

Environmental Studies

Section I

1. Introduction

We start with the voices of parents and teachers of children in government schools who have seen how a change in assessment processes could actually help their children learn better. These are voices from the district of Mallapuram in Kerala where, during the last curriculum renewal effort, special emphasis was placed not only on changing classroom practices but, more importantly, also on the examination procedures. The fact that parents do understand and convincingly demand a more enabling evaluation system shows that any major change must consciously involve them and others in the community, to work together towards a new vision.

1.1 “Should we not Assess their Real Achievements?” Parents Ask

Hameed, the Vice President of the Parent Teachers’ Association of Thanur Block, raises pertinent questions about how children need to be allowed to think for themselves, and how their examinations can give them confidence to do so:

We must first ask ourselves why we take an examination. Earlier every teacher liberally used the red ink pen to throttle children’s expression. Now children are not forced to write ‘for milk’ in response to the question ‘how is a cow useful for us?’ *They can think for themselves.* Now there is no tension during exams. *Children know that the exam is not to penalise them – it tells them what they know, so they are not scared to show their results to their parents.* Parents also do not ask, ‘Why didn’t you get this rank?’ Wherever the School Support Group is active, parents know and understand these issues.

Children are now writing their own poems. In the old system they had to memorise everything. In fact, even if famous poets were today asked to write their own poems, the traditional system would surely cut their marks for some mistake or the other!

Sanskritised words used in science, such as ‘*Ghraangraahi*’ (smell sensors), can not even be pronounced or understood by children. Then why teach these? There is need to change even the Class X board exam because more than half of our children fail in that, but they do better in life. Then what kind of testing is this? Should we not assess their *real* achievements, instead of testing their memorising capacity without any understanding?”

However, owing to pressures from various quarters, as well as vested commercial interests, there was an attempt to revert to the old textbooks and traditional examinations. Parents and teachers, especially those who have seen children from poor families encouraged to think and therefore performing better in primary school, were worried about the sudden change they faced in higher classes. Rajani, a teacher of Class IV, almost broke down while narrating the experiences of her son. Her voice choked and her eyes moistened with tears. She later wrote (in Malayalam) to explain how well her son was developing earlier but was now distressed because of the rote memorisation required for the traditional examination.

My son who has reached Class VIII along with his friends is in great mental strain - just like a housewife, who has been cooking in a modern kitchen with all facilities, would feel on having been suddenly placed in an old-fashioned and ill-equipped kitchen. My son had got used to finding conclusions after doing project activities, composing poems, gathering information through reference work, observing plants, animals, birds and stars, and doing other similar activities. Now the old textbook has come back and also the old system of exams. This has created great mental conflict in him. He does not get opportunities for undertaking interesting activities; neither does he get any time to do this. Inferences are given in the textbook; he has to learn these things by heart. Instead of composing his own lines, he has to memorise long poems that he cannot even comprehend or enjoy. The method of coming to conclusions through observation, comparison and classification has now changed to learning by heart big assumptions, principles and formulae, which have nothing to do with his environment.

Instead of writing a diary, preparing magazines, writing reports based on newspapers, doing experiments, reading books in the library and presenting papers at 'seminars', as he did earlier, he is sitting indoors memorising lessons. Till now he had always got an A grade in these skills but *now none of his skills are tested*. We are worried that this may result in a mental breakdown. His friends are already saying that they are soon going to quit school. Why does my anyone see the mental stress on these children? We are eagerly waiting to get a glimpse of the smiling face of our son and to hear him talk as he did earlier, before he faced this system. *He hates these traditional examinations.*

It is not just Rajani's son who hates traditional examinations, but millions of children in the country who continue to be oppressed by them. In this case the boy had a chance to enjoy an alternative system for the first seven years, which was not only less oppressive but was also stimulating. The new system had helped build his self-esteem and his sense of worth. The sharp contrast was therefore all the more depressing for him.

The growing number of cases of depression, psychological disorders and even suicides, especially around the time of exams, is alarming. Parents are concerned about it and helplessly seek ways to cope with their children's condition. It is not just depression that is a cause for worry but the fact that most children's personalities are getting warped, and their self-confidence is irrevocably eroded. Then why do that we continue to force them to suffer and push them deeper through the grind? Why do we opt for 'painkillers' for our children, in the form of counselling and tuitions, instead of dealing upfront with the pain-causing malady in our own system? We do have alternative ways to assess what they have learnt, and also to motivate them to learn better, through creative systems of evaluation. We need to appreciate how these alternatives actually help children learn *much more* than routine examination questions?

How can examinations be without tension? How is it that parents like Hameed or Rajani, who may not be 'experts' in education, argue so eloquently about assessment procedures that are closely linked to the learning processes in the classroom? What, after all, are the kinds of examinations these parents and teachers have so passionately demanded?

We give three examples taken from the first terminal examination held in primary schools of Mallapuram district (Kerala). These were called 'evaluation activities', to show that examination questions could be made in the form of 'learning activities' being used in

classrooms, and were designed collectively by primary teachers during their academic workshops and meetings.

1.2 Samples of ‘Evaluation Activities’ from the First Term Examination

The First Terminal Evaluation for Class III, conducted by a teacher in a school in Vettilapara (Block Area code), has no printed exam paper. She has written in her own Teacher’s Manual the entire list of activities that she will undertake over the ‘Evaluation Week’. These have been designed by the primary teachers of the schools in the cluster, as part of the Evaluation Cluster Meeting.

There is one ‘evaluation activity’ for each Competency Area that has been specified in the guidelines for each of the subjects viz. of Language, Mathematics and Environmental Studies (EVS). Each ‘question’ or ‘evaluation activity’ begins with a ‘non-evaluatory’ activity, which is thoughtfully designed to make children comfortable and to help them to focus on the specific task.

1.2.1 Your favourite game, its rules and the process

Discussion (non-evaluatory): What games do you play for Onam?

Activity: Write a description of your favourite game, giving the rules, the number of people and the process of playing.

A child named Dijo, from a low-income family, writes in Malayalam a full page, titled ‘*Kule Kule Munderi*’ (Bunches and Bunches of Grapes). Only a part of it has been translated here:

“This game has no restriction on the number of people. One among the group picks up any object like a small branch of a plant. Others sit in a circle. The child who has the branch goes around the group saying ‘Kule Kule Munderi’. The others say ‘Nire Nire Mundwa’ (Bring Bring More). The child quietly keeps the branch behind someone. Then pretending that it is still in his hand, he goes around saying ‘Kule Kule Munderi’”

Dijo’s handwriting is clear and confident, with no scribbles, and there is one instance where the word ‘kutti’ is carelessly spelt, though it is correctly written at every other place. Different evaluation ‘activities’ require him to write in different styles and it is clear that he understands the difference in the stylistic requirements of writing a fantasy, the rules of a game, a historical piece or the tabulation of scientific information.

As we will discuss in later sections, many oral and written exercises need to be undertaken in the EVS classroom. Teachers can use the NCERT (2006 and 2007) textbooks for several such examples through which children learn different styles of reporting, analysis and expression. For instance, the following exercise on the ‘rules of games’ from Chapter 10 of the Class IV EVS textbook (NCERT, 2007) encourages children to relate the story on *Kabaddi* to the other games they play.

- ❖ Every game has some rules. Let us see what happens if the rules are changed. For example in cricket, a batsman gets 'out', if the balls fall off the stumps. Imagine if there is a rule that the entire team will be 'out', if all the three stumps fall. Wouldn't that be fun!
- ❖ Try and play the game with this rule. Similarly make some rules for other games and play.
- ❖ In *kho-kho* you get 'out' when someone touches you. You also get your turn by someone's touch. Name some games in which it is very important to touch the players.
- ❖ In *Kabaddi* the entire team was 'out', because Shyamala had touched the line. What are some other games in which the central line is very important?

1.2.2 Analysis and Inference: What kinds of cooked food did you eat?

Non-Evaluatory Activity: Begin with children singing a song on food items.

Evaluation Activity: List all the kinds of foods you have eaten in the last week. Use the table given below for analysis. Now describe which kind of food items you ate the most.

Table

| Name of the food item | Prepared with oil | Cooked using steam | Boiled |
|-----------------------|-------------------|--------------------|--------|
| | | | |
| | | | |
| | | | |

Grading Indicators

- A - Student identifies the issue herself and comes to a conclusion
- B - The issue is analysed but the inference is not correct
- C - The teacher needs to give clues for analysis and inference

1.3 How did we 'Feel' as Learners? Who are 'Good' Learners?

Many readers would probably find the following experience uncomfortably familiar. One of the team members of this report remembers her own fear of examinations and classroom questions:

I remember feeling very confused about many questions in science and mathematics. It is not that I did not have any brains. But I found that my teacher and friends were moving too fast. I wanted to ask many questions – small, 'stupid' questions. Actually questions are questions – when asked genuinely and with thought – but I somehow felt 'stupid' in asking them. The thought of getting crosses and zeroes, frightened and shamed me. The thought of cheating from friends, or just giving any random answer with the hope that the answer would be correct, came to me every now and then. That would have been stupid. But I am glad my parents were ready to work things out slowly with me. I could ask them anything and not feel scared to be stupid. The time they spent with me helped me collect myself and apply my mind to science and not give up or become actually truly stupid.

What about you? What do you recollect of yourself as a LEARNER? What gave you the courage to learn and what pulled you back? Did assessment at school help you to improve your learning? Don't you think most of us waste a lot of our effort just coping with the impact that assessment has on us – the anxiety, the helplessness, and the feeling of demotivation? On the other hand, do those who assess us spend the necessary amount of

effort to learn about *our learning*? Without learning about our learning, how can there be any further learning, theirs and ours, and how can there be an assessment of learning?

Studies have been conducted across the world to understand what is meant by ‘good’ learning, and how schools manage to achieve a ‘culture of success’, even among students who face disadvantage or adverse conditions at home. PISA (OECD, 2003) and other international assessments have shown that students perform better when they feel confident and motivated and have a high sense of self worth. Those students who do not perform well in a subject, say, science or maths, also feel they are ‘not good enough’, and owing to their lack of motivation they give up easily without persisting in answering questions or examinations. These studies again show that ‘cognition’ and ‘affection’ are not necessarily separable, as has been traditionally thought.

Those schools are considered ‘outstanding’ that actually *add value* to children’s knowledge and learning, not just those that select already advantaged children with educated and affluent parents. A study of schools that achieved outstanding results in seven Latin American countries (UNESCO, 2002), to understand what policies help ‘quality and equality in learning’, showed that performance was highest in schools where there was affection, respect, confidence, a sense of collectivity and a special relationship with children. Mistakes in such ‘outstanding’ schools are seen as learning tools, rather than a chance to label students as ‘weak’; students review the ‘why?’ and ‘how?’ of an error to themselves seek alternatives. Importantly, it has been seen that teachers of such schools have high expectations from *all* their students, and spend more effort on those who have difficulty in learning a particular thing.

The examination pattern is crucial to what goes on in class, and to a large extent determines and delimits what children will be allowed to learn. Indeed, by changing the evaluation systems we can, in turn, ensure that the range of abilities sought to be assessed is enlarged and thus the teaching learning process also changes.

1.4 An Overview of the Chapter

This chapter at how we can move towards a new system of assessment of children’s learning, both at the classroom level and also for designing more suitable tasks for the examination. Examples of such examination tasks (from Kerala) are given in Section 1.2. Moreover, voices of parents quoted in Section 1.1 show that if we involve them and the community to observe how and what children learn, we will get their support to develop a better system for assessing and reporting children’s progress at school.

Section II shows how children’s understanding of concepts in EVS develops, and also discusses how they cannot understand some concepts because we have been teaching them too early. We see that a teacher of Class III demonstrates an experiment on ‘air and combustion’ (Section 2.1), but children at that age cannot make the connections she expects them to. Similarly, we take examples of concepts such as the ‘water cycle’ or ‘governance’ to show what they do not understand. In a more detailed analysis (Section 2.4) of ‘maps’, a crucial area we have long neglected, we see that 13 year old children too find it difficult to properly use and draw maps they may need in everyday life. Conceptual understanding of maps develops gradually over the years and draws upon many areas of learning. It needs the child’s consistent engagement with how real objects look different from different perspectives, how solid (3 Dimensional) objects can be represented on paper (2 Dimensional)

using abstract symbols, and an understanding of relative size and positions. Mapping is an area that needs to be dealt with both in EVS and Mathematics. The new NCERT syllabus (2006) takes this into account and ensures that the textbooks give a sufficient number of creative exercises to help develop a better understanding of maps. Sections 2.5-2.7 give an idea of the changes in the new syllabus, and gives details of its broad themes, which provide an integrated view of science, social studies and environmental education. The NCF 2005 calls for such an integrated approach for EVS at the primary level, and demands that schools should help children construct knowledge while drawing upon their diverse living experiences. Section 2.8 gives a **list of indicators** to assess different aspects of children's learning in EVS, which fulfill the aims of teaching EVS, and which can be used by teachers for recording and reporting their progress during the year.

In Section III we look at three EVS classrooms where teachers use different modes of assessment - through field visits, discussions, experiments or oral presentations – to observe and record what and how different children are learning, individually and in groups. We give extracts from teachers' reflective diaries which show how closely they have kept track of different children's progress and problems. We also see how teachers plan small group work so that children can learn from each other, from the questions and doubts of a group member, much better than what they would do on their own.

Section IV gives examples of different modes of assessing children's learning – through a variety of tasks, such as, drawing, acting, picture reading, labelling, projects, surveys, experiments, etc. It shows how even the question and answer format can be changed to allow children to think and express better. It describes how teachers of primary schools are already conducting assessments and examinations using these modes, while they also maintain detailed portfolios of what children have been doing during the year.

Finally, Section V focuses on progress records for reporting students' learning. It critically reviews different formats used by schools and suggests how reporting can help parents understand what their children are learning and what more they can do. Report cards must not hurt the self-esteem of children, but must motivate them for further progress. They should show that the teacher has made personal observations about what the child knows and can do, across the indicators for EVS learning. They must also give an indication of the kinds of activities conducted during period so that parents are informed and can also help provide a supportive environment to children.

Section II

2. How Do Children Understand Concepts in EVS ?

The traditional EVS classroom does not differ much from classrooms of other subjects; children sit passively and 'receive' information from the teacher, which they are expected to memorise. In fact, every class appears to be the same and from the responses of children one can hardly distinguish what is being taught, and also, for that matter, what is learnt! We hardly see children making observations, relating them to their own experiences, engaging in exploratory activities, or classifying objects to comprehend relations. Thus, the purpose of teaching EVS is not realised in most classrooms.

Objectives of Environmental Studies

The present syllabus attempts an integrated perspective for the primary stage of schooling and draws upon insights from sciences, social studies and environmental education. The new EVS syllabus indicates the following objectives of teaching science and social studies at the primary stage:

- to train children to locate and comprehend relationships between the natural, social and cultural environment
- to develop an understanding based on observation and illustration, drawn from lived experiences and physical, biological, social and cultural aspects of life, rather than abstractions
- to create cognitive capacity and resourcefulness to make the child curious about social phenomena, starting with the family and moving on to wider spaces
- to nurture the curiosity and creativity of the child particularly in relation to the natural environment (including artifacts and people)
- to develop an awareness about environmental issues
- to engage the child in exploratory and hands-on activities to acquire basic cognitive and psychomotor skills through observation, classification, inference, etc.
- to emphasise design and fabrication, estimation and measurement as a prelude to the development of technological and quantitative skills at later stages
- to be able to critically address gender concerns and issues of marginalisation and oppression with values of equality and justice, and respect for human dignity and rights

Source – Syllabus for classes at Elementary Level, based on NCF 2005

However, there are some classes where teachers may work hard to demonstrate experiments or even engage children in activities but which still fail in making them understand concepts. The following are scenes from certain classes where much learning did not happen despite a lot of activity and the best efforts of teachers. It is important for us to see and reflect about what goes wrong in these apparently 'active' classrooms.

2.1 Air – Learning that's 'All in the Air'?

Picture Showing

Children and teacher sitting in a circle. The experimental set-up is on a low wooden platform, visible to all children

Preeti is a diligent teacher of Class III in a government school of Delhi. She expects that children will understand a complex concept when they see a demonstration.

Teacher - "What is there around us?"

Students - (*different voices*) "Desk, chair, tree, you, Rashi, Pooja, wall."

Teacher - "No, no. Something which is present but cannot be seen."

Silence children nudge each other and exchange surprised looks. One child speaks in a low voice.

Student - "Fragrance (खुशबू)", (others picking up the cue say) "foul smell "(बदबू)."

Teacher - "Tell me, what do we take in and take out of our nostrils while breathing?"
"Keep your fingers under your nose and feel."

A student - "Breath (साँस)"

Preeti seemed to give up. "Isn't air coming out of your nostrils? THERE IS AIR ALL AROUND US" (in a loud voice)

Students - "Yes Ma'am."

Teacher - "We are going to do some experiments today and learn about the relationship between air and combustion. We will see how air helps in combustion." (आज हम कुछ प्रयोग करेंगे और सीखेंगे कि हवा और जलने के बीच क्या रिश्ता है। हवा कैसे जलने में मदद करती है)

Preeti wants to demonstrate to the children that air is needed for burning and is used up during combustion. She confidently sets up the experiment and draws the children's attention to it. They observe with interest.

Picture Showing
Burning candle extinguishes after a few seconds

Teacher - "Why do you think the candle extinguished after sometime?"

A student - "Because it touched the glass." (क्योंकि वह गिलास से छू गई थी)

Another - "It happened because of the black soot." (कालक की वजह से)

Student - *Preeti encourages others to try.*

A student - "It must be damp. Today I was trying to light the stove, but the matchstick did not light up and my mother said it was damp." (मैं सुबह स्टोव जलाने के लिए माचिस जला रही थी, माचिस जल नहीं पा रही थी, तब माँ ने कहा यह सील गई है।)

Preeti did not give up and added two more glasses to the experimental set up.

Picture Showing - Candles of same size, jars of different sizes Preeti wants to demonstrate to the children that the candle burns for a longer time in the larger glass as there is relatively more air.

Teacher - "In which jar did the candle extinguish first? In which at did it happen last? Why?"

One student - (*responds emphatically*) "The candle extinguished first in the smaller glass and later in the bigger glass BECAUSE IT GETS EXTINGUISHED QUICKLY IN THE SMALLER GLASS." ("मोमबत्ती छोटे गिलास में जल्दी बुझी और बड़े में बाद में क्योंकि मोमबत्ती छोटे गिलास में जल्दी बुझती है")

Teacher - “Why did this happen? The jar has air - think in terms of this and reply.” (“यह क्यों हुआ? जार में हवा है न-इस बारे में सोचकर बताओ”)

Another student - “But in air the candle does get extinguished” (*referring to candles getting blown out by a breeze*). (लेकिन हवा में तो मोमबत्ती बुझ जाती है।)

The classroom discussion clearly did not generate the desired learning outcome despite the best efforts of the teacher. The responses of the children were intelligent and were based on their keen observations and experiences. One child tried to relate her observation with what had happened to her that morning - “the matchstick did not light up and my mother said it was damp.” Their answers however do not tally the scientifically correct explanation which the teacher wants them to infer.

Then what went wrong in this class? Is the concept too abstract for children of this age? What are your experiences on how children think about ‘air’ and other such concepts? Do you think that children in Class III can actually understand these ideas? What are the answers they give in response to the questions you ask them on air?

This teacher failed to take cues from the children's answers that they do not understand the concept and it is too complex for their age. Some common responses of how children think about air are given below:

Class II children

Air comes when the fan moves.

जब पंखा चलता है तो हवा आती है।

Air comes when leaves move.

जब पत्ते हिलते हैं तो हवा आती है।

In this room, the fan is switched off, so there is no air.

इस कमरे में पंखा नहीं चल रहा है तो हवा नहीं है।

Class IV children

Plants give air. Air comes out from inside the plants. Air comes to the room from the windows.

पेड़ पौधे हवा देते हैं। हवा पेड़ों के अंदर से निकलती है। हवा खिड़कियों में से अंदर आती है।

If you put a glass upside down in a bucket, the bubbles come out.

गिलास उलटा करके बाल्टी में डालने से बुलबुले निकलते हैं।

Class VI children

When the wind blows, the leaves move.

हवा चलती है तो पत्ते हिलते हैं।

Because air is present all round, it must have entered the open glass.

क्योंकि हवा हर तरफ होती है इसलिए हवा इस खुले गिलास में भी घुस गई होगी।

When air gathers in one place, it appears heavy, but if it is spread one does not feel its heaviness.

जब हवा एक जगह जमा होती है, तब भारी लगती है, वरना फैलने पर भार पता नहीं चलता।

These responses clearly show that the understanding of children with regard to the concept of air (like all other concepts) is age specific. The Class II children depend on what they see and experience. (When the fan does not move, no air comes). पंखा नहीं चलता तो हवा नहीं आती।). Class IV children have started looking for explanations beyond what they can see - (हवा पेड़ों के अंदर से निकलती है) They still do not relate to the idea of air occupying all the available space, (खिड़कियों में से हवा अंदर आती है) which the Class VI children seem to have started engaging with. (क्योंकि हवा हर तरफ होती है, इसलिए हवा इस खुले गिलास में भी घुस गई होगी). These (Class VI children) are now at a stage when if their experiences are enlarged with planned activities, their ideas about air can be strengthened.

In the light of these responses if we analyse Preeti's class we can see that she took up a concept that the children of this age (Class III) cannot understand as they have not yet begun to think that an empty glass is full of air. If we adults did not have the previous knowledge that oxygen is used up during the process of combustion or is a supporter of combustion we too would not have understood the reason for the candle extinguishing after some time.

Readers to Reflect:

What do you think about the traditional questions on 'air' found in primary textbooks? Do you think children can understand and answer the following?

1. Write three properties of air.
2. What is air made of?
3. What is the effect of the following activities on air?
 - Burning of wood
 - Movement of vehicles on road
 - Planting of trees.

What kinds of questions do you think we can ask children at different stages of primary school to help them understand about air and what observations can they make?

2.2 Water Cycle

The following excerpt, on the 'water cycle' in "Let's look around and learn" the EVS textbook formerly used for Class III (NCERT, 2002) shows that though the language might look deceptively simple each word is heavily loaded with abstract concepts.

Lesson 5 : Journey of Water

"The sea is my home. I have smaller homes also like ponds and lakes. When I get heated by the hot rays of the Sun, I change into 'water vapour'. Vapour is my 'gaseous' form....

Now I start moving upwards as I become very light. There are many tiny particles of dust and smoke in the air above. When I come in contact with these particles the vapours get cooled. I now take the form of small 'droplets'. These droplets keep 'floating' in the air.

When the droplets come closer to each other they take the shape of the clouds. When the drops become heavier, I come back to the earth in the form of rain." (p.40-41)

It may seem like a story but it deals with concepts which children do not understand, and only compels teachers to assume that 'gaseous form', 'water vapour', evaporation, condensation, change of state of water, etc. can be dealt with at this stage. It is important for teachers to value their own experiences regarding children's learning and use assessment exercises to give space to children's ideas. If they repeat memorised responses, it only creates an illusion that they have understood the idea. Moreover, to understand that vapour moves upwards the child needs to understand 'density' of cold and hot air, to reason why hot air rises and so on.

Readers to Reflect:

Do you think concepts like 'density' or 'condensation' can be understood by children of this age? How do we expect them to think about convection of 'water vapour', which they do not observe? Indeed, even after seeing a classroom demonstration of evaporation of water heated in a bowl, children aged 7-8 years had this to say:

"Water has disappeared."

(पानी गायब हो गया।)

"The bowl has absorbed the water."

(कटोरी ने पानी चूस लिया।)

"The fire drank the water."

(आग ने पानी पी लिया।)

"Water has changed into air."

(पानी हवा बन गया।)

What do you think about these responses of children? How and at which stage do you think should the 'water cycle' be introduced in school?

There is a lot of research being conducted across the world on what children think about matter and the particles that a substance is made of. For instance, a major study in New Zealand (Osborne and Cosgrove, *Journal of Research in Science Teaching*, 20 (9), p 825-838, 1983) found that forty five per cent children at 15 years said that when a washed plate dried up, the 'water changed into oxygen and hydrogen in the air' while ten per cent said 'the water did not exist as anything', and only forty five per cent chose the correct option that 'the water goes into the air as small bits of water'. By the age 16 about seventy per cent moved towards the correct response but twenty five per cent still held the 'water changed into oxygen and hydrogen' theory, while about five per cent still felt water did not exist as anything. Notice that even the question asked in the study does not use terms like 'evaporate' but instead uses words closer to children's language, such as 'small bits of water'. Then why do we force terms and concepts on children at a much younger age, when we know they are not yet ready to understand them?

2.3 How Do We Govern Ourselves? A Good Question, Indeed!

The NCF-2005 has reviewed the teaching of the area of social science traditionally called 'civics' and even changed its name to Social and Political Life. The colonial idea of teaching children to be 'good', obedient citizens, who need to know how to be governed, but do not develop a more critical understanding of the social and political realities of their lives, has been abandoned. The traditional teaching of 'government formation' or the Constitution to

young children is boring and meaningless, with all kinds of facts about processes, which are too complex and far removed from them.

What We Teach

Let us look at what we routinely teach, what students learn and what we evaluate about the notion of governance. For example, the passages from “Let's look around and learn” - EVS Textbook for Class V (NCERT, 2004) seem to be quite disconnected with the way children even in Class VIII think about these concepts.

Lesson 16: How Do We Govern Ourselves Union Government

...According to our Constitution, the whole power lies in the hands of the people. General Elections are held after every five years in which people elect their representatives...For elections to the Lok Sabha, the whole country has been divided into electoral constituencies. In every constituency, more than one candidate can contest. These candidates can be representatives of any political party or can even be independent candidates...

State Government

...Every State also has a government. The process of formation of State Government starts with elections to the Legislative Assembly...The Council of Ministers under the leadership of the Chief Minister of the State assists the Governor in taking care of the State affairs. In each State the number of the members of the Legislative Assembly is decided according to the population in the State...

Lok Sabha

...The majority group in the Lok Sabha elects its leader. The President appoints the leader of the majority group as the Prime Minister. If one group does not have the majority, a number of groups can get together to form the majority....The Union Cabinet is constituted under the leadership of the Prime Minister. The whole administration is run under the control of the Cabinet. The ministers in the Cabinet are taken from both the Houses."(p. 196)...

What they learn

Discussions with some children studying in Class VIII in a rural school show that even at the age of 14 years of age, they understand this concept in the following ways:

"Tell us : how does someone become a Prime Minister?"

"The people vote.

"Then?"

"When both sides are equal, the President will vote. The President will select a person from amongst them and make the person Prime Minister....."

"Can you tell us what Parliament is?"

"It makes laws and corrects mistakes."

"The 500 odd people who are members of the Parliament have all won elections to reach there. Do they all belong to one party or to different parties?"

"One party."

"All 500 of them?"

"Yes."

"At present which party do the members of Parliament belong to?"

"Congress"

"All of them?"

"Yes"

“All right, how did the President choose the Prime Minister from these 500 members?”
“These 500 people cast their vote.”

Discussion with another child aged 14 years:

“Who all are in the government, can you tell?”

Silence

“Okay – have you heard of the CM? Who is a CM?”

Silence

“Where is a State Government located? Where is its capital?”

Silence

“All right – which government is the bigger government – the Central Government or the State Government?”

“Central Government.”

“That’s good. Why is it bigger?”

“Because it is the government of the Centre.”

“Where is the Centre? Where does the Central Government work?”

Silence

“Which government sits in Delhi?”

“State Government.”

“Okay – tell us who is the PM at present. How did he become the PM?.”

“Through the Lok Sabha and the Rajya Sabha.”

“Okay – but can you explain how this happened?”

“Someone will vote – someone will say : make this person the PM – someone will say no don't make. If more than half say that he can be the PM, then he will become.”

“Fine. Tell us, who all are there in the Lok Sabha? Do they all belong to one party?”

“Yes – they do.”

What we ask to evaluate their learning!

Many adults, even many among us, perhaps would not be able to answer the usual questions asked in primary school:

- What is common in the election of the PM of India and the CM of a State?
- Who does the President appoint as the Prime Minister?
- Who can be appointed as ministers in the cabinet? (EVS textbook for Class V NCERT, 2003, p.198)

Readers to Reflect:

Why do we ask such questions and what learning do we expect to assess through these? The discussions quoted here were with children in Class VIII - older, more aware and better read than primary children. Can you appreciate the situation of much younger children in Class V in dealing with the ideas and information related to the formation and functioning of the government? Conversations with children help us see the evolving and struggling thoughts of children. We realise that ideas such as 'political parties' 'majority party' and the making of a Prime Minister are vaguely developed in their minds.

To fully develop their learning potential - the ability to deduce, to synthesise different kinds of information, to put together a coherent picture, to analyse and check the inconsistency in a line of reasoning, to trigger their interest and direct their curiosity towards real events around them – they need to be encouraged and supported much more. Moreover, the choice of

‘content’ must take into account possible ways of teaching in schools, that are related to the experiences and intuitive concepts at that age. The new NCERT syllabus has been developed in the light of all this.

2.4 How do children understand maps?

Children in primary school begin to form their own ideas about the organisation of space and its use, which they can present in their drawings and sketches. This ability can be strengthened by inviting them to draw more and more of what they see and imagine. They will need to be gradually made conscious of how their ‘maps’ will evolve differently from their ‘drawings’: while in drawings they will use their creative imagination and even fantasy to show their own original thinking, in maps they need to develop an ability to understand ‘perspective’ (how something looks when seen from different positions) and how to represent realistic situations through standard conventions. Discussions on what they have drawn will help them understand how we represent ‘far and near’, ‘above and below’, ‘in front and behind’, ‘this side and that side’, ‘big and small’, ‘more and less’, boundaries and units in the two dimensional drawings on paper. It is important that what they draw and discuss should be based on space they can visualise and name in their own way.

It has been observed that young children do not visualise the continuous space of states, countries, continents, the world, in a well developed form. Children need to engage and struggle with these units of ‘space’, their dimensions and relations. For example, a child in Class VI, reading the map of India, paused where the name Rajasthan was written, and wondered if that was also India. When we moved a finger across the international boundary to what is Nepal, and asked, “Are we in India or outside it?” - The child said “We are in India.”. The child put his finger on the boundary between Rajasthan and Madhya Pradesh, thereby touching a little bit both”. “But this is Madhya Pradesh”, we told him. He asked, “Does it not come in Rajasthan?” “No” we said. “Not even a little bit?” he persisted. “No, not even a little bit” we had to confess!

Similarly, in going over the physical map of the country, middle school children (of age 11-15 years) have been seen to trace the course of the river to the coast and then continue tracing it down the coast line and up the coast line in the other direction! ‘Where is land and where is water?’- you may ask them - and as you move your fingers from the land mass to the oceans, asking ‘are we still on land?’, children would go on saying “yes, we are”.

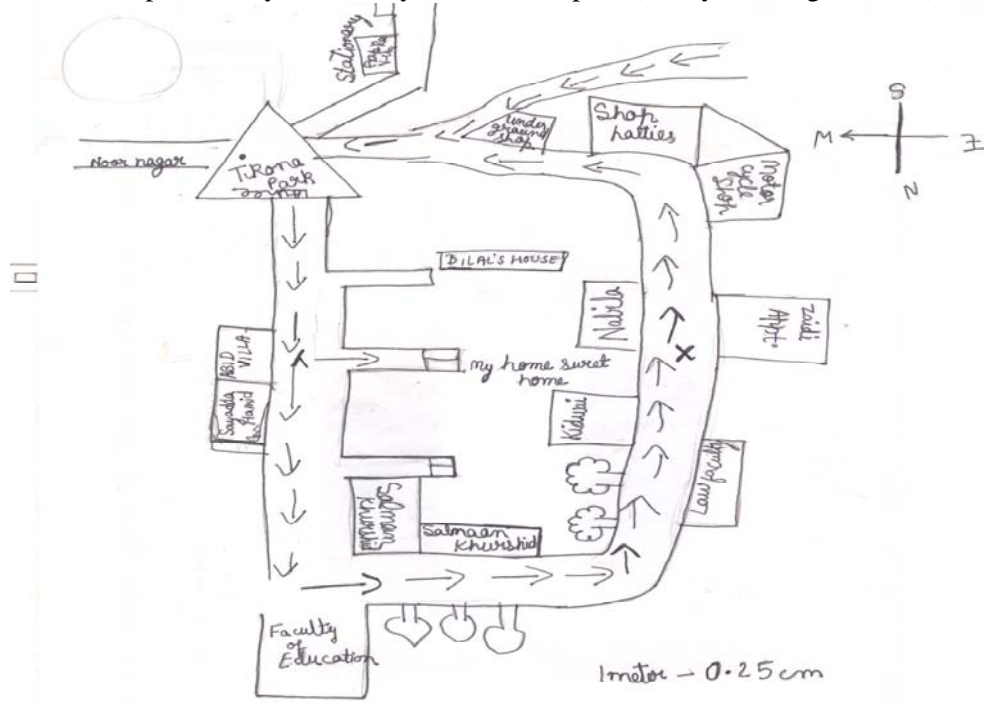
Many such experiences and studies indicate that children need more opportunities to engage concretely with the representation of large spaces on paper, to develop concepts that help them comprehend and use conventional maps. If we force them to only memorise map-based facts for exams, they will not be able, as is the case with most educated adults today, to engage with even the most commonly used road directions or location maps they encounter in everyday life.

As part of this report we had undertaken a discussion and exercises on map making with children of an elementary school living in a residential colony near Jamia Milla Islamia in Delhi. The colony consists of two parallel roads with four by-lanes cutting at right angles. The children were encouraged to use their own symbols and show at least the following landmarks on their map:

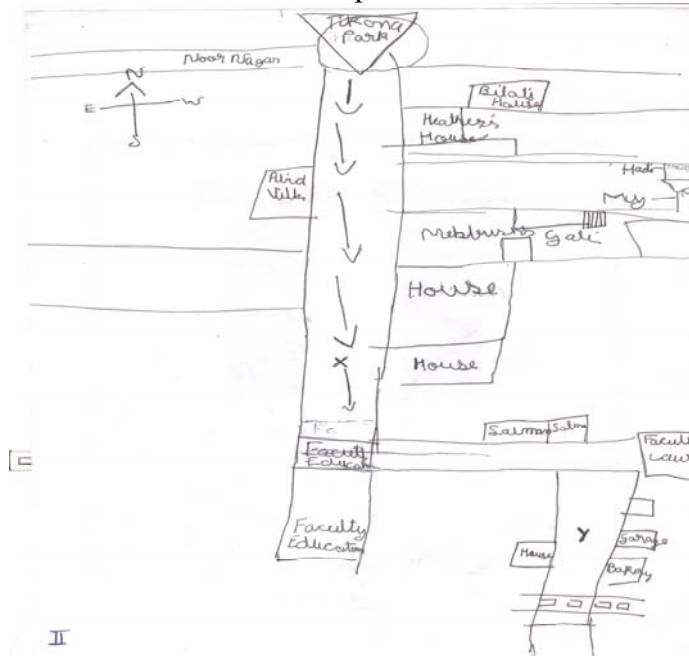
- Their own house
- S.K's house

- Faculty of Education
- Faculty of Law.

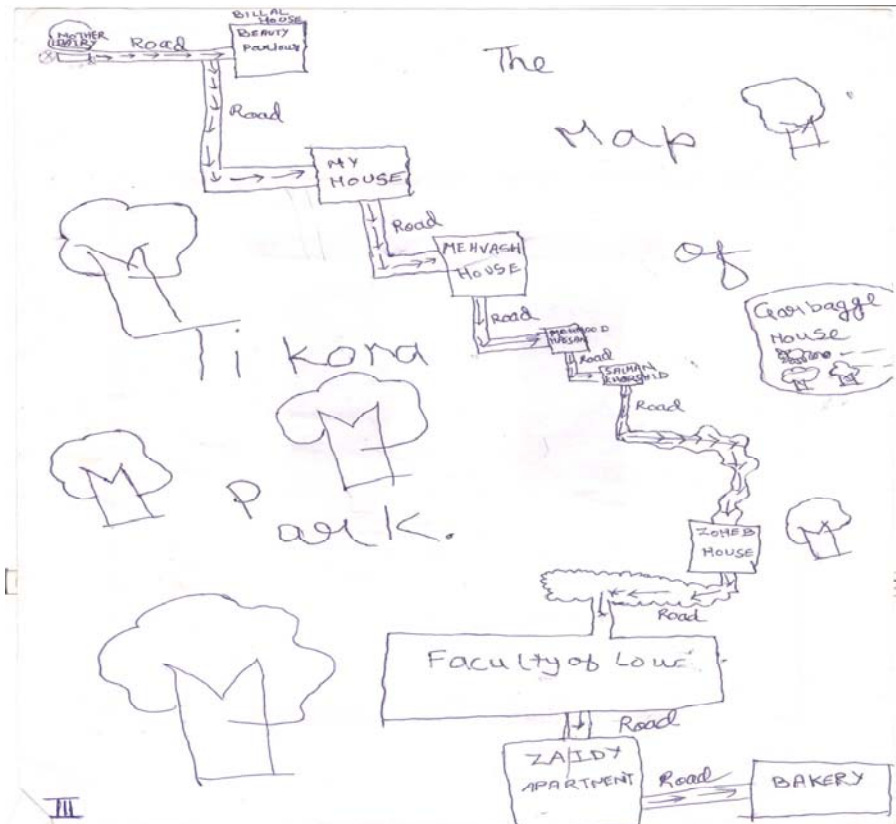
The following maps were drawn by children of different ages: Map I (a 13 year old girl Ainee), Map II (a 10 year old boy Hamza), Map III (an 8 year old girl Uzera).



Map-I



Map-II



Map-III

Uzera (Map III), the youngest, is not yet able to visualise and imagine things in space. She also does not yet distinguish between the actual experience of walking in a given space and the abstract 'aerial view' of that space. She insists that - "We go ahead to reach Mahvish's house, then we keep on walking to reach SK's house, so the road must go on and on ahead." How can the road turn back when we walk ahead? If she walks to a house on the left hand side of a road, she shows the road also turning towards that side.

Hamza (Map II) has marked some of the landmarks correctly in terms of alignment and orientation. He has interestingly drawn road 'Y' turning away instead of turning back. He is also not yet able to visualise that the road 'Y' turns back and argues "We keep walking away from SK's house in order to reach the bakery." He cannot imagine that a building which takes him so long to reach is actually at the back of his house and so close in space. There were other children of this age group who held the same view. He too has not yet developed an aerial perspective.

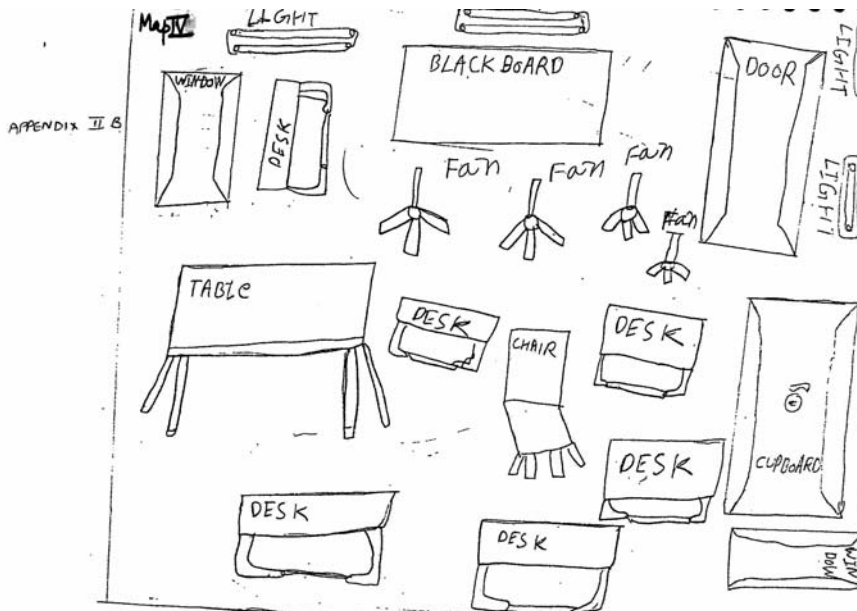
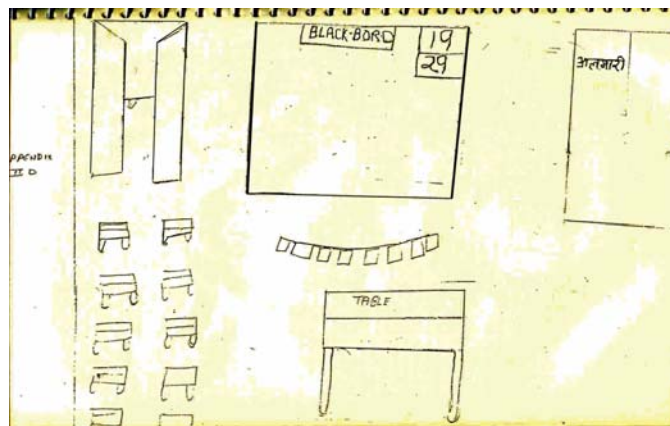
Ainee (Map I) has drawn and identified the landmarks correctly in terms of their orientation and relative positions. She is able to imagine and draw the parallel road and has developed an aerial perspective, in the sense that the actual route between the two may be longer but the places can be quite close in space.

Children need to be gradually made conscious of the differences between a realistic representation and a map. We see from their drawings the difference in development of the idea of 'perspective' at different ages. However, textbooks use maps appropriate for adults, which children cannot understand. Even 8 year old Uzera's textbook uses the conventional

map of India and neighbouring countries, while she is still grappling with icons (Map III) and does not differentiate between a picture and a map.

Younger children can be introduced to mapping by helping them draw the map of their classroom or any small area and slowly progress to drawing and reading maps of bigger areas. In drawing the map of the classroom also, which they can see and draw, children will need help in understanding 'perspective' that is from where we look at things, the use of symbols, location in terms of relative position, size of objects, etc.

This is how two Class III children have drawn different maps of the same classroom. In the following map, the child has drawn the fans in the middle of the room. He clearly cannot yet decide whether the room is to be viewed from the 'top', 'front' or side. He has used icons for the objects in class.



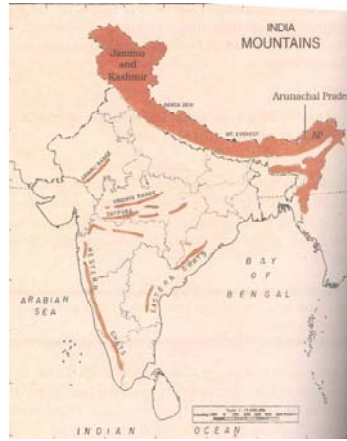
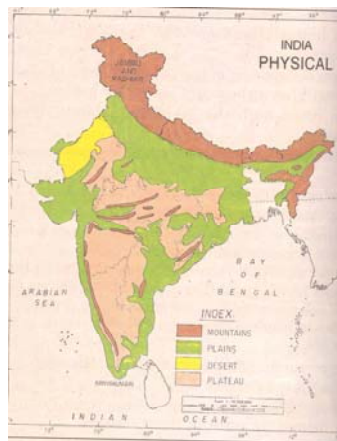
The following conversation with 11-year-old Zahra, who has the conventional map of India in her Class VI textbook, gives us more insights into children’s thinking. Incidentally, she is studying in one of the well known schools of Delhi and also manages to score high marks in traditional questions about maps.

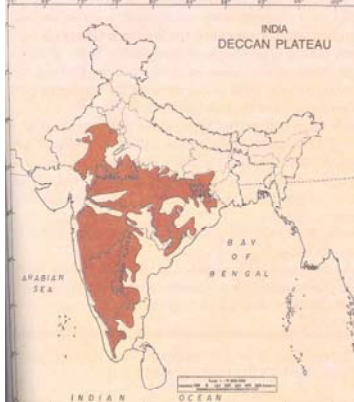
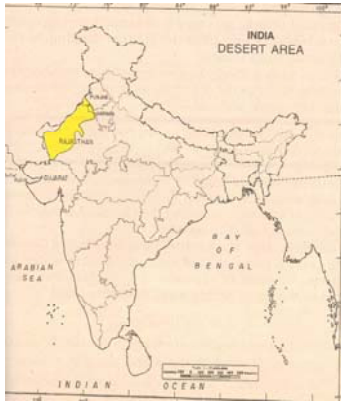
- Teacher – “How do you travel to Shahjahanpur?”
 Zahra – “By car”
 Teacher – “In which state is Shahjahanpur located.”
 Zahra – “In U.P (points to U.P. in the textbook map).”
 Teacher – “When you go to Shahjahanpur from U.P., how do you get to know that you have reached?”
 Zahra – “Papa knows. It is also written on boards. There are boundaries.”
 She draws to show:
 —. —.— International boundary
 ----, ----, ---- National boundary
 ---. ----.----- District boundary
- Teacher – “Where are these boundaries made?”
 Zahra – “On the ground.”
 Teacher – “Have you ever seen these boundaries?”
 Zahra – “No, I never bothered to see. But now when I go to Shajahanpur I will look down to see the district boundary.”
 Teacher – “Is there any boundary drawn between India and Nepal?”
 Zahra – “Yes, the international boundary.”

The above conversation shows that Zahra is not clear about the use of conventional symbols in maps. She also does not have a conceptual understanding about what a state or district is. The ‘skill’ of drawing and reading of maps cannot be separated from the development of concepts; rather they must be linked to help the child form a mental map of different spaces.

Readers to Reflect:

After reading the above discussion think about the following maps and questions from the chapter “Our Country – Its Surface” of Let's look around and learn” EVS Textbook for Class V (NCERT, 2004).

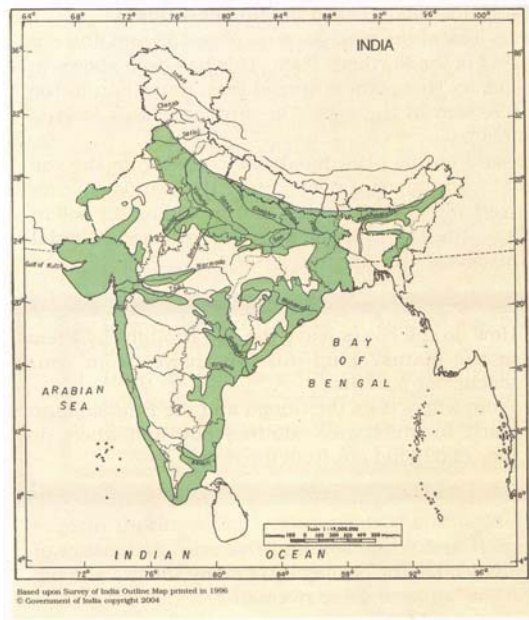




Can the children learn about the different surfaces from these maps? How can the children answer the following questions given in the book by looking at the maps?

- What is the climate of the coastal areas?
- Find out why desert areas are hot during the day and cool during the night.
- Why does water freeze on the high mountains?

Now look at the following map given on page 153 “Let’s Look Around and Learn” EVS textbook for Class V (NCERT, 2004), and also the excerpt following this map.



Let us find out and discuss the kind of life the people living in high mountains lead, such as their

| | |
|-----------------------|----------------|
| 1. houses | 2. dress |
| 3. food | 4. occupations |
| 5. means of Transport | |

What is the effect of the heat of the Sun on the snow on mountains?

Lesson 14 : Our Country – Its Surface

Some of the rivers that originate from the Himalayas are the Sindhu, the Ganga and the Brahmaputra. Many of their tributaries also start from the Himalayas. Let us locate these rivers in the map on page 153. To the south of the northern mountains, we can see a very big plain. This is called the Northern Plain. Let us look at the map given on page 153 and find out the spread of the Northern Plain. This has been shown in green colour. This Plain spreads from Rajasthan in the west to Assam in the east. The surface of this land is almost plain. (p. 153-154)

Do you think that the children will be able to make any linkages between the map and the excerpt? Will the children be able to ‘read’ from the map what is explained in the excerpt? Are we passing only information to the children, which they will memorise without understanding?

2.5 Changes in the Syllabus: Focus on Children’s Learning

The new EVS syllabus has been substantially changed to allow adequate space for children’s learning to develop fully and deeply, in all its variety of aspects. More importantly, some concepts that cannot be dealt with by them at this stage have been excluded. For instance, just as children cannot grasp ‘properties of air’ (in Section 2.1 and 2.2), they can also not understand abstract relationships between different ‘states of water’. The concept of ‘water cycle’ is not included. Nor are the concepts of work, energy or force, which has been well researched and known to be difficult to comprehend even at the age of 12 years.

2.5.1. Let us see how the syllabus has been changed in the case of maps.

Old Syllabus (Guidelines and Syllabi for Primary Stage, NCERT, 2001)

Theme: Shelter (p. 48)

| Class III | Class IV | Class V |
|---|--|--|
| <ul style="list-style-type: none"> Location of places (in the village/town) through use of symbols and map, not to scale | <ul style="list-style-type: none"> Locating important places in the neighborhood with the help of a map using non-standard symbols/indicators | <ul style="list-style-type: none"> Reading maps (state. country) and locating places on the globe Need for scale and standard symbols on a map |

New Syllabus (Syllabus for Classes at the Elementary Level, NCERT, 2006)

Theme: Shelter (p. 106)

Class III

| Questions | Key Concepts/Issues | Suggested Resources | Suggested Activities |
|---|---|--|---|
| Mapping my neighbourhood How big is your school? What kind of a building is it? Can you draw a picture of your school and your classroom? Do you know your way around your neighbourhood? Can we explain to someone how to reach the post office or the bus stand from our house? | Neighbourhood, mapping and representation in two dimensions. Directions. | Survey of different parts of the school, survey of the neighbourhood | Estimating distances, marking locations of places and drawing/mapping from different perspectives, like from the top, from the front etc. Drawing a map of the route from your house to the nearest shop. |

Theme: Shelter (p. 117-118)

Class IV

| | | | |
|--|--|---|---|
| Mapping your neighbourhood Who are your neighbours? Do you have any of the | Introduction to the concept of giving directions with respect to | Child's experiences, enquiry, observation and | Discussion, enquiry from friends and neighbours; counting the number of steps and estimation of |
|--|--|---|---|

| | | | |
|---|---|--|--|
| following near my house – a school, grocery shop, market, well, river or pond? Where are they with respect to your house? | any landmark; also a preliminary mapping process, further use of symbols, use of a scale. | previous knowledge of routes. Local map/chart of the school and its neighbourhood. | distance for making a preliminary map. |
|---|---|--|--|

Theme: Travel (p. 133)

Class V

| Questions | Key Concepts/Issues | Suggested Resources | Suggested Activities |
|---|--|---------------------------------------|--|
| Ride on a space-craft What do you see in the sky – at daytime? And at night? How many of the things that you see in the sky are man-made? Have you heard of people travelling in a spacecraft? | The sky in the day and at night. Basic exposure to the aerial view of the earth and what India looks like from there. | Story of Rakesh Sharma/Kalpana Chawla | Observation from a terrace to draw its aerial view. Imagine yourself in a spacecraft giving an interview to the PM about what you see from there. |

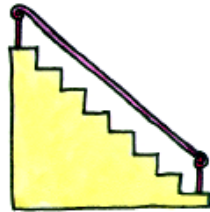
The theme on ‘**Travel**’ in the new syllabus was developed specially to help the child on the a journey of ideas, of expanding social and physical spaces, into newer and unfamiliar terrains of often mind-boggling and no less fascinating diversity. In Classes III-IV children are encouraged to look at their own journeys, if any, and to see how older people in their family may have travelled in earlier times; they also read accounts of how people travel today in a desert, through forests, in the hills, or in big cities. Moreover, it suggests a story as a ‘resource’, to bring into the classroom the experiences of a child of a migrating family and the problems she most face in the process of her schooling. Schools could use stories, posters, plays, films, visits, and other media as ‘resources’. In Class V the theme ‘Travel’ takes children through the ‘**rough and tough**’ terrain of the Himalayas with the story of Bachhendri Pal, who hoists the national flag after a difficult expedition, while they are encouraged to design a flag for their own school. The theme also takes them on a ‘**ride on a spacecraft**’ into space, from where for the first time they see the aerial view of the earth.

The exercises of looking at aerial views are developed gradually, both in EVS and Mathematics, through different views of the school and other objects, where different perspectives get introduced. This is linked to the concept of mapping, which they begin in Class III through a basic two-dimensional representation of their classroom, so that by the time they reach Class V they can read and draw simple aerial views of their locality or city. Moreover in Class III they are introduced to a map of Agra with familiar icons with a narrative which describes the experience of two children visiting the city. This story helps children relate to the abstract iconic map and to look for the locations described.

How would you compare maps in the old textbooks and traditional questions in examinations with some of these exercises (from the new NCERT textbooks in mathematics and EVS), in the context of developing children’s understanding of maps?

Example- 1 Perspective (Math Magic Class III, NCERT, 2006 (p. 2))

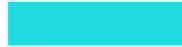
(a) Here are some pictures. Find out from where you have to look to see the things this way.



Staircase



Staircase



Table



Chair



Pencil



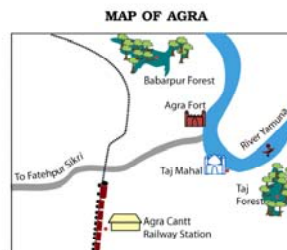
Bus



(b) Draw the top views of a few things and ask your friends to guess what they are.

Example-2: Mapping–Trip to Agra (Math Magic Class III, NCERT, 2006, p. 56-57)

Marie and Baichung are going with their family to Agra. They get down at Agra Cantt. Railway Station and take a rickshaw to the Taj Mahal. After 3 hours, they start for Agra Fort, again in a rickshaw. In the afternoon they take a bus to go to Fatehpur Sikri. (Math-Magic Textbook for Class III, NCERT 2006 p. 56-57)



Now look at the distances between these places (for kilometres we write km).

- ◆ Agra Cantt. Railway Station to Taj Mahal $\hat{=}$ 5 km
- ◆ Taj Mahal to Agra Fort $\hat{=}$ 2 km
- ◆ Agra Fort to Fatehpur Sikri $\hat{=}$ 40 km

Now find from the map

- ◆ Which is farther from Agra Cantt. Railway Station \hat{o} Taj Mahal or Fatehpur Sikri?

————— shows the railway line.

Which of these is nearer to the railway line:

- ◆ Babarpur forest or Taj forest?
- ◆ Agra Fort or Taj Mahal?

Which is closer to the river Yamuna:

- ◆ Taj Mahal or the Railway Station?




Example-3 Mapping (Math Magic Class III, NCERT, 2006, p. 74-75)

Treasure Hunt

Frankie and Juhi's mummy has hidden a surprise gift for both of them. But she wants them to find out through a treasure hunt. She has written some instructions here. Can you help Juhi and Frankie in finding their gift?

- Start from the tallest tree.
- Go forward on the pathway.
- From the sixth tile, turn left.
- After moving a few steps again you will find a plant on your right hand side.
- Colour the dress of the child playing closest to this plant.
- Start moving again from the plant.
- On the fourth tile, turn left again.
- On the way, you will find the corner of the fourth tile is broken.
- You will find a bat and a ball lying on the ground. Don't pick them up, just circle them.
- Move ahead and turn right.
- You will find a mango tree. A few mangoes can be seen on the tree. Colour 11 mangoes on the tree.
- Also draw some grass near the mango tree and start moving again on the pathway.
- When you go straight, you will find a house.
- Behind that house there is a bag. Open it and you will find something sweet in it! Can you tell what their mother has kept in the bag?



2.5.2 Change in the syllabus in the area of ‘governance’

Old Syllabus (Guidelines and Syllabi for Primary Stage, NCERT, 2001)

Theme Shelter (p. 48)

| Class III | Class IV | Class V |
|-----------|----------|---|
| — | — | Buildings in the community—school, Panchayat Ghar, Health Centre, Post Office, Police Station – their major roles |

Routine topics from the area of civics such as government formation are not included in the new syllabus. What is included, is a more concrete introduction to the notion of institutions that children experience, through themes such as the following:

New Syllabus (Syllabus for Classes at the Elementary Level, NCERT, 2006)

Theme : Family and Friends (p. 115-116) Sub Theme : Plants

Class IV

| Questions | Key Concepts/Issues | Suggested Resources | Suggested Activities |
|--|---|---|---|
| <p>To whom do trees belong? Which plants/trees around you are looked after by people – by whom? Which are not? To whom do they belong? Who eats the</p> | <p>Neighbourhood and its plants; wild and domestic plants; Fruits eaten by people living in forests. Cutting trees.</p> | <p>Local knowledge, information about domestic and wild plants (NBT books).</p> | <p>Listing of some common trees in the neighbourhood; discussion about ownership of trees; fruits that are not eaten by us.</p> |

| | | | |
|--|---|--|--|
| fruit of trees that grow wild? | | | |
| Special occasions When do many people eat together? What food is eaten? Who cooks it? How is it served? Do you get a mid day meal in school? What items? Who provides the mid day meal? | Community eating; Mid day meal (where applicable). Cultural diversity in foods associated with special occasions like festivals, family celebrations/ ceremonies etc. Boarding school. | Visit to a <i>langar</i> or other such places, occasions, talking to people who cook on such occasions. Narratives about hostel food/pantry car of train. | Discussion on occasions at which there is community eating; Listing of the different foods eaten at different occasions; drawing and descriptions of the large utensils used on such occasions |

Theme : Shelter (p. 130)

Class V

| Questions | Key Concepts/Issues | Suggested Resources | Suggested Activities |
|---|---|----------------------|--|
| Times of emergency Have you heard of houses being damaged by floods/earthquakes/cyclones/fires/storms/lightning? What would it have felt like? Who are the people who come to help? What can you do to help others before the doctor comes? Where can we look for help at such times? Who runs such institutions? | Disaster and trauma of losing one's home; community help; hospitals, police stations, ambulance, shelters, fire station, first aid. | Newspaper clippings. | Discussion, finding out about the hospital, police station, fire station, etc. |

2.6 Integrating 'Subjects'? - Moving from 'Topics' to Themes

What do we understand by general science and social studies? When we think of these 'subjects' in school we clearly have in mind some body of knowledge and also typical ways of acquiring that knowledge that we associate with each of these. These school subjects have evolved through their own complicated histories and are today quite different from the way sciences or social sciences are practised in the real world. Therefore, for an integrated approach we do not proceed with lists of 'topics' from different 'subjects', but instead propose new 'themes' that allow for a connected and inter-related understanding to develop. This requires moving beyond traditional boundaries of disciplines and looking at priorities in a shared way.

The new NCERT syllabus has an enabling format, which indicates the key themes and sub themes along with their possible connections. It consciously begins with *key questions* rather than key concepts, which can trigger the child's thinking in new directions and 'scaffold' her learning process. It also indicates how adults can stimulate and actively support children's learning, rather than restrict or throttle it, as often happens when children are forced to memorise information they just cannot understand.

2.6.1 Themes in the New Primary Syllabus

The new syllabus is woven around six broad themes given below; the predominant theme on ‘Family and Friends’ is made of four sub-themes:

1 Family and Friends – 1.1 Relationships; 1.2 Work and Play; 1.3 Animals; 1.4 Plants

2 Food; 3 Shelter; 4 Water; 5 Travel; 6 Things We Make and Do

The syllabus-web moves outward over the three years and gradually extends the child’s understanding of her world, beginning from the immediate ‘self’ to include her family, the neighbourhood, the locality and also the country. Thus by the time the child reaches Class V, she is able to see her ‘self’ in the larger context – as part of a community, the country and also, more tacitly, as located in this world. Indeed, in some flights of fancy the syllabus even goads the young child to ride on a spacecraft and leap beyond the earth, into outer space, that may yet not be comprehensible but is certainly fascinating for her.

Thus, for instance, the theme ‘**Food**’ begins in Class III with ‘**cooking**’, ‘**eating in the family**’, about what we eat and what others eat, what animals eat, etc. It then moves on in Class IV to how food is grown, what different plants they may have seen, how food reaches us, etc. In Class V children discuss who grows it, the hardships farmers may face, while staying grounded to the reality of our own pangs of hunger or the plight of people who do not get food. In addition, ‘**when food gets spoilt**’ explores spoilage and preservation of food, while changes in food habits and the crops grown are analysed through the experiences of elders/grandparents. Finally ‘**our mouth - tastes and even digests food**’ sees how saliva makes food taste sweet on chewing, while ‘**food for plants**’ also introduces the idea of some curious insect-eating plants.

Class III (Syllabus)

| Questions | Key Concepts/Issues | Suggested Resources | Suggested Activities |
|---|--|--|---|
| <p>Foods from plants and animals Which of these is food – red ants, bird’s nests, snakes, bananas, goat’s milk, etc.? What plants do you eat - what parts of the plant? What food do we take from animals?</p> | <p>Appreciation of cultural diversity in food; basic ideas about various plant used as food; food from animals.</p> | <p>Regional narratives and stories about ‘unusual’ foods mentioned.</p> | <p>Listing and discussing about food, we eat or do not eat; tabulating food we take from different plants and animals. Observing and drawing different parts of plants eaten.</p> |
| <p>Eating in the family Do all members of your family eat the same food? Who eats more? Who eats last in your family? Who buys the food and what is bought from the market? Who cooks the food in</p> | <p>Different eating practices in the family. Amount of food varying with gender, age, physical activity, etc. Cooking and gender/caste roles in the family; Food for the baby,</p> | <p>Everyday experience, local knowledge. Poems/illustrations on gender stereotyping.</p> | <p>Observation and asking adults, discussion. Listing of food items bought from the market/grown at home.</p> |

| | | | |
|--|-----------------------|--|--|
| your family? What do babies have for food? When do babies start eating and what do they eat other than milk? | significance of milk. | | |
|--|-----------------------|--|--|

EVS must deal with real issues of, say ‘water’ or ‘food’, by connecting these to the children’s ‘real’ experiences of water and food, which are vastly varied. Whose concept of ‘water’ do we talk about – that child’s who walks miles across the desert to see a trickle, or the one who has her house swept away by floods every year? If a person suffers from water borne diseases, as do an alarming majority of our children, can an EVS classroom mechanically point out that what he drinks is ‘dirty’ water, to ‘boil’ which would actually require impractical time and fuel. It must address with empathy the child’s real world experience, to understand some reasons behind the supply of dirty water, sources of contamination, and even some issues of gender, caste and class that determine how water relates to illness. There is often a feeling that perhaps primary children are ‘too young’ to understand these issues, but most children live these situations and have deep insights about them. Others who may live in protected environments also need to understand ‘water’ – that it is not just what flows through a purifying filter or at the press of a flush button, and that ‘conserving water’ or living with ‘water scarcity’ is indeed much more challenging than making posters or giving routine answers.

2.7 Indicators for Assessment in EVS

A broad list of indicators for assessment has been drawn up so that teachers plan tasks and questions that deal with each of these. In the Section? we give the progress report of a child from Class III and Class V, to show how the teacher comments and gives a grade to each indicator. This way the child’ progress is recorded and parents also get to know what activities are conducted in school. The teacher will need to observe at least 3-5 children each day and keep a brief record in her register, so that by month end she has some observation about each child. This will help in making the quarterly progress report.

1. Observation and Recording – Reporting, narrating and drawing; picture-reading, making pictures, tables and maps.
2. Discussion – Listening, talking, expressing opinions, finding out from other people.
3. Expression – Drawing, body movements, creative writing, sculpting, etc.
4. Explanation – Reasoning, making logical connections.
5. Classification – Categorising, grouping, contrasting and comparing.
6. Questioning – Expressing curiosity, critical thinking, developing good questions.
7. Analysis – Predicting, making hypotheses and inferences
8. Experimentation – Improvisation, making things and doing experiments.
9. Concern for Justice and Equality – Sensitivity towards the disadvantaged and differently abled.
10. Cooperation – taking responsibility and initiative, sharing and working together.

Section III

3. EVS Classrooms that Enhance Learning

What does it mean to learn EVS? What kinds of learning can we expect to happen in an EVS classroom? NCF 2005 promotes an integrated approach to learning in elementary school, where textbooks and syllabi cut across traditional boundaries of disciplines. In this section we shall look closely at what happens in real classrooms, and how and why 'learning' happens in some cases while not much learning takes place in others. We shall also see how teachers assess learning in students in terms of the indicators for EVS (Section 2.8) and record and reflect on what learning is happening.

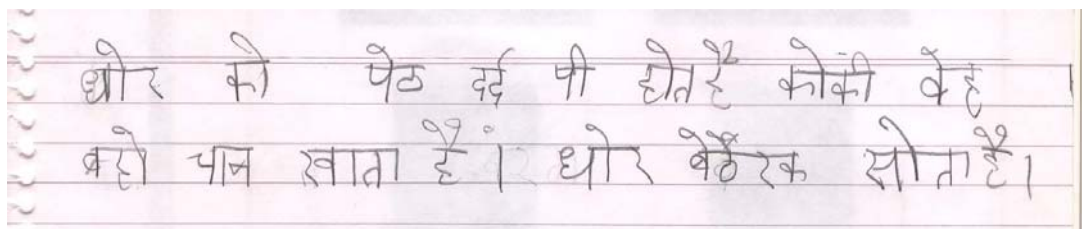
Learning in EVS, necessarily requires a rich and varied assessment system. If there are only information-based questions with short answers, teachers will not see why they should do anything else in the class that does not get assessed. With the help of classroom observations we will be able to see how teacher's questions can trigger learning and enquiry. Questions can be used potentially to make children think and engage with concepts. The following examples highlight the limited role that recall-based, short answer questions play. Moreover, we can see that if the trend in examinations is on getting one 'correct' canonical answer, normally no need for that given in the textbook, then classrooms would only focus on children reproducing that. How can teachers encourage children's own expressions as part of their learning, using more sensitive approaches towards assessment and a better understanding of children's development?

We look at the following three EVS sessions :

1. A Visit to the Stable – Learning about Horses from their Caretakers
2. Papa Can Cook – Questioning Stereotypes and Nurturing Sensitivity
3. Hard or Soft? – Experience Helps Children to Understand Classification.

3.1 A Visit to a Stable - Learning about Horses from their Caretakers

The world 'visit' word often raises eyebrows in schools, which are reluctant to take children out and are not convinced that learning does happen outside. EVS is described as learning about things around us, yet we do not give children opportunities to explore their own environment collectively, where the teacher can also assess and enhance their learning. For instance a Class II government school teacher reflects on her visit to the stable near the school:



"In the name of horses, schools and textbooks might merely make a mention but my students went much deeper and wider – they saw them eating, sleeping and getting a bath; they prepared questions to ask the caretakers of horses and learnt how to make 'useful' questions. They made guesses about horses. They wrote their questions, spoke to different people and collected information; they discussed, differed and argued, and made oral

presentations; they even wrote some reports. All these are very important elements of learning and knowledge construction. This visit was full of fun for all of them. All the girls sat on the chariot. Nisha even enacted how a bride and a groom sit on it. Children narrated interesting instances of their imagination.”

The following is also an excerpt from her diary:

“After the Morning-Message activity, we sang a song ‘Around Us’ (*aas-paas*), to begin a new unit ‘My Neighborhood’. The song has incidents on a post office, stable, milkman, postman, stable-keeper, etc. I asked the children if they knew where horses live.

Rakhi - In a jungle.

Teacher - Have you seen a horse’s house somewhere around?

Neelu - Yes Didi, it is close to Kavita’s home. When we take a turn from there, we reach the bus stand, we see there lot of horses.

Teacher - A horses’ home is called a stable. Today we will visit a stable.

After listening to this, the happiness that they felt reflected in could be seen on their faces. All of them asked - when will you take us?

Teacher - Whenever we visit a place, we first prepare for it. So first we will make preparations for the stable visit and then go.

I then divided the students in five groups of four each. While grouping them I ensured that every group had one girl who could write and one who could read. Every group had four roles to be played - a writer, an interviewer, a reporter and a helper. I had already made chits for every group and for every role, so that they could remember both the things.

Teacher - What will we do in the stable?

Saroj - We will see the horses.

Teacher - What else can we do?

The class became very quiet. So I said that we could talk to the people who took care of those horses. We could ask about the horses’ food, sleeping time etc. I was trying to activate their familiar associations and schema through these ideas. After this, I asked them to develop questions in their groups. The writer had to note down at least five questions. I sat with every group, when they discussed and made questions. Every group then presented their questions.

Group I — Do horses bathe in the morning or evening? What time do they take a bath? When do they sleep? What do horses eat?

Group II — Do horses take a bath? What are the kinds of clothes that horses wear? Where do all mares(ghori) go?

Group III — When are horses taken out for a walk? When are they given a bath?

Group IV — How do you take care of horses ? When do horses give rides to people?

Group V — How many boy children do horses have? How many girl children do horses have?(*Ghora-Ghori ke ladke kitne hain? Ghora-Ghori ki ladkiyan kitnee hain?*)

When we walked to the stable, the students told me about everything that they were observing - goats, fruits, hens, stones, traffic signals — everything gave rise to discussion. The traffic signal reminded Khusboo of various shapes so everybody started observing shapes.

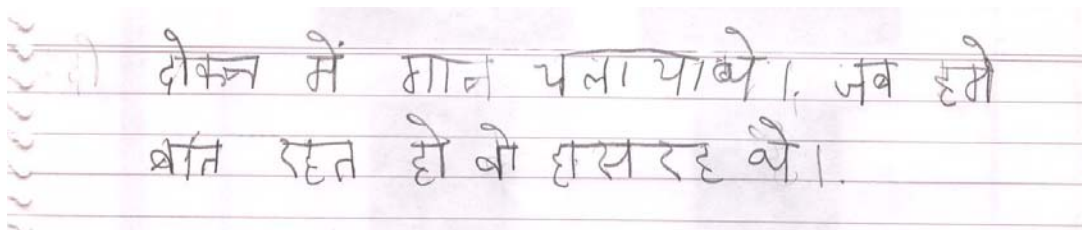
In our society a stable has never become a 'source of learning' for anyone. As a teacher it is my responsibility to critically choose what can be a good learning experience for my students. Students visited the stable, counted the horses, spoke to the workers in groups and found out about many things. Not only my students but I too learnt many new things about horses. The students found out that the stable only kept mares and that mares eat potatoes, onion, garlic, ginger and gram. Mares are dressed for wedding processions and are given a bath once in three days. They can sleep while sitting, and there was only one pony in the stable. Just one visit led to so much learning in a short time! After coming back, all the groups discussed and made presentations, but I needed to work with them on their presentation skills.

Involvement of the community in the learning process is widely discussed and appreciated, but it is hardly done. When the stable-workers explained things to the students they had become teachers. After all only a stable-worker can tell about horses. He works with them day and night. Community activities should form the basis of a school, therefore I gave importance to local people, their activities, their animals, and created an opportunity for the students to interact with their local environment.

There were definitely problems that I faced. The interviewers (students who had to ask questions) felt shy while asking questions and did not ask properly. Some students could not read the questions they had developed on their own as they cannot read. The helper in every group herself required help. But as a teacher I was prepared for this crisis. They are just learning to read and write so some problems were inevitable, because the activity involved a lot of writing and reading their own writing. However, this experience actually strengthened and improved their reading and writing skills."

The Class II teacher assessed her students' learning through the following:

1. Observing students' participation
2. Analysing questions developed by the students before the visit
3. Students' oral and written presentations
4. Students' drawings and acting.



3.1.1. Some comments from the teacher's observation records:

- As soon as we entered, Farah made a quick observation that all the horses were white in colour except one. She also noticed that there was only one pony in the stable.
- While shapes were taught in the class Khushboo could not identify them, however during the visit today, the traffic signal triggered an interest in various shapes. She pointed out many of them and kept observing shapes throughout her way to the stable. She also communicated it to her peers.
- Group- work : Group IV members could not coordinate many things. The team had developed good questions, but the interviewer could not ask some questions properly.

Even during the enactment they kept laughing all the time and as a result they missed out many points.

- Group III members asked their questions very confidently. They were interacting with the stable workers. Their recorder Shweta also wrote the conversation diligently. Although she struggled with many spellings like (घोर, पेठ, 'कोकी', 'चान', 'बेठे')

3.1.2. Teacher's assessment of children's questions

Initially children were reluctant as it was their first opportunity to frame questions in a classroom. There was a good variety though all groups made similar questions. However, none of the groups made any questions on the health of the horses.

I had expected such questions, because children ask such questions at home, but they could not ask them while in the classroom. I have to develop their questioning skills.

3.1.3. Teacher's record on drawings and acting

Two groups enacted scenes but only one could communicate well. Seema showed very well how a stable keeper gives a bath to the horses. Meenu patiently acted like a horse throughout the scene.

Two groups drew pictures of the stable. Their drawings showed that they had minutely observed various things like — the placement of a bucket, fodder, clothes hung on a wall, etc. However it was interesting that group II showed that all horses were of same shape and size, whereas group V showed variation in horses' sizes, colour and health.

3.1.4. Teacher's assessment of group presentations

The teacher had kept a record of all the group reports. One group prepared the following report (Translated from Hindi):

"We had asked questions to know about mares. Mares eat gram, potato, garlic, ginger, onion. The stable worker gives them a bath once in 3 days. They also have a young one in the stable. A horse sleeps while sitting. A horse also gets stomach-ache because it likes to have a lot of gram. Only mares go for a wedding procession so they only keep mares. Mares make money by going for wedding processions, so stable workers earn their income."

The teacher had made the following comments on the above group report:

The group had prepared a coherent and comprehensive report. The report had a logical flow of ideas. It was very heartening to see that Class II children could write such a long report about their visit. They had made observations, like horses can sleep even while sitting, which I myself did not know. Children had made a logical connection that mares are kept in a stable because they are the source of income of the stable workers.

When the students made a presentation, the teacher assessed them on the basis of logical flow, articulation and organisation of the ideas. She also assessed their written reports, on the basis of originality of ideas and expression. She ignored spelling and syntax errors during this EVS assessment; though in her language lessons she kept those errors in mind. She wrote in her diary, "If I plan carefully, it ensures better learning."

Children are capable of much more than what our traditional EVS classrooms demand. In the above example of a ‘Visit to a Stable’, students of Class II were able to actively participate in the process of learning despite their limited reading and writing capabilities. In fact, the activity itself gave them meaning and motivation to write and read their own writing. They learnt to make **meaningful questions**, to **respect and empathise** with the people they spoke to, to **organise the information they collected, categorise it and present it both orally and through their reports**. It is a demanding activity that triggers tremendous learning — children are encouraged to use many of their skills and concepts to generate new ‘knowledge’ and deep understanding.

3.2 Papa Can Cook: Questioning Stereotypes and Nurturing Sensitivity


The following are two interactions with Class III children on the theme of ‘Food and Gender’ from *Looking Around* (NCERT, 2006). In these interactions we can see how classroom discussions help children to think and articulate about gender stereotypes. Asking questions like “Why can't father cook?” are important as children need opportunities to review and interrogate can also be retained their biases with regard to gender roles.

First Session:


The Story of Food


14

Venu's Family



Rani's Family






- ❖ If not, Let us talk about your family.
- ❖ Do all the people in your family eat together? If not, why?

- ❖ Who eats last in the family?


- ❖ Who does not help in cooking food in the family and why?

- ❖ In the table, some of the work done in the house has been mentioned. Find out who does them in your house and who does them in your friend's house. You can add some other work to the list also.


| Work | Who does the work | |
|-------------------------------|-------------------|------------------------|
| | In your house | In your friend's house |
| Cooking food | | |
| Buying things from the market | | |
| Sweeping | | |
| Cleaning the utensils | | |
| Filling water | | |
| | | |
| | | |



What kind of work are people doing in both the families?



- ❖ Is your family like any one of these families? If yes, like which one? How is your family like theirs?



Discuss carefully and sensitively the issues such as defined gender roles etc. Allow children the freedom to question these without hurting the feeling of others.

Thirty seven children of the class were divided into five groups. They were asked to look at the above two pictures (p.92) of EVS textbook Class III and compare the families shown, in terms of the following points.

- Who are the characters shown in the two families and how are they related to Venu and Rani?
- What kind of work is each member of the family doing?
- Do you see anything special or strange about the work each person is doing?

The teacher also sat for a few minutes with each group and helped probe further by asking.

Teacher – “Why do you think Rani’s mother is not reading the newspaper while Venu’s mother is doing so?”

Shoaib – “Probably she doesn’t know how to read.”
“Look she is carrying grass on her head.”

Aafreen – “She might not be getting time from her household chores.”

Israfil – “She is not reading at this moment. She might read later.”

These responses show that children may not yet be rigid in their ideas about gendered roles. They are trying to grapple with reasons for these roles, as seen around them. But some children seemed quite clear about their choices.

Sohail – “Why is Venu’s father cleaning the floor? This is not his work. Girls do this kind of work.”

He further said: “I like Rani’s family as she is serving food to her father and brother.”

Some of the children in his group did not agree with him and one responded as follows.

Madiha – “All the members are eating together in Venu’s family, which I like. In my family also, we all sit together and eat.”

One advantage of the small group discussion was that a child like Sohail was confronted with a different perspective which might make him think differently, if more such opportunities of debate and discussion are provided in class.

Without worrying about a ‘noisy’ class the teacher gave opportunities for a lively discussion and then asked them to fill the following worksheet (p.93). The question in the book “Who does not help in cooking food in the family and why?” again resulted in animated responses.

Zohra – “My father is not able to help as he goes out for his work.”

Nosheen – ‘I don’t help as I go to school.’

Asrar – “I don’t help, because I am not a girl.”

Second Session:-

In the second interaction the teacher enacted a five-minute scene of cooking *roti* and *subzi* and serving it to them.

Teacher – “What was I doing in the scene? Whose acting was I doing?”

Students – “You were ‘Mummy’ in the scene. You were preparing food ‘*Roti Sabzi*’ for your children. Then you gave food to Shirin and Israr.”

Teacher – “But I was ‘Papa’ in this drama.”

Students – “How can you become Papa, you are a girl?”

Teacher – “But in a drama, people are allowed to play different roles. So I was doing Papa’s acting.

Students – “You were not Papa in this drama, because you were cooking.”

– “Papas don’t cook.”

Teacher – “Why can’t papa cook?”

Students – (Different voices) “Because he goes out to work.”

– “Because women and girls are supposed to do the housework.”

– “Because he comes only in the evening and mother is at home all day.”

Teacher – “What will happen if mother falls ill?”

Students – “We will have to eat noodles.”

– “We will go to a hotel and eat.”

- Teacher – “But why can’t papa cook? How is food prepared?” (using hand gestures for preparing food) “What is there so special about women, that only they can cook?”
- Students. – “Women can cook and not men, because women know more about cooking.”
- “Ma’am food is prepared with hands.”
- Teacher – “Men also have hands.”
- Students – “They can cook but don’t”, “Yes they ‘can’ cook.”
- Teacher – ‘Some of you wrote that your sisters help in cleaning’
“You can also help in cleaning.”
- Students – “I help in cleaning.”
- “I don’t, girls are supposed to do this work!”
- “Men go to office for work.”
- Teacher – “I also go to office!”
- Students – “But you are a teacher.”
- Teacher – “I too worked in an office or some years. I used to come back at night very tired and my husband used to be back much earlier. Who should be cooking dinner for the children? I used to be really very very tired.”
- Students – “If your husband knew cooking, he could have prepared dinner for the family”
- “Men can learn to cook.”
- “Some men cook in hotels.”
- “Life must be easy for their families! ……”

There are no ‘right’ or ‘wrong’ answers in the above discussion as these responses are related to the experiences of children. The teacher exposed the children to different possibilities and alternatives, which triggered the process of comparing different situations and suggesting hypotheses and inferences.

3.2.1 Some comments from the teacher’s observation record

Sohail seems to have already made some moral judgments about gender roles. He was adamant that a father should not sweep the floor or even cook. One of his responses was “I don’t (help in cleaning); girls are supposed to do this work.”

He is expressing his ideas freely and confidently without any inhibition but seems rigid. He will need more exposure, for which I will need to present him with different perspectives and possibilities so that he becomes more open.

Madiha makes linkages between her home and school experiences during discussion and states her opinions confidently and categorically, like, “Papa can also cook, he can learn to cook.” She uses logical reasoning and compares and analyses different situations while giving explanations, which helps others in her group. She gave a new angle to the discussion by arguing, “Men cook in hotels, why can’t they cook at home too?”

3.2.2 Observations about one of the groups (Rose):

Group 'Rose' has become more open and sensitive to ideas about gender and seems to have gained from the different perspectives of its members. The views expressed by Iqaan which are not stereotypical like “I could have helped mother in the kitchen if I knew cooking” were opposed by Shaheer who said “Girls do this kind of work.” Madiha's question, “Who will help Iqaan's mother when she doesn't keep well?” led to further comparison and analysis of situations in the group. An interesting observation expressed by Madiha that men cook in hotels so why can't they cook at home, helped the group to further engage in discussion and gain newer insights about good salaries given to chefs and *khansamas*.

Shaheer has now starting writing well using correct spellings and grammar. He helped others in the group to complete their work. Zohra still needs support in spellings.

There are other examples of such sensitive issues in ‘*Looking Around*’, EVS Textbook for Class IV (NCERT, 2007). There is the true story of a young girl ‘Chuskit’, who cannot walk but dreams of going to school, and is finally able to do so with the help of her sensitive and caring friends. The following questions encourage every child to look around and become open to the world of individuals who have different abilities and potentials. Teachers could make several more assessment questions from the students’ specific contexts.

- Chuskit could reach school at last. Do you think she may have faced some difficulty inside the school? What kind? If you were Chuskit’s friend, how would you help her?
- Do you have ramps in your school on which a wheelchair can move?
- Do you know any child near your house who cannot go to school because of some difficulty? Would you like to help such a child? How can you help?
- Look at the buildings around your house. Is there any way by which a wheelchair can go inside the building.

3.3 Hard or Soft? – Experience Helps Children to Understand Classification

This is an illustration of **group work** in which students were trying to classify materials. Students were divided into small groups. In group activities one child's doubt or inquiry can trigger off better learning opportunities for the entire group. They learn with each other and also learn to share responsibilities and resources. Students in a group inform each other about procedures, discuss findings and come to conclusions. Group work also develops a feeling of cooperation rather than competition. Researches on cooperative learning methods also showed that students learn better and feel more positive about their performance. Grouping students during EVS activities also helped teachers to manage big/large classes while giving them more responsibilities.

This is an extract from a government school teacher's diary of Class II.

“I divided the students in groups of four each. There were five groups, I gave a paper to each group on which I had drawn the following table:-

| | Touch me and tell me where should I be placed (<i>mujhe chhookar batao main kaha jaaun</i>) | | | |
|-------------|--|---------------------------|------------------------------|------------------------------|
| | Soft (<i>Mulaayam</i>) | Hard (<i>Kathor</i>) | Smooth (<i>Chiknee</i>) | Rough (<i>Khurdura</i>) |
| Soap | | | | |
| Sand | | | | |
| Cloth piece | | | | |
| Paper | | | | |
| Cotton | | | | |
| Desk | | | | |
| Stone | | | | |
| Cream | | | | |
| Oil | | | | |
| Wool | | | | |
| Polythene | | | | |
| Soil | | | | |

Groups had to classify the things by touching and feeling them. All of them classified soap as smooth and sand as rough, though three groups got stuck on cotton. After much discussion and touching it repeatedly the fourth group suggested that it was 'soft' and it was accepted by the whole class. However, when it came to the 'desk' they were all puzzled. Nisha said- (*"Didi oopar se chhoone main to mulayam hai lekin dabtaa nahin hai"*) "If you touch on top it appears soft but it can't be pressed."

I then addressed the entire class and asked them – is a desk soft or hard?

Ritu – Soft

Teacher – Is cotton soft or hard?

Sonia – Soft

Teacher – Is there any difference between cotton and desk?

Saroj – Yes Didi, cotton can be pressed and desk cannot be pressed.

(*"Haa didi ruue dab jaatee hai aur desk to dabtaa hi nahin."*)

Teacher – Yes, because desk cannot be pressed it means that it is hard, but on the upper surface it is smooth to touch. (*"haan, desk dabtaa nahin iska matlab yeh kathor hai lekin oopar se chhone main yeh chikna hai."*)

Nisha – Yes, Didi my hand slips on it (*Haan didi, ispar mera haath phisalata hai.*)

We can see that an understanding about classification is not always easy and straightforward. They need to make fine observations, to handle objects and discuss with peers and the teacher. Only some things can be classified in one group, for example - oil as smooth (chikna). Classes in this context are usually not mutually exclusive. For example a piece of cloth can be smooth as well as soft; desk can be hard, smooth and rough at the same time. Thus a student who places desk in the 'smooth' column could be as correct as the one who puts it under 'rough'.

"I cannot say that my students understood everything. They definitely had many questions in their mind about classification, like Nisha asked "*Didi*, why can not a stone be called soft?" Kajal asked "*Didi*, when soil is in the form of hard clods it can't be pressed, but when the soil is just lying around it is very soft. So is soil hard or soft?"

Students did not get all the answers in this activity but these questions have given them a direction to think. I will organise many activities and give opportunities to raise doubts without expecting one single answer immediately. I have learnt that the process of learning is more important than the end product, and that it goes through various stages. We touch many different things but hardly discuss their characteristics. Probably schools don't even include these things in their curriculum. However, such experiences are critical in developing an enquiring mind, which is essential for EVS. An interaction with the world around us forms the basis of learning and EVS".

3.3.1 Some comments from the teacher's observation record

- Today Nisha's observation about the desk being soft triggered a discussion in the class about the conflict in categorisation. In the past also, Nisha had raised several such queries, which made others in the group think more.
- Gauri had started analysing things. She had tried to reason out why certain things labelled as 'soft' can still feel different on touching, for example – cloth and cotton- wool.
- I am glad that Manpreet had also started participating in investigative activities. She extended the activity on her own by asking whether our body is 'soft' or 'hard' as it feels like both depending on what we touch.

- I realised that today's activity stimulated hypothesis and prediction as I had planned. Sama noted that soap becomes soft if it is left in water overnight. "Will a desk also become soft if we leave it in a pond overnight?"
- Sarita and Kajal engaged well while working individually. However, they did not share space and resources with other group members. They dominated in their respective groups and I had to intervene repeatedly.

These excerpts from primary teachers' reflective writings vividly show the nature of learning possibilities in Environmental Studies — to develop our children's understanding about their world by using their skills of observing, experimenting, thinking, questioning, analysing, making a guess and hypothesising, talking, discussing, arguing, etc. Children have these capabilities but they are neither recognised nor assessed by schools. In fact, when teachers start organising tasks or group work to assess and record such learning they also help enhance these skills.

Section IV

4. Modes of Assessing Children's Learning

We have seen that learning in EVS must encompass a wide range of activities to help develop children's understanding and skills. Several modes of assessment are required to ensure that teachers and parents can observe children's development through its multiple dimensions, and which can facilitate further learning, for the learners as well as for the teacher. We discuss here some modes used by teachers of EVS, keeping in mind the range of indicators given in section 2.10.

4.1 Expression: Drawing, Acting, Dancing, Sculpting etc.

4.1.1 Road Safety

We discuss examples of three different ways in which the topic of 'road safety' was dealt with in government primary schools. We also see that only when children are given a chance for creative expression — either through acting, drawing or creative writing — do they learn more effectively, and also give us opportunities to assess their original ideas and thinking.

A. Performing and Reporting for the Media

Picture showing:

A group is performing and others are sitting in a circle. Media persons are seated on chairs with the name of the TV, radio channel and the newspaper pasted on their respective desks.

Amardeep, the teacher, divided her class of 28 children into four groups and three pairs. Each group was asked to think of a situation that can lead to a road accident and to enact the same. Three pairs of students posed as 'media persons' from a newspaper, a T.V. channel and a radio channel.

Group I enacted a scene showing a child cycling very fast in order to reach school on time. He was hit by a speeding bus on a sharp turn. A young man standing near the door of the bus was also thrown out as the driver applied the brakes.

Group II enacted a scene showing children playing cricket on the road. The fielders ran to the main road to get the ball, which was hit very hard by the batsman. One child, in this hurry to get the ball, did not see the approaching two-wheeler and got injured in the process.

Groups III and IV also enacted different scenes related to road accidents.

The road accidents were reported by different media in their respective styles. Later a discussion took place around the following points:

- Why and how do accidents happen?
- How can they be avoided?
- How come there are gaps and differences in the media reports?

The learning outcomes include **thinking** and **brainstorming on different possible situations** that can lead to an accident. The group learnt the importance of **consensus** in order to proceed with the activity. **Decisions** regarding different aspects like roles to be played were taken. The children used **body movements, facial expressions and verbal and non-verbal gestures** in order to express and communicate. The media were able to report the incidents in their different, typical styles.

Individual assessment reports of two children are given below:

“Sonu took an active part in choosing and enacting the scene (of the road accident) and co-operated with group members. He has learnt to express well through body movements and delivers dialogues with ease and spontaneity. This shows that he is clear regarding his role and the situation. Through his facial expressions he is able to show different emotions like fear, joy, and confusion quite well. The scared look on his face when the vehicle approached was quite natural.”

“Parineeta has improved tremendously in the last one month in terms of written expression. Taking cues from her partner she was able to write the newspaper report on accidents using grammatically correct short sentences. She posed good questions to the 'witnesses' to construct her news story. She also suggested a novel solution to avoid accidents on sharp turns, using a gadget to indicate a vehicle coming from the other direction.”

Through this activity a teacher can assess students on the following EVS indicators:

- Observation and Recording – Reporting, narrating and drawing; picture-reading, making pictures.
- Discussion – Listening, talking, expressing opinions, finding out from other people.
- Expression – Drawing, body movements, creative writing.
- Questioning – Expressing curiosity, critical thinking, developing good questions.
- Analysis – Predicting, making hypotheses and inferences.
- Experimentation – Improvisation.
- Cooperation – Taking responsibility and initiative, sharing and working together.

B. Writing creatively—even in the State Scholarship Exam (Class IV)!

Q: Describe different situations when accidents can occur and suggest how to prevent them.

A government school student in Kerala, who has been encouraged to write creatively as part of his regular teaching and learning experience in the class, feels free to express his thoughts in the following manner:

"If one drives in a half-sleepy state accidents will take place. If a person drives while looking at women then accidents will happen. Also over-speeding will cause accidents. If the driver is careless accidents will happen. If one walks through the middle of the road without looking out for passing vehicles, accidents will take place. If the brake fails an accident can happen. If the vehicle goes without noticing the train, If the bridge on which the train goes collapses, if there are pot holes on the road, if one drives while suffering from severe headache he can fall down somewhere. If the driver listens to people talking an accident will happen. When two people are talking on the road he will dash onto them. If one loses control over the vehicle accidents will happen.. If one vehicle tries to overtake another one accidents will take place. While one train is moving and if another train comes accidents will take place. Accidents will also happen if one drives while watching beautiful birds. Accidents will happen if one drives at high speed out of fear of wild animals. Accidents will not happen if one wears a helmet while riding on a scooter. Vehicles should go carefully. While passing by curves on the road the vehicle should horn."

Through such tasks the teacher can assess students on the following indicators:

- Expression – Drawing, creative writing, etc.
- Explanation – Reasoning, making logical connections.
- Analysis – Predicting, making hypotheses and inferences.

C. Answering questions from the textbook (Class III, NCERT, 2000, page 95)

Fill in the blanks by selecting the right word from the ones given below:

(zebra crossing, railway track, green light, traffic, accidents)

1. Follow the _____ signals at the crossings.
2. People use _____ while crossing the road on foot.
3. When the gate at the level crossing is closed, one should not cross the _____.
4. If the traffic rules are not followed, _____ can take place.
5. Vehicle move only when there is _____ at the crossing.

Readers to Reflect:

- What indicators can be assessed through these questions taken from the old textbook (NCERT, 2000)?
- Out of the three options on 'road safety' given above (A-C), which will you choose for assessing children's learning? Why?

4.1.2 Worksheet – ‘Can you help them?’

The following are questions to make children think about their feelings and how they can help others who may be disturbed, taken from the Sangati programme run in Mumbai Municipal Schools by Avehi-Abacus.

Here are some children who are upset. They need your help. Tell them what you do when you are in a similar situation.

1. Satish is a short-tempered boy; he cannot tolerate anybody challenging lesson space his views. When someone disagrees with what he says, he just explodes with anger. Whether it is at a game or while talking to his friends, he often walks away angrily because they disagree with him. What would you tell Satish to do in order to control his anger? What do you do when you get angry?
2. Gulshan is a sincere student, but just before an exam he gets terribly nervous. Then he cannot do well in his examination. What advice would you give Gulshan to help him? What do you do when you feel nervous?
3. It is vacation time and Sheela has no one to play with. Most of her friends have gone to their villages or are visiting relatives. Sheela is getting restless and bored at home. Do you have any suggestions for Sheela on what she could do? What do you do lesson to get rid of boredom?
4. Meena is an excellent athlete. She enjoys playing outdoor games. She worked very hard to win the running race at the inter-school sports meet but missed it by a few seconds. She is feeling very disappointed, not just for herself but also for her school. Can you help Meena to overcome her disappointment? What do you do when you feel disappointed?

4.1.3 Children's Drawings

The following questions are from the Class V examination for children of Hoshangabad (conducted by Eklavya, M.P. and translated from Hindi):

Q 1: A story is given below. After reading the story, give answers to the questions.

“One day Sukhbati saw that there was something lying far, under a stone. She went close to the stone and found a red and blue balloon lying there. She picked up the balloon and started filling air in it. As she started blowing air into the balloon, it got bigger and bigger. The big balloon started flying and took Sukhbati with her.

Sukhbati held the balloon very tightly. The balloon was flying over high mountains. At first, she was scared but later she started enjoying herself. After mountains, she was flying over a thick forest. The balloon went over the forest and then across the sea. The balloon came above a city. An eagle then pecked the balloon and the balloon burst. Sukhbati started falling down. As soon as she hit the ground, she jerked. With that shock she opened her eyes, and found herself in her bed.”

1. What did Sukhbati see under the stone?
2. Why was Sukhbati scared?
3. What places did the balloon fly over?
4. Make a drawing of Sukhbati hanging from a balloon.

Record of teacher's assessment of children's drawings:

Analysis of children's responses: Almost all children responded to this question. Here are some interesting samples of children's drawings:

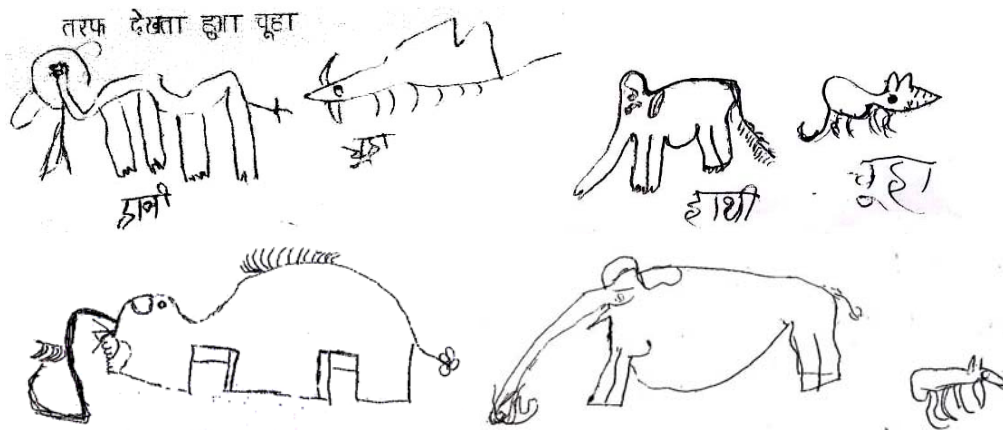


Children have used their imagination. It is interesting to note that Ramrati, Ratan, Gagandeep, Amrita and Farida have drawn Sukhbati smiling while Pyarelal, Ritu, Kamaljeet, Rabnoor and Rasheedan have drawn scared expressions on her face. Such facial expressions show how children feel about the character in the story, or even how they would feel if they were in place of that character.

Looking at the drawings closely I observed that Amrita has shown Sukhbati holding a balloon in only one hand, as children often hold while they take it from a 'balloonwala' (hawker). She may not have realised that if one is hanging from a balloon, one would desperately hold it with both hands. Rabnoor has drawn the balloon and Sukhbati separately, which shows that she has not been able to imagine how to draw Sukhbati hanging from the balloon.

The written exercises (1, 2 and 3) are based on an understanding of the narrative. However, the drawing exercise provides much more scope of expression for young children. It gives an opportunity to the child for personal interpretation and imagination, and affords freedom for a personalised style of representation. Children enjoy drawing so it is also a pleasurable way of asking them about their understanding of a narrative.

Q2: Draw an elephant facing left and a mouse facing right. (This was another Class V examination question, and here are some samples of children's drawings).



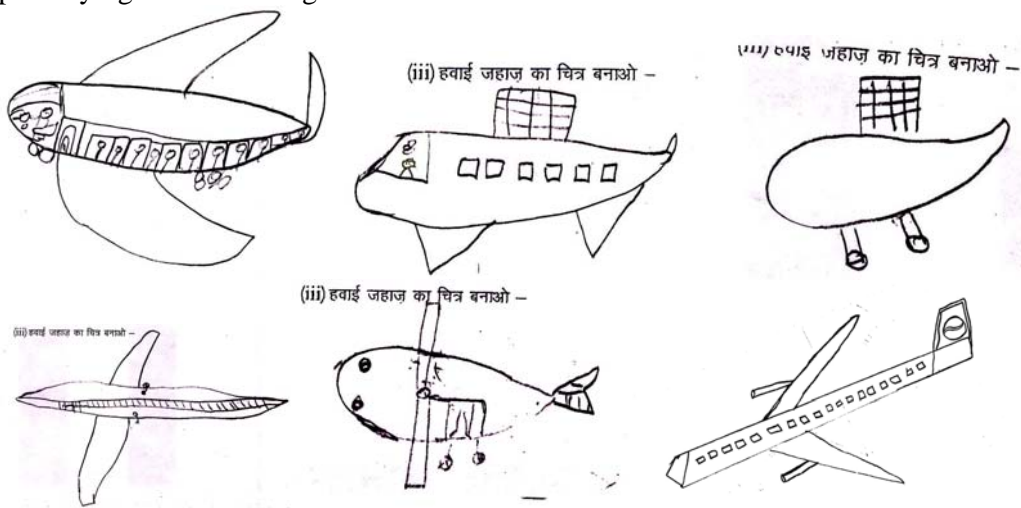
Record of teacher's assessment of children's drawings:

Most children had correctly drawn an elephant facing left and a mouse facing right, indicating that they have understood the concept of 'right-left'. Here are some other interesting observations.

- All children have drawn a basic body shape of both animals. However, Hemant has drawn a decorated elephant which he might have seen in the Republic Day parade, a film or perhaps even a wedding.
- Sonu, Swati, Arti, Sana and Rocky have drawn basic physical features like the face, trunk, body, legs and tail for an elephant and the mouth, eyes, body, legs and tail for a mouse. Their drawings also show a clear emphasis on facial expressions for each of the animals.
- Sania has drawn four legs of the elephant in a different way. Hema has drawn the four legs of elephants as drawn in the standard drawing of an elephant, but Sania has tried to draw differently. From a conventional adult point of view, there is a danger that it may be labelled as 'wrong'. However, we must appreciate that instead of copying from a picture, she has drawn from her own perspective. Development of perspective does not happen overnight it does takes time. Even for an adult, it is difficult to imagine mentally as to what angles one looks from—to see two or three legs of an elephant. All drawings are different, which shows that children are thinking and trying on their own. This shows the beginning of the development of their understanding of 'perspective'.
- It is interesting to note that Azra and Rahul have drawn more than four legs in the case of a mouse. It is possible that they may have usually seen a mouse darting across the room, without sufficient time to observe! Moreover children are still in the process of developing the concepts of 'animal' and 'insect'. Azra has drawn six legs of the mouse, showing that she has not fully differentiated a mouse from an insect and needs to be asked to observe a live mouse or its picture more closely. I must also make them observe insects closely.
- Most children have drawn the elephant bigger than a mouse. Swati has drawn the elephant and mouse of roughly the same size. It does not mean that she did not know about comparative sizes. It may be possible that she was not conscious about showing difference in sizes while she was busy drawing. In fact, she seems to have been more fascinated and preoccupied with showing even minute details of the mouse like eyes, hair on tail etc.

This drawing exercise may apparently seem to assess only their understanding of 'right and left', but it also gives us many insights into children's thinking about animals, their body shapes and even sizes, which can be developed further in the classroom. Thus, as an assessment exercise like this becomes an important guide for further learning.

In another example of a drawing-based test question, children were asked to say how an aeroplane is different from a bird, and to draw these. The aeroplane was chosen because the school was located near an airport and children often also saw aeroplanes flying past their houses. An analysis of children's drawings reveals their keen observation (and imagination) about an aeroplane, where they have drawn in detail its body, wings, wheels, lights windows, fan and even a ladder. Indeed, one drawing also shows people sitting in an aeroplane and a pilot flying with a steering wheel in hand.



Every drawing is different and distinct. Drawing is thus not only an enjoyable and expressive activity for children but a very effective learning opportunity for teachers. These help teachers in assessing children's concepts, ideas, thinking and personal feelings, which they feel free to express.

Just as they learn to speak their first language, young children draw as a natural part of their development. Children in primary classes are still learning to read and write, but can express themselves much more freely and deeply through drawings. It is our own inability to understand children's drawings and creative expression that makes us unable to make sense of them. Our lack of imagination often comes in the way of analysing children's drawings. We, as adults, want children to reproduce in a standardised manner. We direct children to draw a tree, mountain, river houses, flowers, etc., in a routine style. Instead of motivating children to see things and events from their own perspective, we want to impose conformity. Moreover, if we reward unoriginal responses, then where is the space for their imagination, diverse thinking and expression? Why do we have 'drawing competitions' for young children, ranking them with marks even for creative expression, instead of publicly displaying all their drawings and thereby encouraging all of them to use their own imagination?

4.2 Picture Reading Tasks

Many kinds of questions can be framed on pictures to give children the opportunity to express their power of observation, making connections and interpretations. For example, questions based on these famous Mughal miniature paintings, showing construction activities, can help children study them carefully and learn a lot about construction building – then and now.

Task 1. Reading a Mughal Miniature



Task: You can study this painting carefully to understand many things about how buildings were made in earlier times. You can also answer the questions to compare how buildings were made then, with how they are made today.

1. Is it right to say that this painting shows activities of earlier times? What are the things that are common today but are not found in this picture.
2. Can you roughly count the number of people involved in the work shown here? What are the activities mainly done by men and what activities are women mainly employed in? Are there tasks that are being done by both men and women? Are children also employed in construction work?
3. Do you find people who are not directly performing any building tasks? Who may they be? What may they be thinking of?

The same picture can also be used for EVS, while discussing different ways of travelling. This can be done through the following questions:

1. Can you identify the different vehicles shown here by hearing the sounds they make? Can you also make the sounds of some of these vehicles?
2. How many of these vehicles have bells and how many have horns?
3. Which among all these make loud noises and how many do not make any noise?
4. Can you think of ways of travelling other than given in the picture?
5. How do you travel when you go to meet your relatives? Write a brief account of any recent visit to your relatives' home.
6. Ask your friends how they come to school or go to their relatives' homes, and fill this table:

| Friend's Name | Vehicles used for | | |
|---------------|-------------------|---------------------|--------------------------|
| | Going to school | Going to the market | Going to relatives' home |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

7. Which among these vehicles produce smoke?
8. If you have to go for a picnic with your friends where will you go? Which vehicle will you use for this? Tell us who all will you take along? Can you name the vehicles you might see on your way? Make a drawing to show the activities you will do there.

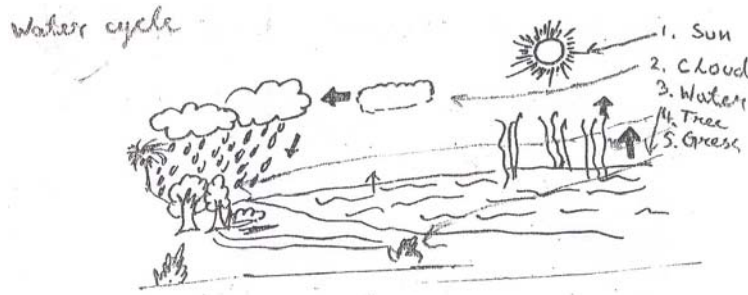
In Question 1, the teacher can assess the children on their ability to identify vehicles by relating them with what they see in their surroundings. In the same question the children can be made to check through their voice modulation if they can make the sounds of these vehicles (expression). In Question 2, the teacher can assess the child on her ability to contrast and compare as to how many vehicles have bells and horns. Question 3 and 4 assess a child's ability to compare. Question 6 also assesses the child's ability to get information from others. Similarly, Question 5 and 8 provide the child a chance to express herself through drawing and writing.

Teachers can also think of some more questions to make this picture-reading activity more interesting. Not only will children come up with different interpretations but will also be able to relate it with their life experiences and share it with their friends.

4.3 Labelling

Picture-reading questions can also be used as labelling exercises. The main objective of a labelling exercise is to make children understand how a system is made up of different parts and sub-systems. It is important to understand that the concept of 'part-whole' relationship is understood only if the pictures are related to the children's context. Picture reading also helps bring out children's interpretation of a real object. Usually, in exams, the pictures given are so complex that the child can hardly relate with the picture.

4.3.1 'Water cycle' : The child has been asked to label this diagram.

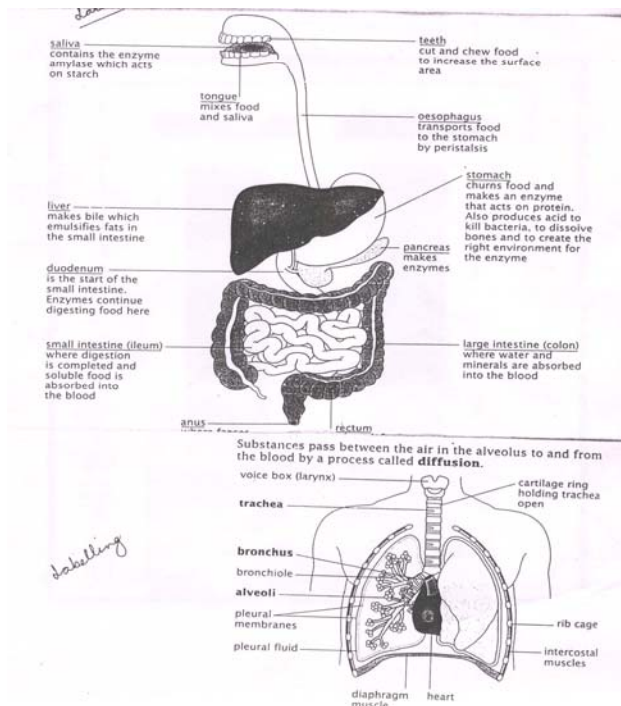


For a teacher it is a 'water cycle' where the child has to label its various processes. Can you guess, through this child's response, if she understood the concept? As discussed above in Section III, 'water cycle' is not a linear process but, rather, has many dimensions which involve the understanding of various other concepts like evaporation, condensation etc.

Do you think this diagram is an appropriate tool to assess the child's conceptual understanding about the water cycle?

4.3.2 The body systems

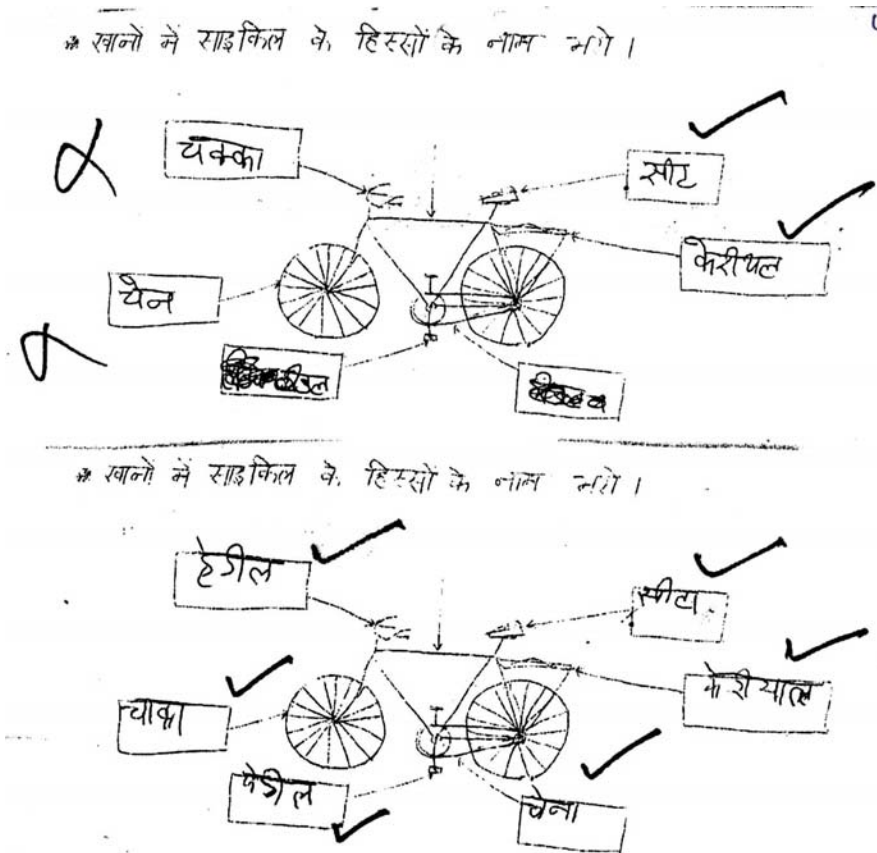
Let us now look at another example of labelling which is commonly used in almost all primary science classes. Most of us would have been taught about various biological systems in primary school, for example – the respiratory system, digestive system etc. How many of us remember the different parts of our respiratory system along with their functions? Do you remember reading about the duodenum, oesophagus, and rectum? Can you point to where they are in your body?



Most of us would draw a blank! Then, why expect children to label such diagrams? Labelling should not mean reproducing memorised information; in fact, children are forced to memorise all kinds of scientific terms for such activities. The primary objective to promote skills of **observation, classification and making associations**, gets completely lost this way.

4.3.3 Labelling the picture of a bicycle

Then what kind of pictures could we use for labelling? The following is an interesting example.



In this activity of labelling a bicycle, the teacher has assessed the children's learning. Let us look at the first response. The spellings are correct, but the teacher has marked some of the answers as incorrect. However, in the second picture though the child wrote incorrect spellings "chaka" and "hedil" for 'handle' it has been marked as correct, because the child knows the parts correctly, even though she may be pronouncing or writing it differently.

The questions, their nature and method of asking, should allow children to give explanations or predictions based on their ideas or experiences. Open and person centered questions are more suitable for this. Such questions require more time to answer as compared to the questions that require simple retrieval from memory. By giving enough time we can increase the quality and richness of the answers produced by children as is clearly evident in the classroom observations in Section III. Responses based on children's experience helps the teacher to understand their level of thinking, and decide as to what he/she might do in the future to help them bridge the gaps in their thinking.

Communication is an important aim of EVS and involves various conventions of representation besides writing, which help in organising information and conveying it efficiently. Graphs, picture-based questions, tables, narratives, etc. could be used to suit particular kinds of information and for assessing children's ability to communicate through different modes.

4.4 Field Visit, Survey, Presentation, etc

Visits are meant not only for merely out and having fun but can offer several opportunities for teachers to assess what children are learning all along — before going out, during the visit and also after returning. Young children learn much more through observing and finding out for themselves — even if it means doing a quick survey of the neighbouring houses or farms to see and record what domestic animal is fed what food, rather than listing answers in the class. In fact, much more learning happens this way, and the visit not only achieves motivation to learn but also opportunities to collect, record, discuss and present information in 'real' and meaningful contexts.

4.4.1 A Visit to the Mandi

This relates to the same group of students who visited the stable (section 3.1). In their next visit to the local market of fruits and vegetables the teacher assessed if students had made progress on the questions they developed and reports they presented. Students showed a substantial growth in their learning. For instance, one group made the following questions to ask the shopkeepers and hawkers:

What is your name? For how many years have you been working here? From what time to what time do you work? Who grows these fruits? Where do you get these vegetables from? Which vegetable is sold the most? Which fruit is sold the most?

Count the number of shops.

Count the number of trollies/carts (*thelas*)

Which fruits are sold by counting their number?

Which fruits are sold by weighing?

The presentation made by a group after the second visit:

"We spoke to a greengrocer aunty. She told us that the vegetables come from Okhla and Kotla markets. All the vegetables are sold after weighing. The Mandi opens from 10 in the morning to 10 in the night. She has been selling vegetables for the last 20 years."

Along with this report the group had made an elaborate drawing of the market. Three groups presented through drawings and narrated what they had shown in those drawings. The other two groups wrote a report and made an oral presentation.

A sample of one child's report (Translated from Hindi):

"In the shop papaya was kept above apples. Lemon and pineapples were kept on one side. Grapes were hung in the shop. There was a song being played in the shop. When we asked questions, the shopkeeper was laughing. He has been working here for the last 12 years. He brings fruits from Okhla market. He did not answer all our questions."

The teacher assessed students on the following indicators:

- Observation and recording – Reporting, narrating and drawing.
- Discussion – Listening to fruit sellers, talking to them and finding out answers to the questions framed by them.
- Classification – Comparing and contrasting arrangement of fruits and vegetables from one shop to another; comparing the sizes of different fruits.
- Questioning – Students were curious to know more about the mandi (*market*). They framed questions keeping.
- Cooperation – Students worked collectively and shared responsibilities.

4.4.2 Questions to a vegetable seller (Worksheet from ‘Looking Around’, EVS Textbook for Class IV, NCERT, 2007)

Such worksheets encourage students to talk to different people in the community and find out about the life of those people and their work.

- Talk to a vegetable-seller in your area. Ask the following questions and make a brief report in the notebook.
 - What is his or her name?
 - How many people are there in his her home? How many children are there at home?
 - What are the names of the children? How old are they?
 - Who among the family members help in selling vegetables?
 - Who stay with the vegetable cart sit in the shop?
 - What vegetables do they sell?
 - What time do they start work?
 - For how many hours in a day do they work?
 - Ask them about any three vegetables that they sell?

| | Vegetable 1 | Vegetable 2 | Vegetable 3 |
|---|-------------|-------------|-------------|
| Name of the vegetable | | | |
| The price of the vegetable | | | |
| Where does it come from? | | | |
| What quantity of the vegetable do they buy at one time? | | | |
| In which month do you usually get this vegetable? | | | |

The teacher can assess students on the following indicators:

- Observation and recording – Reporting
- Discussion – Listening, talking, finding out from other people

- Explanation – Making logical connections
- Classification – Contrasting and comparing
- Questioning – Expressing curiosity
- Concern for Justice and Equality – Sensitivity towards the disadvantaged and differently abled.

4.5 Projects

4.5.1 Example One – Exhibition of Antique Things

This is from a report (translated from Malayalam) written by Rajani, a government primary teacher of Class IV (Paithinipparamba, Melmuri, Kerala), describing the EVS projects she conducted. She refers to the curriculum renewal in Kerala, where children most enthusiastically responded to the innovative projects and activities in and out of school. She notes their amazing effort in setting up the Antique Exhibition in the village, which was also visited by parents and other members of the community, and what learning it offered to the teacher herself. We note the different aspects of children’s learning that can be assessed in this project.

“In my opinion children like the new approach (of teaching EVS) most. My Std. IV children are living examples of this. During the past four years they have visited 15 geographical areas for observing and collecting data. They have visited workshops, houses, fields, ponds etc. with a lot of interest, as part of their field trip.

I had conducted an ‘Exhibition of Antique Things’ as part of Environment Studies. Different implements and equipment were being collected even three months before we held the exhibition. 70 different antique things were collected from 150 houses spreading over various villages. An equal number of modern things were also collected. Children also helped me with this for four days. To my own astonishment a huge collection was made. The collections included things such as gramophone, umbrellas with long handles, wooden slippers, antique jars, telegraph, a tele-printer and various old types of measuring equipment. I have visited the homes of 29 children in this process, through which I was able to understand not only my children, but their home environment as well. Whenever I visited homes I took my other students with me.”

In such a project the teacher can assess children on their ability to take initiative and responsibility to collect the material. The teacher can also note how each group approaches the family/house for the above purpose, and whether the children have gone beyond their own houses. Further, how each child collects the information about each artifact, her ability to listen to the informants, talk to them, express her opinions, and most importantly, learn from other people etc. may be observed. The teacher can then assess the quality of the information collected on the artifacts.

During the exhibition, the assessment can be done on the basis of how each group classified and grouped the artifacts and also on how each group worked upon the tasks like decorating and setting up the stall together. It is important to understand that ‘decoration’ does not mean use of fancy material but rather a display of the items in a meaningful manner. The criteria used for making different sections in a stall could be noted. Next the teacher assesses the

students on their ability to discuss about their collection. When parents are invited to the exhibition, the teacher assesses how they introduce themselves (their group work) to the visitors, how they interact with them and explain (share information) about their collection.

4.5.2 Leaf and Flower House Project

This piece (translated from Hindi) is from the diary of a government primary teacher in Delhi. She describes her process of assessment, for individual children as well as for groups, as part of their EVS project work.

“I had begun the project by making two books with the students - “Leaf House of Our Class” and “Flower House of Our Class.” We had made these books using old magazines and paper. The activity was to collect different flowers and leaves, paste them and write the place, name and date. They also had to write whatever they knew or observed about the tree, leaf, plant and the flower. The project was an on-going activity in which they kept adding leaves or flowers, also from outside the school.

We first had a long discussion on picking only fallen flowers and leaves. Sakshi knew the names of all the trees and flowers so it was a good learning opportunity for me and the other students. The assessment in this activity was more complicated. I assessed them on the basis of things that they had written about the flowers and trees. I focused on the **number of ideas**, **novelty of ideas**, and **expression**. Observing them **discussing** things related to the leaf or the date on which they pasted it also helped me understand the extent of their learning.

It was a group activity since they had to extend the project and take care of it. I gave them assessment scores on **collaborative effort**, **division of labour**, **presentation and organisation of their project book**. Since they are in Class II, I did not mark them on syntax at all; however I did focus on the sentences and spellings to understand the growth in their written expression. When the groups made their **oral presentations**, all the members had to speak. I then also gave feedback on how to logically organise a presentation and told them the importance of **coherent and clear articulation**.”

4.5.3 Making Friends with a Tree

Select any one tree growing near your home or school. It should be a tree that is in flower or is bearing fruit, like a peepal or jamun tree. Observe the tree every day for at least a week. A list of questions is given below to help you to observe more closely. Fill in the worksheet and file it in your folder. Take care not to damage the tree or any of the creatures that live in or around it. If you climb the tree, look after yourself too!

- Name of the tree
- Draw the shape of its leaf (or stick a leaf.)
- What kind of flower does it have? (Draw or stick a flower.)
- What does the fruit look like? (Draw the fruit.) Who eats the fruit?
- When is the flowering season? Does the tree lose its leaves? – If so, which month?
- Which birds visit the tree? (Name or draw them.) Which birds nest in it?
- What insects do you find on it?
- What animals are seen on or around it?
- How tall is the tree?
- What does the shadow of the tree look like? (Draw it here.)
- Is it easy to climb? Have you ever tried to climb it?

- Now that you know so much about the tree, would you call it your friend? What does your tree friend do for you? What can you do for your tree friend?
(This is taken from an Avehi-Abacus Assessment Worksheet used in Mumbai municipal schools)

4.5.4 Self Assessment of Project Work

In some schools projects are assessed by the students themselves and the teacher. The evaluation is carried out after the project is completed and each learner has presented his/her findings to the other children or has put up an exhibition or display. Some questions are given to help each student assess her own work:

1. How long did the project take?
2. Why have I chosen this topic?
3. What do I want to learn in this project?
4. How do I want to work on it?
5. What skills do I need to improve?
6. How do I assess my project?

4.6 Experiments and Activities

4.6.1 Learning all the time - even in the exam hall!

Consider asking children to do something like this while they attempt their exam:

- Go out and collect some leaves. Look at each leaf carefully. Three columns are given below for you. Write the name of the leaf in the column it should belong to:

| Leaves with zig-zag edges | Leaves with pointed tips | Leaves with rounded tops |
|---------------------------|--------------------------|--------------------------|
| | | |
| | | |

- Make a picture of your school. Now go out and see what lies around the school — trees, roads, houses, hand pump and so on. Make sure you have shown such things in your picture and labelled them as well.
- Some pictures have been drawn twice - once as they appear when viewed from the side and again as they appear when viewed from the top. Can you identify them and make the right matches?
- Two pictures given here show the shadow that forms around the same tree. One picture shows the tree and its shadow in the morning and the other shows the tree and its shadow in the afternoon. Please identify which is the morning picture and which is the afternoon picture. Think a little and try drawing the sun in the right position in both the pictures.

Exams need not be a time when one sits stiffly scratching one's head for memorised nuggets of information. It is essential to give the learners an opportunity to show how actively and successfully they can tackle new learning tasks. More such activity tasks can be designed by teachers. The tasks can cut across subjects and include activities related to language and

mathematics. For instance, these are some examples from the NCERT Maths Class III textbook which offer activities for EVS learning.



4.6.2 Tangrams (Math-Magic Class III, NCERT, 2006, p. 67-68,)

Tangram


The tangram is an old Chinese puzzle. From the pieces of the tangram, we can make many shapes of animals, people and things.

At the back of the book you will find a square like the one in this figure. Cut it out carefully and cut the pieces. This set of five pieces is called the 5-piece tangram.


Use these five pieces to make the following figures:


- How many triangles do you have in your set? Are all of them equal in size? Find out.
- Use the two small triangles in the tangram set to get the following shapes:



(1)



(2)



(3)


- Which two pieces of the tangram set are exactly same? Find out.
- Take pieces 4 and 5 from the set and find out on which side of the triangle you can join the other piece.
- Find matching sides among the following pairs of pieces.
 - Pieces 1 and 2
 - Pieces 2 and 4
 - Pieces 1 and 5
 - Pieces 2 and 5

(See figure on page 66)

The 7-piece tangram

Here is the picture of a seven-piece tangram.

You can cut out these pieces and put them together in different ways to make some very interesting shapes.





4.6.3 Observation and Sequencing of Events (EVS Class III, NCERT, 2006 p. ???)

Go to the kitchen and observe something being cooked. What was done to cook it? Write the sequence. Don't forget to write the name of the item being cooked. Look at the notebook of your classmates and discuss in a group.

4.6.4 Measurement (Math-Magic Class III, NCERT, 2006, p. 54)

Guess and Check





Activity 1


- Find some things that look 1 metre long.
- Use your metre-ropes to find which of these things are more or less than 1 metre.

| Name of the thing | More than 1 metre | Less than 1 metre |
|-------------------|-------------------|-------------------|
| Length of table | ñ | ñ |
| Width of table | ñ | ñ |
| Width of door | ñ | ñ |
| Length of door | ñ | ñ |

Activity 2

Some Class III children have marked a 1 metre height on the wall of their class.

You can also mark 1 metre on your class wall.



4.6.5 When your grandparents were children (EVS Class III, NCERT, 2006 p. 63)

- (i) Ask some elderly people if there were they can name plants which they had seen when they were children but are not seen these days. Also, ask them if there are any plants seen these days, but which were not seen earlier.
- (ii) Ask elderly people what kinds of utensils were used earlier. What were those made of?

4.7 Making Good Guesses and Hypotheses

The questions given below will help children look at similarities and differences, to compare and describe situations, and speculate about relationships and patterns. In Question 1 children will have to think of two plausible explanations for the given situation. This challenges them to make logical connections between evidence and the hypotheses they propose. The purpose of Questions such as 2 and 3 is not to arrive at a single correct answer but to give space to children to think and, on the basis of their experiences, make and strengthen new linkages and images in their minds.

The responses of children should be respected to encourage them to express themselves and become conscious thinkers. These responses will also help teachers in understanding the thinking process of children and the way they construct their knowledge. Questions like 3 and 4 help children to evolve preliminary understanding of some concepts without bombarding them with concepts which are not age appropriate.

Q1. Shanti's grandfather told her that as a small child he used to see many more birds like the sparrow and the myna than are seen today. Can you make two possible guesses as to why their number is less today?

- 1.
- 2.

Q2. Fatima and Irfan wanted small, round and smooth pebbles to play 'gitte' (a game played with pebbles) with. Fatima said "We can collect some from the river side. I have seen many good smooth pebbles there." When they reached the river side Irfan observed, "When we are a little far from the river such pebbles are not found." Can you think of the reason why such round smooth pebbles get formed near the river side?

Q3. Mamta feels that the grass and small plants growing near her school wall are growing on their own. They have not been planted by anyone. A small berry plant was also amongst them.

Can you also think of a place where plants are growing without being planted?
Why do you feel that they have not been planted by anyone?

How do you think the seeds of the berry plant could have reached that place? Think of two possibilities.

- 1.
- 2.

Q4 Bilal and Aditya, students of Class V, were trying to dissolve mustard oil in water. This is a part of their conversation:

- Bilal : Look water has become yellow in colour and oil is dissolved in water - (1)
 Aditya : Bilal, look, can you see yellow droplets of oil on the surface of water?
 Bilal observed carefully.
- Bilal : Yes, oil did not dissolve in water. - (2)
 Bilal : What will happen if we add mustard oil in hot water? - (3)
 They put a few drops of oil in a glass of hot water and stir.
- Bilal : Oil still did not dissolve in water.
 Aditya : What will happen if we take a few drops of oil and a few drops of water. - (4)
 Bilal put two drops of water and two drops of oil on the lid of his tiffin box.
- Bilal : Look Aditya, water spreads more than oil, but still oil does not get dissolved in water.
 Bilal : When milkman puts water in milk, we do not see water droplets. - (5)
 Aditya : ven the sugar grains get dissolved in water on stirring. - (6)
 Bilal But tea-leaves do not get dissolved in water - (7)

In (1) the child had observed a slight change in colour of water. However, he was not able to notice small droplets of oil on the water surface.

In (2) the other child had helped his friend in focusing his observation.

In (1) and (2) children are observing and are trying to give an explanation. It is the first step in formulating/ making hypothesis. In (3), (4), (5) and (6) children were raising questions and were trying to investigate. They were trying to build connections (drawing similarities (5 and 6) and differences (7)) in different situations. They were applying knowledge gained in one situation to help understand a problem in the other. It is the second step in making hypothesis. Children do not naturally formulate hypotheses. But there is a gradual progression. As teachers, how do we come to know that children can make good guesses or hypothesis?

The following indicators (Harlen and Elstgeest, 1998) show that children have started making a hypothesis:

- Children learn to observe and identify a feature of an event or phenomena which is relevant to giving an explanation.
- Connecting the phenomena with a relevant idea from previous experience.
- Providing a testable explanation and testing it.
- Recognising that there can be more than one possible explanation of an event.

4.8 Using and Creating ‘Real’ Texts.

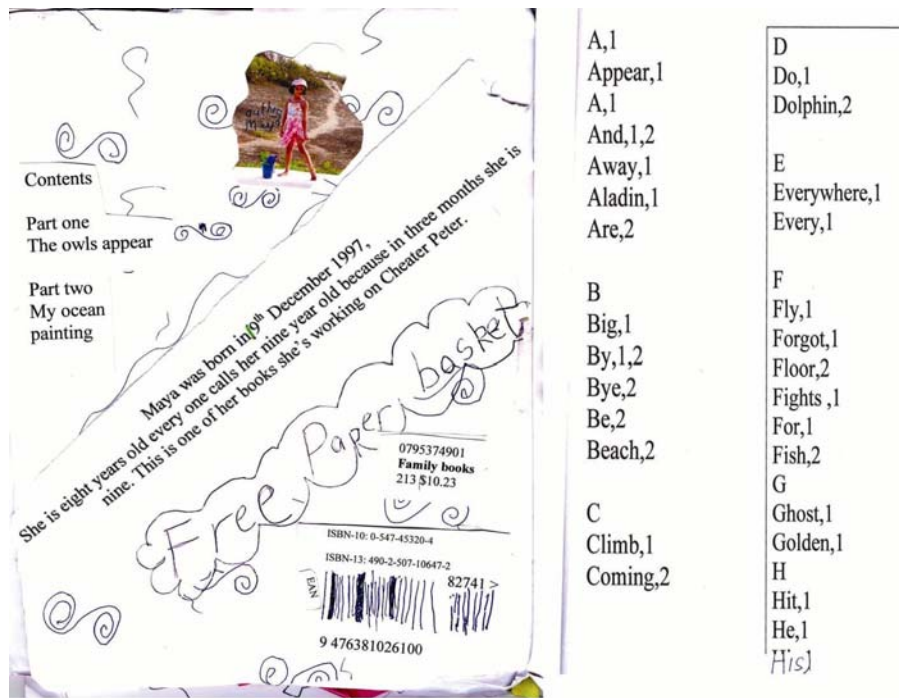
Exercises and assessment tasks that encourage children to read and create ‘real’ texts lend tremendous motivation to the effort. For instance, teachers often use newspapers to make children look for different types of information and data. They could look regularly at the temperature chart to see how the forecast and the actual figures correlate with their own experience of the day being ‘hot’ or ‘cool’ etc. There is no expectation at this stage for them to fully understand the concept of ‘temperature’, which happens later in upper primary school. Teachers can thus keep track of how children’s ability to read or use data from other sources develops. Similarly, they could also make their own newspapers or bulletin sheets, individually as well as in groups, and share them with the rest of the school.

What is important here is the fact that what they are asked to create is not just an assessment task or ‘assignment’ but is actually **used in a real context** – in the classroom, the school or even the community. For instance, children in some cities have actively participated in

campaigns against polluting firecrackers, or to express their concern about the right to education, about child labour etc.

4.8.1 Creating ‘My Own Book’

A sample of the details a child can observe and creatively produce in her own book is shown here. The 8½ year-old had been encouraged by her teacher to carefully observe ‘real’ books as a group activity. Later she made a book as a gift for a relative, and wrote two poems, made drawings for it, and also created her own ISBN code, a note about the author, including a proud mention of the author’s ‘forthcoming’ book. She even painstakingly made an ‘index’ at the end, each word alphabetically arranged, which she had done on her own initiative, whereas children at this age are normally sweating over spellings and are bored with repetitive exercises on the alphabets. It is clear that the learning that has happened from this real task is so much more intensive and richer than what normally takes place in rigid test questions or irrelevant homework exercises.



4.8.2 Evaluation Activity: Prepare a Press Report on the Gujarat Earthquake

The following example is an innovative examination ‘activity’ from Kerala, which asked children to make a press report on the Gujarat earthquake after reading different reports received from varied sources, such as, the observatory, a government office, historical records, etc. It is important to note that this evaluation activity also helps children to learn about the linguistic styles used by different organisations. This exam question helps them learn how a fax is written, in what language the observatory writes or how would a telephonic message from the State office convey the urgency of the situation

News received from different sources about the earthquake of Gujarat is given to you. Prepare a press report on the basis of the following materials provided:

1. Fax message from government offices
2. Note from a press release on the earthquake
3. Urgent message from the weather observatory
4. Information on the history of old earthquakes
5. Telephonic message from Gujarat

4.9 Portfolios

A teacher of Class IV in a state funded school maintained EVS portfolios for all thirty-two children in her class. Even though she had no budget and no almirah for this, she made innovative use of the walls of her classroom. With the help of children, she pasted newspapers on the walls and also made pockets on it. Every child chose a pocket and wrote her name on it, and slipped her work in the pocket which became her portfolio. As the school year progressed, the collection in the portfolio increased, with things, such as -

- Written material – worksheets, samples of **creative writing**, tests, **reports/write-ups of out-of-classroom activities**, like a visit to the nearby bank, stadium, etc.
- Various drawings – plants, favourite flower, animals, festivals.....
- **Art work** like paper folding, paper cutting and Origami.
- Greeting cards prepared by children during the thematic plan on festivals.
- **Letters to the child** from other children and even by the teacher.
- Record of story books read by the child titled '**Books which I have read**'.
- **Collection** of leaves, textiles, etc.
- **Diary paragraphs** written by children, communicating their feelings and understandings in a non-threatening way.
- Samples of each child's **Self-assessment sheets** on which children have made their own questions and evaluated their answers; also short formats in which they say what problems they still face.

Portfolios should not contain only the best work but all kinds of work, to show the growth and progress of the child over the entire school year. Such a collection shows to teachers and parents what the child has accomplished and is an evidence of the *actual work* done rather than just the test scores. At the end of every term the teacher looks at each child's portfolio to assess her progress and gives specific and useful feedback to parents. Such a collection of the child's work provides insights to parents about their own child and helps them discuss with the teacher the child's achievement, progress and growth.

4.10 Question and Answer Formats

In classroom discussion children must get adequate opportunity to communicate their thinking orally while in paper-pencil formats they do so by writing. It is through answering thought provoking questions that children get space to express their opinions and give arguments. Thus, the questions should be such that they help children to become aware of their own reasoning and to use evidence more consciously. We are all familiar with what we have been calling 'traditional' questions, and we analyse some examples here to see how these do not assess a child's understanding of a particular concept.

4.10.1 Traditional questions on abstract concepts - 'living' and 'non-living'

This is from a term paper for EVS Class III of a Municipal Corporation school. The teacher has made these questions to assess the concept of 'living' and 'non-living'.

- Q : Write any two characteristics of living beings.
 Q : Name any five non-living things.

STUDENT-I

सजीव चीजों के बारे में कोई दो बातें लिखो।
 1) पैरु कांसा। जैना।
 2) फूल। आम। लता।
 4) क चार पैरवाले कुता।
 2) घ. पैरवाल। गकड़ी।
 5) क साँप। आम।
 3) कुता। पुँडा।
 ग बकरी। अनाज।
 घ गुँगा। आम।
 पाँच निजीव वस्तुओं के नाम लिखो।
 6) पेच। कुँसी। पतंग। जाल। पन्ना।

STUDENT-II

सजीव चीजों के बारे में दो बातें लिखो।
 1) डीवाँ में चक्कर है।
 2) जिनमें कोई साँप होता है।
 पाँच निजीव चीजों के नाम लिखो।
 क चार पैरवाले चीता। कुता।
 2) घ. पैरवाल। कौकल। मीरकरी।
 5) जीरे बनाओ।
 क साँप। आम।
 2) कुता। पुँडा।
 3) बकरी। अनाज।
 घ गुँगा। आम।
 6) पाँच निजीव वस्तुओं के नाम लिखो।
 कौसी। डूँडा। पसीपी। डीरे। दोबाला। औ। र। वीसी।

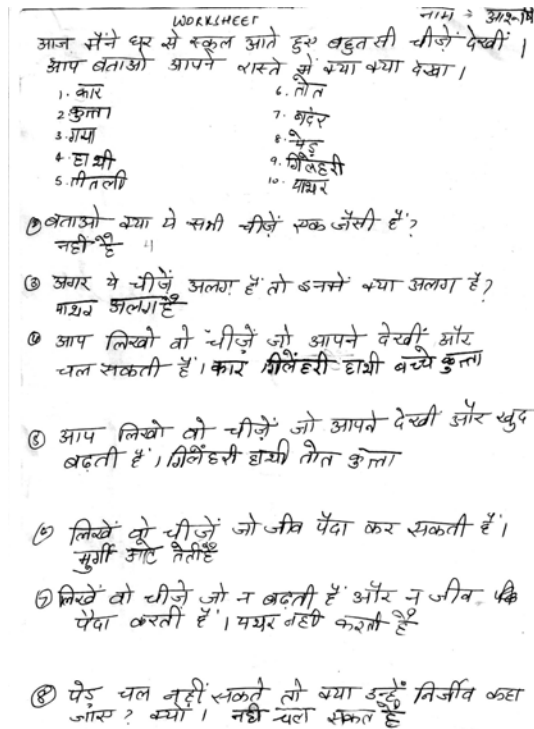
These responses of two children show that they have tried to articulate what they understand about the abstract concepts, but have been marked incorrect. The teacher focuses on the spellings of the words rather than their ideas. Also, the answers are not in a language natural to children: "Phoola Saans Leta Hai", "Paeda Saans Leta Hai." Can you see how the nature of questions influenced their responses?

These unproductive questions compel them to recall some pre-determined answers. Do you think such questions allow students to use their logical thinking skills and investigation?

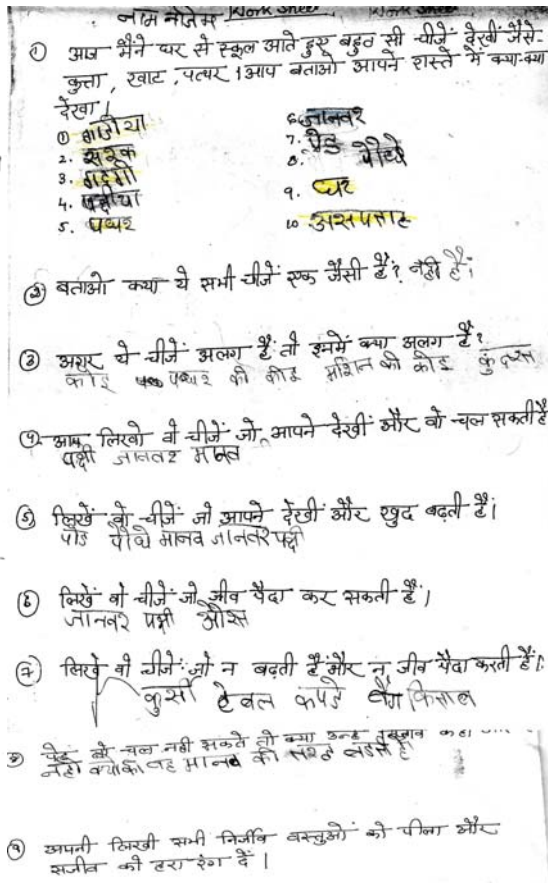
4.10.2 Open ended questions to see their understanding of 'living, non-living'

These are two examples from the answer scripts of the same students. But one can see how the nature of these questions is different; these questions are open-ended and person-centered as the child has been asked to draw from her own experience. Question number-1 asks them to collate from their experience.

Student-I



Student-II



Nazim's worksheet shows that he can articulate in his own words and think why the things he observed differ from each other. He writes (for question no-3), "Koi Pathhar Ki, Koi machine, koi kudrat ki." He also writes that trees are different from man-made things, even if they don't walk, because they grow like human bodies.

It is evident here that when a question is framed differently, it provokes students to reflect on their own thinking. A student asked whether wood was to be categorised as something which has life. Instead of answering, the teacher posed this question to the whole class. One student responded this way, “Jab lakadi paed main hoti hai to usmein jaan hoti hai, warna nahin hoti.”

In the above example student-2 writes, “No” for the second question and gives the following reasons “koi kudrat, koi patthar, koi machine ki.” This requires categorising, contrasting between two observed things and their comparison. Similarly, in Question 4, 5, 6 and 7 the child is being assessed on her skills of observations and reporting. In Question 8 and 9 assesses her ability to classify and offer explanations.

4.10.3 Example 3

In a JNU study of Delhi Corporation Schools, the nature of the question on the same concept of ‘living, non-living’ differed. The children of Class V were asked the following questions in a paper-pencil test:

Q. This is a list of some of things -Television, Cycle, Tree, Sun, Hair, Toy, Crow, Fish.

Out of these write things that:

Grow _____

Breathe _____

The responses show that children had carefully reflected upon the questions before writing the answers. Some of these responses are very interesting and help us learn a lot about the way children think. For instance, most children wrote that a fish and a crow ‘breathe’ but they did not write these two in the category of things that grow. Such observations show that children are giving meaning to their experience of the word ‘grow’ – and that the child might not have seen a ‘baby crow’ or ‘baby fish’. Indeed, how many of you can remember having observed a fish or a crow grow?

The example also shows how the children derive their understanding on the basis of the observations they make. Therefore their reasoning as well as classification was based on this. It gets reflected in their answers like “sun, moon, cycle and hair” as things that grow and by considering that trees are less active than animals.

On the question of ‘breathing’, most children seemed to believe that a tree grows but it does not breathe. In fact, many children expressed in their writing that trees are ‘less alive’ than animals. Some children had also written that ‘sun’, ‘moon’ ‘cycle’ and ‘hair’ grow. It is obvious that ‘to grow’ or ‘badhna’ for them holds many different connotations and meanings – the moon of course ‘grows’ in size, while the sun or the cycle can be seen to ‘move ahead’ which in Hindi is called ‘(aage) badhna’.

When the format or language of a question actually gives children a chance to think and express themselves, they respond naturally, according to what they believe and what they experience. Their understanding of the world is based on their perceptions and observations - it is for us to draw that out through how we ask our questions.

Example 4 Yum-yum rice (Math-Class III, NCERT, 2006 p. 117)

Yum-yum Rice

Shugoto heard about a new dish on the radio. He wants to try making it. When he notes down how to make it, he gets confused. This is what he notes down:

- (1) Pour **2 spoons** of water in the pot
- (2) Boil the water and add
 - **1 pinch** of *daal*
 - **half kg** red chilli powder
 - **1 bowl** salt
- (3) Now put **a spoon** of rice
- (4) Add **2 peas** and **8 glasses** of mustard seeds
- (5) Finally add **1 kg** of onions

Mix everything and boil for 15 minutes. But Shugoto feels there is something VERY wrong in the amounts of everything!!

✳ Help him match the things with their right amounts.

| | |
|----------------|-------------------|
| 1 kg | rice |
| half kg | <i>daal</i> |
| _____ | peas |
| _____ | water |
| _____ | onions |
| _____ | salt |
| _____ | mustard seeds |
| _____ | red chilli powder |

Example 5 Creative Expression (EVS Textbook Class III)

- Ask your friends when and how they decorate?
- What would happen if birds could not fly but only walk on their feet?
- If you could fly like a bird where would you like to go? What else would you do?

When students freely express themselves in writing, they come up with their intuitive ideas or alternative frameworks. Some of these responses will show that they need the teacher's help for conceptual clarity. If we ignore their intuitive ideas or alternative conceptions, children may hold on to them without any change, repeating the 'right' answers by rote but still believing in their own versions. The value of open questions is normally not appreciated by teachers, especially as tools to learn about children's ideas.

Section V

5. Records of Students' Progress

Assessment is not meant to compare and rank children against each other or against some fixed norms. Positive assessment should help teachers see how well each child is able to perform, to track her progress and give feedback to ensure further improvement. Assessments must not foster negativity, jealousies and competition, or promote unfair means to win the race and so on. It is necessary to assume and accept that each child can grow and develop to her full potential if learning opportunities are made available. It is this self-growth and development that needs to be assessed and reported. Assessment should be such that it motivates every child to give her the belief that she can do better.

5.1 What Learning 'Outcomes' for All Children?

How can Environmental Studies help *all* our children, all those who struggle to go to school, and even all those who still cannot do so; those for whom the main purpose in life is going to school, as well as those who aspire for a school that can support life, with meaning and dignity? It is up to the teachers and makers of the syllabus and textbooks, to shape an enabling *learning environment* for each child, wherever she may be located.

No syllabus has been given for EVS in Classes I-II, and it is expected that Language and Mathematics will incorporate themes for the development of concepts and skills in areas broadly related to EVS. The NCERT syllabus for Classes III-V does not spell out any 'outcomes' for each theme. However, schools must ensure that suggested activities or discussions will be conducted because only then can it be ensured that learning will happen. For instance, at several places the syllabus activities indicate that children need to conduct specific observations. However, the purpose is not to collect random similarities or differences, but to *seek information from the object to extend children's ideas and understanding*. For instance, to look specifically at the shapes of leaves, the edges, the patterns of lines in it, etc. to know *more* about them. Thus *specific purposes will need to be spelt out when activities are designed*. Similarly, young children ask many, many questions which help in their development, but which are not all deep, and which do not allow them to understand things at that stage. However, *EVS classrooms will need to provide opportunities to children to be able to progressively ask higher order questions* that require different levels of reasoning and investigation, by planned activities and exercises to get them to phrase their questions, to answer, discuss and investigate them. These are basic to the learning process in EVS and yet, unfortunately, most classrooms are not designed to ensure this. How then can we expect all children to learn? Finally, how should their learning be recorded and reported?

5.2 Reporting the Child's Progress: Some Report Cards

We looked at the progress cards/reports developed by some well known schools of Delhi and the Kendriya Vidyalaya Sangathan. Some of them use words such as 'Report Card', 'Progress Card', 'Development Profile' etc, and their feedback is not limited to one page. All of them present a qualitative feedback in the form of comments and grades on specific indicators. Let us look at them individually to find out if they communicate adequately to the parents about their child's learning, development and struggles.

5.2.1 Example 1: What do These Competencies Mean?

School 1 EVS Class III Report Card

| Subject Competencies | Term I | | | Term II | | | Term III | | | SEE | Final Assessment |
|-------------------------------------|--------|-----|-----|---------|-----|-----|----------|-----|-----|-----|------------------|
| | UT | ASN | PRO | UT | ASN | PRO | UT | ASN | PRO | | |
| EVS | | | | | | | | | | | |
| 1.Observation (Obs) | | | | | | | | | | | |
| 2. Idenification (Id) | | | | | | | | | | | |
| 3.Discovering Facts By Oneself (Df) | | | | | | | | | | | |
| 4.Group Activity/ Application (Ga) | | | | | | | | | | | |
| 5. Oral | | | | | | | | | | | |
| GRADES | | | | | | | | | | | |

UT- Unit Test, ASN- Assignment, PRO- Project S.E.E.- Session Ending Examination

As seen, there are 5 competencies given in the table. Teachers do not asses only by giving tests; they asses all the competencies separately by giving assignments and projects. Let us look at one question paper used to assess the above specified competencies and see if we can understand the basis for asking such questions. There are nine questions from the first term Unit Test of Class III.

Readers to Reflect

Can you match the following questions with the 5 competencies given in the table above? Which question assesses what competency?

Q. 1) Write a function for each of these body parts.

| | |
|-----------|----------|
| Body part | Function |
| Mouth | |
| Nose | |

Q. 2) Draw a garden and name three things that you see in a garden.

Q. 3) Underline the correct word

The sun rises in the east/west.

Q. 4) Fill in the blanks with the words given in the box

| |
|-------------------|
| Vapours, locating |
|-------------------|

- i) The map helps in.....a place.
- ii) On heating, water changes into
- 5) What are the three forms of water?
 - i) S
 - ii) L
 - iii) G
- 6) Mark the correct statement and cross (x) out the wrong ones.

- i) We should have a dustbin with a lid.
 - ii) Eating place should be clean.
 - iii) We should play on the road.
 - iv) Water has no shape of its own.
7. Write any five uses of plants.
8. Draw any five sources of water.
9. Draw and show the main directions.

(The school says: Q 1, 2 - Observation; Q 3-5 Identification/understanding; Q6, 7 - Discovering Facts; Q 8, 9 – Group Activity/Application)

Now check your guesses against the competencies given above. What is your view? Does the child need to ‘observe’ to write the functions of body parts? Does writing that “the sun rises in the east” reflect any ‘understanding’? Does giving the ‘three forms of water’, even with the first letter of the word given as hints, really assesses the child’s understanding? Can you think of a skill which develops or can be assessed by a tick on this statement – ‘we should have a dustbin with a lid’? What are the skills involved in writing the ‘five uses of plants’?

Surely, we seem to be at loss of words and perhaps some ideas. Formative assessment is not about choosing specialised terms without getting into the context and the nature of the activity. These questions do not give any opportunity to the child to think, observe, argue or analyze. Assessing a child for her observational skills requires opportunities for making ‘observations’. Similarly how can ‘Group Activity’ be put along with ‘Application’? Drawing any five sources of water is neither an application based activity nor a group activity, but is listed as that!

We need to reflect and ask ourselves what we mean by assessment. Some other schools are attempting more elaborate formats with personalized feedback to parents, but not necessarily making more detailed assessment of children’s learning.

5.2.2 Example 2: What does ‘good’ or ‘v. good’ tell us?

School- II Milind’s ‘Report Card’

EVS/SCIENCE

| | Semester – I | Semester- II |
|-------------------------------------|--------------|--------------|
| Observation Skills | G | G |
| Comprehension/Understanding | G | VG |
| Application to real life situations | VG | VG |
| General Awareness | VG | VG |
| Recall/Retention | VG | VG |
| Ability to Correlate | VG | VG |
| Ability to Analyse | VG | VG |
| Class Discussion | VG | VG |
| Collection Skills | VG | VG |
| Project Work | VG | VG |
| Group Activity | VG | VG |
| Participation | VG | VG |
| Effort | VG | VG |

| | | | |
|--------------------|-----------|---------------------|---------------------|
| Presentation: | Oral | VG | VG |
| | Written | VG | VG |
| | Pictorial | VG | VG |
| Curiosity | | G | VG |
| Test Grades | | A+ A+ | A+ A+ |

G-Good, VG- Very Good

The school uses the same indicators to give feedback on EVS/Science and Social Science separately. This graded feedback is supplemented with some comments given by the teacher:

“Milind’s understanding skills are very good. He answers very systematically and with confidence during discussions. He is able to relate the concepts spontaneously to the surroundings. He presents his work methodically and well on time. He works hard to present neat work.”

What does saying ‘very good’ or ‘good’ for a given competence, say, for ‘understanding skills’ tell parents about their child’s learning ?

The comments given by teachers do not give any specific information about the child’s engagement. It does not tell us anything about the concepts which were dealt with in class or the activities conducted. For instance, we do not get any information for our queries -Why has the teacher given ‘very good’ in ‘project work’ and what was actually done by the child?

Is it sufficient for a parent to know that the child’s teacher gives ‘good’ or ‘very good’ to the child? What purpose can these two remarks serve? How can each child’s learning, in all its diverse facets be labeled in two categories?

5.2.3 Example 3: Do we know what the child has learnt?

School-III Report Card

EVS

| OBSERVATION | Teacher’s observation |
|--|-----------------------|
| A) Can compare according to various attributes <ul style="list-style-type: none"> - only when the criteria are given <ul style="list-style-type: none"> ○ with the help of on advanced peer <input type="checkbox"/> ○ with adult supervision <input type="checkbox"/> ○ self –directed <input type="checkbox"/> - even when the criteria are not given <ul style="list-style-type: none"> ○ with the help of an advanced peer <input type="checkbox"/> ○ with adult supervision <input type="checkbox"/> ○ self - directed <input type="checkbox"/> | |
| B) Can contrast when the criteria are mentioned <ul style="list-style-type: none"> - with the help of an advanced peer <input type="checkbox"/> - with adult supervision <input type="checkbox"/> - self directed <input type="checkbox"/> | |
| C) Can classify when the criteria are mentioned <ul style="list-style-type: none"> - with the help of an advanced peer <input type="checkbox"/> - with adult supervision <input type="checkbox"/> - self directed <input type="checkbox"/> | |
| D) Can classify even when no criteria are mentioned | |

| | | |
|---|--------------------------|--|
| - with the help of an advanced peer | <input type="checkbox"/> | |
| - with adult supervision | <input type="checkbox"/> | |
| - self directed | <input type="checkbox"/> | |
| E) Demonstrates curiosity towards observation | | |
| - observes, but expresses only when probed | <input type="checkbox"/> | |
| - shares findings with others | <input type="checkbox"/> | |
| - observes minute details | <input type="checkbox"/> | |

This school has developed a long list of indicators for every area of competences. All the indicators are also categorised into further grades. The example for ‘observation’ is given here. Similarly there are other areas of competence – Data collection, Reasoning, Evaluation and Collaborative learning.

This progress sheet can give us an idea about the effort that the teacher must need to fill it. Yet, it does not tell us what the child did learn? What were the struggles that the child faced or what were the stages that the child went through at different points of time?

What would be helpful are specific comments about some activities done in class, and also about the child’s involvement in those activities.

5.2.4 Example 4: Personal Comments, Not much on Learning Progress

School IV Report Card

| Processes | Meets age/development level requirements | Areas that require support | Demonstrates strengths in a variety of familiar situations |
|---|--|----------------------------|--|
| Interest and basic concepts | | | |
| Observations and questions | | | |
| Project work | | | |
| General awareness | | | |
| Expansive or inventive thinking and problem solving | | | |
| Applications | | | |
| Assignments | | | |

This table does not specify the concepts for which the child could meet all age/ development level requirements. If, for instance, the child requires support for assignments, this report does not spell out the nature of support required. It also does not indicate the difference, if any, in the kind of support that the child requires for different kinds of assignments. Some of the comments given by teachers of this school are reproduced here:

- iv) Anil is a keen learner and is progressing steadily. He is blessed with vivid imagination. “Bhaiya universe का तो birthday नहीं आता होगा?
- v) We found him engrossed in making a colourful rangoli for “Patterns and Designs.”
- vi) Ashwini shows enthusiasm in the themes that interest him.

- अपप) His queries cause brainstorming for the group, भैया banana को तो seeds नहीं होते उसका पेड़ कैसे उगता है ?
- viii) दीदी हर समअम में कोई pattern है।
- ix) Often we find him sharing his knowledge and experience with the group. He loves to work with the group.
- x) She is not hesitant in asking questions.
- xi)

These personalized observations indicate that the teachers carefully observe each child in order to assess her learning. It also helps them in recognizing individual strengths, traits and interests. The teachers engage with the children very deeply. However, a careful look at these comments shows that these comments have the danger of becoming ritualistic. When we went through a large number of reports we found that teachers normally used very general statements with only few specific observations on a particular child.

The statement – “He is very enthusiastic and curious and loves to experiment” – does not tell anything about the *activities* for which the child shows any enthusiasm. There is no mention and analysis of the child’s learning, the activity done and the objectives being met. In all of these profiles the idea of progression is missing. One cannot make out much about the trajectory of development of the child in the course of a year and the nature of support needed. Though it is significant that these reports do not discourage children by pointing out their ‘weaknesses’ (which, incidentally, does not have to be the child’s weakness but is more likely to be the ‘weakness’ of the school or the entire system!), yet there could be more effort to identify the challenges before children and the support that can help them further.

5.3 Progress Report with Grades for Indicators

Finally, look at the following examples of two progress reports of children from Class III and Class V on each of the EVS indicators (given in Section 2.8). The progress of students is reported twice a year on the basis of the following grades:

- 1 - For a given indicator, the child needs a lot of support from adults and peers.
- 2 - The child performs adequately but can be motivated to do better with proper feedback.
- 3 - The child’s understanding or skill is well developed with respect to her age.

5.3.1 The Half Yearly Progress Report of Bisaniya, a student of Class III

| | |
|-------------------------------------|---|
| a. Observation, reporting: 3 | Bisaniya observes fine details. When asked to look for objects with patterns of leaves and flowers, she observed floral patterns on many things at home - bed sheet, dresses, crockery, bathroom tiles, and she also recorded her observations in a table. She also observed birds and animals around the trees in the school garden and wrote detailed reports. |
| b. Discussion: 1 | Bisaniya has original ideas, which she shares only when asked, and is hesitant to participate in group discussions. In the unit on Food she listened to her group members, but needed a lot of probing for examples about food items which are eaten raw, fried and baked. If family members involve her in discussions and decision-making, she will start sharing her views more confidently. |

| | |
|----------------------------------|---|
| c. Expression: 3 | <p>Bisaniya expresses creatively through drawing, poems and clay work. She drew the picture of her house, decorated it with Rangoli patterns, and wrote a nice poem.</p> <p style="text-align: center;">मेरा घर कितना सुंदर रहते हैं हम इसके अंदर इसकी छत पे रहते बंदर उसके सामने है बड़ा समुंदर</p> <p>She used good colour combinations and designs when she made a clay- house.</p> |
| d. Explanation: 2 | <p>She tries to give her own reasons and explanations. On thinking about why the ladder is removed from the houses at night (p.118 Class III NCERT textbook), she responded – “to keep the dogs, wild animals and thieves away”.</p> |
| e. Classification: 2 | <p>She developed many categories about where we see birds, like in water, on tree, in the house and on the ground. However, she could not list similarities between the birds living on a tree. She needs more opportunities to look for similarities and differences.</p> |
| f. Questioning: 2 | <p>Bisaniya rarely asks questions in the class, but I remember one interesting question she asked “How is it that we get cold water from the hand pump even during summer months?”</p> |
| g. Analysis: 3 | <p>Bisaniya tries to predict and suggest hypotheses about various things. In response to the question - what would happen if all the birds started walking on earth? (p.56 NCERT Textbook), she wrote about traffic congestion on the roads, more cat and bird fights, a duller sky, empty trees, safety of birds and their eggs etc.</p> |
| h. Experimentation: 1 | <p>Bisaniya does not show much interest in making things and experimenting with materials. During the theme Travel, she did not make the toy train using empty matchboxes. When the group made sprouted <i>moong</i> (p.65 NCERT Textbook) dish, she did not participate. She needs encouragement to do such activities independently.</p> |
| i. Concern for Justice: 3 | <p>Bisaniya is very sensitive towards others’ needs, emotions, strengths and weaknesses. In her clay house she made a ramp and said - it is for people on a wheel chair. After reading the poem “I have a sister, my sister can not hear” (p.45 NCERT) she wrote a poem about her classmate Rishabh (who cannot see), showing how carefully she had observed his difficulties and everyday victories.</p> |
| j. Cooperation: 2 | <p>She does not take initiatives in group settings. She likes others to take the lead and responsibilities, but does her work quietly. She remains at ease with group members and shares materials. But when it comes to ‘presentation of the work’ she withdraws, which creates problems, as all members are expected to present.</p> |

It is important to emphasize here that we need to give a qualitative feedback to the parents about their child's learning. We must completely do away with marks. A qualitative feedback gives information to the parents about what the child did in that quarter and which are the areas in which the child needs support. Very importantly, such a detailed feedback also tells parents about the kinds of activities done in the class. This kind of feedback becomes a reference point for the family to know about their child's progress, and struggles, and the kind of support they can provide to the child.

The following report of a student of Class V reflects the progress in the abilities and the different activities now performed in a higher class as compared to those in the earlier example from Class III. For readers not familiar with the NCERT textbooks it also gives an idea of the kinds of lessons and activities these contain.

5.3.2 The Half Yearly Progress Report of Gurmeet, a student of Class V

| | |
|---------------------------------|---|
| a. Observation 3 | Gurmeet observes fine details of objects and events. During the class visit to a pond, he showed that the green colour of water was because of algae. He also made a long list of plants, animals and insects in the pond and presented it in a table. He even noticed that ducks and swans had skin between the toes. |
| b. Discussion 1 | Gurmeet is not a patient listener. He wants to force his point of view on others. During the group discussion - what MCD should build on the land near the school and why? - he remained adamant that a park should be built and did not listen to what others had to say, so no consensus was reached. I will change his group and put him with children who are more confident and expressive during discussions. |
| c. Expression 3 | Gurmeet amazed everybody by miming how 'Bichandri Pal' would have climbed difficult mountains and what she would have felt on reaching the peak. The different emotions on his face like determination, physical stress, and joy seemed very natural. |
| d. Explanation 1 | Gurmeet is curious but is not able to make logical connections in offering explanations. He was not able to make the connection between the presence of moisture and rotting of bread even though he had set up the experiment in different conditions with group members. |
| e. Classification 2 | Gurmeet is able to develop categories by comparing and contrasting situation. In the class activity on solubility, he categorised substances not only as soluble and insoluble in water but also as partially/slightly soluble and soluble only on heating. |
| f. Questioning 3 | The questions he asks often force me to think about my own concepts. He asked - why is it that we blow on a candle to put it off but we blow on a <i>chulha</i> to make the fire stronger? He also wanted to know why rickshaw pullers and people who build houses work so hard but are the poorest. This ability and curiosity needs to be nurtured by giving him more opportunities to explore books and resources. |
| g. Experimentation 3 | Gurmeet enjoys manipulating and improvising with materials. He enjoyed and took the lead in collecting and putting different things in water for the 'floatation and sinking' unit. He also made a very nice sprinkler using a plastic bottle, which all the children enjoyed. |
| h. Analysis 1 | Gurmeet needs support in predicting and making hypotheses. He did not infer, from the stories and pictures given, that the variation in different houses in different regions was due to differences in climate. |
| i. Concern for Justice 2 | Gurmeet needs more support to realize the challenges of differently abled children. He once hid Anmol's crutches and did not return them till he started weeping. However he has stopped calling Jeevan 'pagal' after I sat and talked to him about the autistic child. |
| j. Cooperation 2 | Gurmeet is gradually learning to work with others. During the project on saving water, he took his assigned responsibility to collect data about the taps leaking in the toilets. He is now sharing his things too. |

When teachers keep a diary to record children's activities and abilities, even writing some lines about 3-4 children everyday, they have a record of each child at the end of every month. From that record and their observations they can write such a report card for every child – making note of what the child has done and what she can do further with specific help. In addition, the portfolio of each child, which contains all the work she has done in class, gives a good idea to the teacher and parents about her progress. You will notice that giving some personal details about a child is important – it shows that the teacher has taken personal interest in the learning of each student and, more importantly, *motivates the child to do better*.

5.4 Separate Grades for Each Indicator

You would have noticed that the report cards talk about a large number of indicators of learning and report *separately* on each of these. Assessing on a large number of indicators is good. It captures quite a range in children's level of performance and reflects a real picture. **We should not look for one overall grade by combining the grades of all the indicators.** One, because the weightage of each indicator is not necessarily equal. Secondly, if we sum up the performance on different indicators and conflate it into one overall grade, the real picture gets blurred. Also the person gets labelled as 'good' or 'poor' without reflecting her actual range of performance in different areas. Such labels make little contribution to the growth and improvement of a person's abilities. For instance, in some areas a student may be a good performer (e.g. grasp of a concept) and in others she may require support (e.g. oral presentation of work). Thus an assessment report should indicate the level of performance in different areas. This is done through **three grades of performance -1, 2, 3** (as in section 5.5), to show '**requiring support**', '**adequate**' or '**well developed**'.

The level of a student on an indicator needs to be assessed after seeing a number of assignments and observations related to the student. Every single assignment or activity done by a student need not be given a grade. It is more important to give specific feedback on the work done. Once in 3 or 6 months, the teacher can go over and reflect on the assignments, the activities and participation of the child in class, and note the level at which the child is performing on the indicators.

It is most important to note the progress a child makes in comparison to her previous level of performance on an indicator. This shows that the teaching process has contributed to the development of the child and has been positive and meaningful for her. This kind of assessment can be done when a teacher takes care to note down observations and incidents related to a child's learning on a regular basis. Everyday, observations on 3 to 5 children may be noted down in a register, so that by the end of the month we have one observation for every child. Examples of such observations of individual children have been reported in Section III. At the end of six months the teacher can go over these observations and prepare a progress card on how the child has been doing on different EVS indicators.

5.5 Detailed List of EVS Indicators (Class III to V)

The broad EVS Indicators were listed in section 2.7. However, we can make a more detailed list to see how each indicator consists of many abilities that need to be developed over the three years. By the time children finish primary school we should have helped their abilities and concepts to develop along the following indicators:

1. Observation and Recording

- Using the senses to gather information
- Observing an object, an event or a phenomenon
- Identifying differences between similar objects/events
- Identifying similarities between different objects/events
- Noticing greater details
- Recognising the order of events that take place in a sequence
- Reporting and narrating an event or process; oral and written presentations
- Reading pictures, maps and tables, with gradually increasing complexity

2. Discussion

- Listening to others' ideas and opinions
- Expressing one's thoughts/ideas/opinions in a group
- Reacting and responding to others' ideas and opinions
- Openness to accept feedback from others and appreciating that others may have a different point of view
- Reviewing one's thoughts and ideas depending on feedback from others
- Finding out from other people, even strangers outside school

3. Expression

- Expressing verbally
- Expressing oneself through gestures/body language; sculpting in clay
- Expressing through drawings
- Understanding that making a drawing of a place is different from making a symbolic map; developing the basic ability to draw simple maps
- Expressing one's own ideas and thoughts through creative writing
-

4. Explanation

- Formulating one's own reasoning for an observed event/activity.
- Thinking critically about one's own reasoning
- Making logical connections
- Making simple hypotheses – to explain observations or relationships in terms of a principle or concept
- Recognising that there can be more than one possible explanation of an event/activity
- Recognising the need to test explanations by gathering more evidence
- Using evidence or patterns to make a prediction (as different from a guess, which needs no evidence)

5. Classification

- Identifying a group of objects on the basis of observable characteristics
- Identifying differences/contrasts in groups of objects
- Identifying similarities in groups of objects
- Grouping the objects on the basis of one variable at a time

6. Questioning

- Asking questions to get information about objects, events and people
- Raising critical questions that help deeper analysis
- Asking questions based on hypothesis
- Identifying questions which can be answered by their own investigations
- Recognising that some questions cannot be answered by inquiry

7. Analysis

- Defining the situation/event in their own language
- Identifying/predicting possible causes of any event/ phenomenon
- Checking evidence which does not fit into the pattern of findings
- Treating every conclusion as being open to challenge by new evidence, and changing ideas when a different one makes better sense of evidence
- Making inferences based on evidence gained by experiences/experiments

8. Experimentation

- Handling things or equipment with care - individually and in a group
- Doing activities individually or in a group through systematic steps
- Showing respect and care for living beings
- Showing concern for minimum wastage of materials; trying to reuse and recycle
- Using standard or non-standard measures in making comparisons and taking readings
- Improvising and creating new things on their own

9. Concern for Justice and Equality

- Being receptive to views of children from different life experiences/cultures
- Being sensitive towards others who may be disadvantaged and differently abled
- Conscious of inequalities in the family and society; being able to reflect and question
- Having a strong sense of justice and being ready to act for a just cause

10. Co-operation

- Accepting one's own strengths and weaknesses
- Appreciating others' view points
- Taking initiatives/responsibility in conducting collective work
- Sharing and working with others; being considerate and helpful towards others

We have discussed how assessment of learning across different indicators is crucial to ensure the child's development at the primary stage. We have given many examples of activities, tasks and questions to assess their learning, throughout the year or even at the time of quarterly tests. We hope 'examinations' in EVS will change to become learning activities in themselves, which children enjoy doing. There may be some doubts whether assessment tasks need to be designed for each indicator separately. If we study the list of indicators for learning in EVS, we can see that these are deeply linked to each other. All these processes unfold together as we construct knowledge about something - we observe, discuss, express, explain and classify. We question, analyse and experiment. We take initiative and help each other. We develop our sensitivities on social issues. Many processes take place together though we may engage with one kind of process more intensely for some time. Thus teaching has to be integrated and holistic. However, assessment tasks can be designed so that they are holistic in general but there may be a few that are specific to a particular indicator. Most importantly, the teaching of EVS must provide opportunities to the child to interact with her environment in the best possible way.