tell possible reasons behind sinking and floating (thick or thin, heavy or light)



- Write down the names of objects which dissolve in water and why do they dissolve.
- Give a project to make a paper boat and drop it in the water. Note down the observation. They will be asked to float another paper boat making holes in it. Note down the observation. Write why do you think this has happened?

**Diversity in Tripura perspective:**

There will be no change in the concept but only there will be slightly change in the names of the materials used. Local poems related to floating or sinking may be used.

**Exercises:**

**Fill in the gaps**

I think this is happened because.....(open ended)

**How to deal with children with special needs:**

- 1) Try to involve children with special needs in the ongoing activity and also giving him a role

For example,some materials which make sound will be given to the learner who cannot see to perform the activities; Care need to be of the learners who work little slowly due to physical disabilities etc

**How to deal with multilingualism:**

Encourage children to interact with each other in their mother tongue so that they can pick up the languagethey have to work with.

**Exemplar 2**

**Class – IV**

**Chapter-5 (Anita and Honey Bees)**

**Key Concepts: Insects, Bee Keeping, Honey, Soldier ants**

**Introduction of the chapter:**

In this chapter, story of a girl named Anita has been discussed. Anita is from Bihar and she faced gender discrimination in her family .After completing class VIII she joined a course on bee keeping which was run by Government. And after that she started bee keeping herself to meet the financial needs for continuing her studies.

For linking the pupils' prior knowledge with the new topic, teacher may ask them to make a list of insects which they have seen in different places i.e, in their house, garden, school, play ground, paddy field etc.

Name of insects	Place where it was seen
Ant	-----
Fly	-----
Cockroach	-----
Mosquito	
Grasshopper	
Butterfly	
Bed bug	
Honey bee	

### Learning outcomes of the chapter with pedagogy:

The Learner-

1. Appreciate the struggle of Anita's life and her dream to be educated.
2. Voices opinion on issues of discrimination observed/experienced in family & society on child rights.
3. Discusses about Government schemes and provisions which facilitate the study of children
4. Explain social or group behavior of ants and bees
5. Describes the practices of bee keeping
6. Develop interest in bee keeping

### Pedagogical practices:

The teacher may ask the students to write few lines about their family and their aim in life. After that she may narrate the story of Anita to the class. The structure of bee can be taught by using pictures and showing videos.

**Activity1-** Field visit to a farm

**Objective:** describe the practices of bee keeping

For giving a clear idea of bee and bee keeping, teacher may arrange for a field visit to a farm having bee cultures. Pupils will be divided in small groups and they will be provided with observation sheets in which they record their observations.

### Observation sheet

Observation list	Tick the correct alternatives
1. Box is made up of-	Steel/wood

2. No .of box found in the farm	10/15
3. For feeding the bees which one is used-	Salt syrup/sugar syrup
4. Bee collect nectar from-	Leaf/flower
5. Bees Defense themselves by-	Biting/stinging

In the next class findings of all the groups will be summarize. While visiting the farms students will be shown the structure of bee keeping box, how the bees remain within the box .they will also observe the honey collecting procedures. At the end the students will be asked to describe the structure of bee and describe the bee keeping practices.

### Activity 2: Debate

Objective: develop a positive attitude towards gender equality

The teacher may arrange a debate in the class where in the students are encouraged to put their ideas across the group from both sides. A group of students will be selected and prepared to say in favor of gender equality. And another group will say against gender equality. Remaining students will be as spectator/viewer of the debate.

After presentation of both the groups, the teachers will summarize and express his view over the topic gender discrimination.

### Activity 3: Survey

Objective: Discusses about Government schemes and provisions which facilitate the study of children

Students will be given survey sheet prepared by teachers and they will collect information from their neighbourhood after that they will submit the sheets

### Survey sheet

Q.1.) What Government schemes are there for children to facilitate their study?

Q.2.) Is there any schemes specially for girls to help the continuing their studies?

After collecting data, the teacher facilitates the process of analysis, interpreting and inferring. The teacher summarises the findings to the class.

### In built Assessment: In each and every activity there is a scope of evaluation

Teacher may ask the pupils to make of the functions of the different types of bee. It is as follows-

Type of bee	Function
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<ol style="list-style-type: none"> <li>1. Queen</li> <li>2. Worker</li> <li>3. Male bee</li> </ol>	

Students may also be asked to make a list of the similarities between the bee and ant.

**Diversity (in Tripura context):**

“Apiculture” as a concept will not have diversity in Tripura context. As bee keeping is possible in Tripura environment students be made interested to do bee keeping

**During field visit and other activity CWSN need to be taken special care.**

**Exemplar -3**

**Class –III**

**Chapter – 13: Sharing Our Feelings**

**Key Concept:** Sense Organ (Visual Impairment), Concept of Braille system, Relationship among family

**Introduction to the chapter:** This chapter has been in the form of a story and has been discussed about the problem of Visual Impairment and how we can share our feelings among our family members through our senses and also at the end of the chapter the concept of Braille System has been discussed

**Pedagogical practices:** Teacher may narrate the story to the students and then she/he may ask question based on the story

**Narration:(Summary) :**The story start with a girl named Seema ,who is always ready to share her news /feelings after coming to the home from school to her family member. The narrator and her Nani has nice bonding always ,her story and news were listened by her nani but now a days she fail to hear or see. she is having problem of hearing and vision. Her grandfather always read newspaper aloud for her nani .There is one more character named Rahul Bhaiya who is the elder brother of the narrator .Her elder brother is also having the problem of Vision defects ,he is always holding stick to his hand while going outside to his college.He reads by running his finger on the raised dots. Bhaiya not only recognizes her but all the family members from the sound we make. Finally seema was in the football team and share her news with her bhaiya,she wants her brother to be her coach.

Ask the students:

1. Can you tell me which are the characters given in the story?
2. Which character is very important in this story?

3. Why grandfather read newspaper aloud?
4. How does Ravi bhaiya come to know so many things without seeing?
5. Have you ever needed a stick? When?

What students will do:

Students will try to give their answer at their own level

Next Teacher will explain the summary of the story and the problem faced by the Nani.

**Learning Outcomes to be achieved:**

1. Students will be able to identify various characters
2. Students will be able to identify the relationship among the family member
3. Students will be able to identify means of communicating /sharing feelings
4. Students will be able to record observation/experiences related to the problem of hearing and vision
5. Students will be able to get the knowledge of Braille System

**In Built Activities using learner centered approach:**

Sub Concept 1: Sense Organ( Hearing & Visual Impairment)

Teacher can involve students to perform the following activity to show how our senses works:

**Activity 1:** Dumb charades

Teacher will arrange the class and inform the students that we are going to play the game of dumb charades( one students represent the words and phrases in pantomime and it is guessed by the other students of the another group), after the game.

Ask the students:

1. What is dumb charades?
2. How you came to answer the words and phrases?
3. Is there any senses required to identify the words?
4. What kind of difficulty you find in answering the words?

Sub Concept 2: Concept of Braille system

Teacher will ask students whether they have in a situation where he has to identify something without looking at it.

Teacher will select four students one from CWSN group and start the following activity

**Activity 2:** Blindfolding

Illustration of the activity: Blindfold any child in the class and he has to guess who the other child is by touching them

1. How many children could recognize the others by touching?
2. How many children could recognize the other by only by hearing them? Which of easier of two
3. By just smelling can you guess if it is some person close to you or if it is some animal?

### **In built Assessment adopted for this topic:**

#### **Assessment 1**

Match the following

Events	Sense organ/ability which is affected
1. Rahul bhैया always hold a stick in his hand	Taste
2. Grandfather read newspaper aloud for nani	Vision
3. Ravi after eating rasogolla made his face expression beautiful	Speaking
4. Sheela tell news on TV by moving her Hand	Hearing

#### **Assessment No.2:**

Fill in the blanks with the given words:

(computer, Louise Braille ,situation, fingers)

- A) We can understand the problem others by putting ourselves in their.....
- B) Braille is read by running the..... On the raised dots
- C) Braille scripts was invented by.....who was him selves blind
- D) Braille can now also be written using .....

#### **How to deal with children with special needs:**

- Involving CWSN along with other students in both the activity and also assigning role e.g Dyslexia students in the class should also involve in the like blindfolding.
- A Teachers should always try to provide scope to explore his own experience

#### **What issue a Teacher face in multilingualism and how he can deal with it:**

Suppose a Teacher is instructing in English or Bengali and there is one students who failed to understand the terminology ,then as a teacher should use the terms and words in the regional language or local language.

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