

ENVIRONMENTAL STUDIES

ENVIRONMENTAL STUDIES
CLASSES III TO V

Introduction: Teaching of Environmental Studies

The National Curriculum Committee had recommended in the 1975 policy document “The Curriculum for the Ten-year School: A Framework”, that a single subject ‘Environmental Studies’ be taught at the primary stage. It had proposed that in the first two years (Class I-II) Environmental Studies will look at both the natural and the social environment, while in Classes III-V there would be separate portions for social studies and general science termed as EVS Part I and Part II. The National Policy on Education 1986 and the National Curriculum Framework (NCF) 1988 also posited the same approach for the teaching of Environmental Studies at the primary stage. Contemporary research on how children learn to make sense of the world around them and how pedagogy in primary school can enable them to develop scientific abilities and understanding in consonance with social and environmental concerns has further supported this integrated structure. The NCF 2000 had recommended that Environmental Studies be taught as an integrated course for the entire primary stage, instead of in two distinct parts devoted to science and social studies in Classes III-V. The present NCF 2005 has called for the continuation and further strengthening of this integrated approach for Environmental Studies during the primary years.

*Syllabus
for
Classes
at the
Elementary
Level*

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NCF 2005 and Objectives of Environmental Studies

The present syllabus is designed to forge an integrated perspective for the primary stage of schooling that draws upon insights from Sciences, Social Sciences and Environmental Education. The National Curriculum Framework 2005 indicates some of the objectives of teaching science and Social Sciences at the primary stage as follows:

- 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.

Integrating ‘Subjects’ or Forging a New Understanding?

What do we understand by General Science and Social Sciences? 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 them. These school subjects have evolved through their own complicated histories and are today quite different from the way sciences or social sciences are practiced in the real world of specialized disciplines, such as physics, zoology, chemistry, molecular biology, history, sociology, geography, economics, political science, etc. So what happens when groups of specialists sit down to discuss what should be taught at the primary level? They naturally tend to think of ‘topics’ that have traditionally served as the bases of their own different disciplines. Thus biologists (if we can use that term to somehow bring together botanists and zoologists!) would naturally propose a study of plants, animals or the human body, whereas physicists would think of sound, light, force and work, while chemists would propose studying forms of matter, properties of substances, etc. Add to this the different disciplines under the rubric of Social Sciences and we soon end up with a confounding platter of topics, which are not necessarily ‘integratable’, and are neither close to the way the child relates to her world.

Most primary school curricula working on an integrated approach therefore do not proceed with lists of ‘topics’ from different ‘subjects’ but instead propose ‘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. This approach has been followed for the present syllabus. Several themes were discussed to see what possibilities each of them offers, to bring together insights from different disciplines, in an interconnected manner that is basically child centered. For each theme a web of possible connections was drawn up, of concepts and skills, to explore how that may be developed over the primary years. Specialists from several different disciplines of sciences, social sciences, pedagogy, gender studies, child development, curriculum studies, etc. discussed the possibilities of the proposed themes, pointed out the gaps, and debated on the priorities for a child centered approach. It is clear that there is no single format that can offer a uniquely satisfactory elaboration of ideas for primary school and this syllabus too makes no such claim.

This is not a prescriptive but instead a suggestive 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 provide scaffolding to her learning process. This format is meant to help textbook writers, teachers and parents to appreciate the immense possibilities and the depth of children’s understanding. 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.

Themes for a Child Centered and Integrated Approach

This syllabus web has been developed within a child centered perspective of themes that provide a common interface of issues in social studies, sciences and environmental education. The syllabus for Classes III-V is woven around six common themes given below; the predominant theme on 'Family and Friends' encompasses 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; it 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 on '**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 the saliva makes food taste sweet on chewing, while '**food for plants?**' also introduces the idea of some curious insect eating plants.

The theme on '**Travel**' was developed to help the child on this journey of ideas, of expanding social and physical spaces, into newer and unfamiliar terrains of often mind-boggling and no less fascinating diversity. In Class III the theme encourages children to look at their own journeys, if any, and to see how older people in their family may have traveled in earlier times, as they also hear of accounts of how people travel today in a desert, through forests, in the hills, or in big cities. Moreover, it also suggests a story as a 'resource', to bring into the classroom the experiences of a child of a migrating family and the problems she faces in the process of her schooling. Such narratives suggested as 'resources' are meant to provide creative opportunities of bringing in experiences of other children/people, who may be very different, but whom children can relate





to. This can be done through stories, posters, plays, films, and other media. In Class V the theme 'Travel' takes children through the **'rough and tough'** terrain of the Himalayas with, perhaps, the story of Bachhendri Pal, who hoists the national flag after a trying expedition, while they can also be encouraged to design a flag for their own school.

This 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, and being no less than a Rakesh Sharma or a Kalpana Chawla, each child is asked to give an interview to the Prime Minister of India about what they see from there!. The exercise of looking at aerial views is developed through different views of school, where different perspectives get introduced. It is linked to the concept of mapping, which they begin in Class III through a basic two-dimensional representation of their classroom, and by the time they reach Class V they can read and draw simple aerial views of their locality or city.

'Plants' and 'Animals' as Part of the Theme 'Family and Friends'

'Plants' and 'Animals' have consciously been included under the theme of **'Family and Friends'** to highlight how humans share a close relationship with them and to also provide a holistic and integrated scientific and social perspective of studying them. Traditionally 'plants' or 'animals' are presented as autonomous categories, seen purely from the perspective of science. Here an attempt is made to locate them in a social and cultural context, and also to see how the lives and livelihoods of some communities, such as the gujjars, musahars or 'pattal'-makers, are closely connected with specific animals or plants. Moreover, in the universe of young children narratives of animals and plants play a significant role, and they can relate well even to the animated characters perceived as 'family and friends'.

It is a challenge to transcend conventional boundaries of scientific disciplines to try and relook at the notions of, say, 'plants', 'animals', 'food', or 'our body' from a child's perspective. In fact, some scientific categories are seen to be too formal and counter-intuitive, and perhaps even 'reductionist', for the child to understand. Conventionally biologists divide living things broadly into two categories 'plants' and 'animals'. The idea of 'plants' is considered simple enough to be presented in primary school along with 'parts of a plant', 'functions of the parts of the plant', etc. But why should this way of looking at a plant be considered more 'natural' or even desirable for a child? In fact, extensive research across the world has shown that young children find it too abstract to make a distinction between living and non-living, or to divide the living world between plants and animals. Despite considerable exposure to science teaching in several countries, children as old as 13-15 years have consistently believed that a tree is different from a plant, contradicting the conventional categories of biologists'. Children also systematically differentiate between plants and vegetables ('a carrot and cabbage are not plants'), or even between plants and weeds ('grass is not a plant'). Moreover, a majority of children do not naturally think of seeds as parts of a plant. This has led some primary school curricula to postpone these conventional categories and first allow space to children to explore their own intuitive ideas, in order to achieve a better understanding later of how science tends to classify them differently.

Taking cognisance of the way children think 'plants' are first introduced through the theme on **'Food'** – through what plants children eat, and also through the idea that we may eat the leaves, or

the stem, or seeds of different plants. In fact, this comes after a discussion on questions related to ‘Which of the following is food? – red ants, birds’ nest, goats’ milk, etc. This is to sensitise them to the idea that what some of us take to be ‘food’ may not be so for others; that food is a deeply cultural notion. As discussed above, to allow for a more connected approach ‘plants’ is a sub-theme under the umbrella of ‘Family and Friends’. Thus in Class III children look at the different ‘**plants around us**’, at possible changes over time from when their parents were young, and also what things around them are made of plants. They are expected to talk to their parents and other elders around them, so that these discussions can act as scaffolding to their learning. This is also indicated in the activity column of the syllabus. Children in Class III also observe the shapes, colours, aroma, etc to see the diversity of ‘**leaves in our lives**’, to talk of how plant leaves may be used to eat on, the times of the year when lots of leaves fall to the ground, which may be used to make compost, and also paint different leaf motifs they see on their pots, animals, clothes, walls, etc. In Class IV they look at ‘**flowers**’ and flower sellers, and discuss ‘**whom trees belong to?**’ while in Class V they move on to ‘**forests and forest people**’, the notion of parks or sanctuaries, and also ‘**plants that have come from far**’. In this way they are enabled to construct a more holistically connected understanding, from a scientific, social, cultural and environmental perspective, that is enriched with an aesthetic and caring appreciation of plants around them.

Our Bodies, Ourselves: ‘Family and Friends’ offer Sensitivity and Sensibility

Similar to the case of ‘plants’ discussed above, traditionally ‘our body’ is also treated in a purely scientific and socially distanced manner, with units such as ‘our senses’, ‘parts/organs of the body’ and ‘respiration’, ‘digestion’, etc. However, the theme ‘**Family and Friends**’, specially through its two sub-themes **1.1 Relationships** and **1.2 Work and Play**, allows children to look at their own body as part of their ‘self’ in a more contextual and connected manner. In Class III in the sub-theme on **Relationships**, they discuss their relatives, who live with them and those who have moved away, to get a basic idea of relationships and changing households. They reflect on whom they admire among their relatives and for what qualities or skills, and describe on which occasions or festivals they meet most of them. The unit ‘**our bodies – old and young**’ helps them place their own body in relation to those of their family members, and asks them to notice differences that may occur with age. More significantly, the rubric of the family provides a sense of intimacy and empathy, to help develop sensitivity towards people having different abilities/disabilities. For instance, they look at how some of their older family members may have difficulty in hearing or seeing, and then go on to discuss how they themselves or their friends may cope with such challenges.

In Class IV, the same sub-theme ‘Relationships’ has a unit on ‘**your mother as a child**’ to make children find out about who were her relatives with whom she lived then. They also think about their body in relation to their mother’s; how a baby rat or kitten is related to its mother, and through a possible narrative, about children who may have been adopted/looked after by foster parents, say, after a cyclone. By ‘**Feeling around with eyes shut**’ they explore their senses of touch, smell, etc. - not in isolation of the people or animals they care for - but by trying to identify all those living with them only by touching, hearing or smelling them. They continue the exploration





of feeling what is smooth/rough, hot/cold, wet/dry, sticky/slippery, etc. and are asked to think if there are some things (or people) they are not allowed to touch. This unit also attempts to make them sensitive to the fact that while touch can mean both a caress and a painful slap, the caress too can be a 'good' touch or a 'bad' touch.

In Class V, the unit '**Whom do I look like?**' helps them identify family resemblances, to look for any similarities in the face, voice, height, etc., and also to note particular traits such as '**who laughs the loudest?**'. It goes on to how by '**feeling to read**' on a Braille sheet, someone like Helen Keller could manage to overcome tremendous challenges, as described through accounts of her autobiography.

'Family and Friends' has another **sub-theme 1.2 'Work and Play'** through which they explore different patterns of activity when people are working and 'not-working' in their family and neighbourhood. This helps them to sensitively look at stereotyped gender roles, and to compare their own daily routine with that of a working child. It also allows them to analyse the games they play, to see how traditional games or toys have changed since the time their grandparents were young. In Class V this sub-theme looks at '**team games - your heroes**' and also martial arts or wrestlers and how they are trained. An exploration of our bodies and the process of respiration naturally falls into this context, and in '**blow hot blow cold**' they compare how much faster they breathe after a run. They also see how much they can expand their chest, how they blow on a glass to make it cloudy, and blow to warm their cold hands and also to cool something hot. As suggested this unit could make use of the beautiful story by Dr. Zakir Hussain, "**Usee Se Thanda Usee Se Garam**" as a resource. The unit '**clean work, dirty work**' sensitizes them to the dignity of labour and how different people's work provides essential services to society, possibly through a narrative/story based on Gandhi's work.

Things we Make and Do

The area of **Things we Make and Do** is visualised as an important component as well as a common thread inherent in the process of understanding all the other themes. We humans make things not only to meet our needs but also to express ourselves in a variety of ways and to transcend our limitations. We also comprehend better when we do things ourselves. Often when a young child gets a toy for a gift, she has fun dismantling and later re-assembling it in a completely novel way as much as enjoying it as it is. When she is given a new book she is eager to add 'her pictures' into it as much as appreciating the book. Formal education as well as all that goes into 'being a good child' however discourages these acts. The theme of Things we Make and Do therefore is an opportunity to recharge the variety of energies/components that make learning more fulfilling, and where cognition is not an end but a process enriched by experience, failure, observation, success, etc. There is also a need to give our rich living traditions of art and craft, of 'making and doing things', their rightful place in our curricula.

Another aspect related with this theme is to understand the significance of design and technology in relation to science and society. Technology is not merely applied science; it has an independent existence and in many cases predates



developments in science. Moreover, most of the things we make and do also depend on raw materials and interventions that impact the earth and life on earth.

This theme will also help address the issue of dignity of physical labour. A young child loves sweeping, wanting to help the mother in the household chores, loves fiddling with any electrical appliance within her reach. However, she soon begins to ascribe value to these things that she once enjoyed doing. Sweeping becomes dirty, and to be done by servants or women in the house, fiddling with implements becomes an area reserved for men and boys. In short work becomes a way to segregate people, to judge them, to ascribe it to a particular gender, class or caste. Mahatma Gandhi's vision and plan of 'Basic Education' had the potential to overcome these fractures. The present syllabus takes a small step in that direction, while encompassing contemporary concerns relating to environmental education, social relations with a vision for sustainable development and appropriate technologies

It needs to be emphasised that the syllabus has consciously included key questions that openly address issues of inequality or difference and encourage children to think critically. Whether it is about social discrimination in school or in getting water, about physically challenged people, or working children, all these issues are part of the reality of children, especially those who are disadvantaged and therefore more vulnerable to be pushed out of school. The objectives clearly stress the need to enable children to articulate and critically reflect on these lived experiences, however unpleasant, and not promote a culture of evasion or silence in school. This calls for a specially sensitive approach in textbooks as well as in the teaching learning process in classrooms, and teachers will need to review how they can do justice to these questions.

Scaffolding Children's Learning: The Question Format of the Syllabus

Since the 1970s the philosophy of primary education in different countries, including ours, has been influenced by the Chinese saying "I do, I understand". This lays emphasis on the principle of 'learning by doing', which suggests that learners actively construct their understanding while directly interacting with their environment. However, this model of learning looks at each learner as a solitary individual – it is the "I" who is trying to understand, struggling to develop each concept. This approach is associated with the 'cognitive constructivist psychology' of Piaget, and implies that teachers can only provide a stimulating environment for children to develop. This also suggests that children need to be nurtured individually like delicate plants, as they develop naturally through successive stages of intellectual development. However, in the last few decades it has been increasingly seen that children do not learn alone, through interaction with the environment, but learn more through talking and discussing with other people, both adults and other children. This psychological approach known as 'social constructivism' has been influenced by the work of Vygotsky and Bruner, who showed that adult support is crucial to children's thinking. With an appropriate question or suggestion the child's understanding can be extended far beyond the point which she could have reached alone. In fact, it has been shown that through the 'scaffolding' provided by such questions, discussions, and adult support, the child can be helped to cross what is called 'the zone of proximal development' to leap to the next level of understanding.

The present syllabus is framed within this social constructivist perspective of learning. It is hoped that children will be supported to construct knowledge far beyond their individual abilities





through appropriate questions and interventions, including discussions with adults, in school and also at home, as also among themselves. *Instead of listing key concepts the syllabus begins by suggesting some key questions, framed in a language appropriate to stimulate the thinking of a child that age.* These are not meant to be questions of the textbook but are suggestive of the nature of scaffolding to be provided to help children think in certain directions. This is especially important to help children articulate their own ideas, for instance, in the case of what they understand by the term ‘plants’ or ‘animals’. Textbooks written in different contexts and regions will be different and indeed must reflect their own specific concerns. However, such questions are important for textbook writers to know how to guide children to observe, compare, predict or analyse certain phenomena or processes. For instance, in the theme on Food, there is a question “Who provides us the Mid-day Meal?” This is a leading question to encourage children to begin thinking about the agencies and institutions who provide certain services, beyond the concrete observation of the particular person. Thus as they begin to think about the post office or the school or hospital as institutions, it will help them in developing the abstract concept about the notion of governance or ‘government’, which they normally encounter later usually in the form of statements or information that they are totally unable to comprehend. Thus when appropriate connections and linkages are made in the child’s mind about her own immediate experiences she is enabled to understand more abstract or sophisticated concepts and arguments later.

The matrix of each theme contains leading questions and key concepts and also suggested resources and activities. As the name indicates, these are purely suggestive for teachers and textbook writers, to give an idea of how the particular theme can be dealt with. It is clear that different textbooks based on this syllabus structure can turn out to be very diverse in terms of the elaboration of the themes. Just as every structure must have its own foundations and its own stability, similarly each child ultimately needs to construct her *own* understanding, articulation, knowledge and skills. We do know that children are not blank slates or empty vessels to be filled by ‘information’ about carefully listed key concepts, and that they cannot learn by passively listening to adults, however expressive they may be. This is the basic problem of our traditional system which relies on giving ‘information’, justified on whatever grounds, but without caring to know about the possible zone of the child’s development. Indeed there is no getting away from this: If children have to understand an idea they have to construct knowledge for themselves, which can happen when they get the right cues to connect new understanding with what they already possess. This syllabus identifies those cues that will help children connect with their varied knowledge systems. Our children do indeed know and can learn a lot; it is our responsibility to help them do it better.

What Learning Do We Expect?

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? This document gives a suggestive matrix of themes and sub-themes through the three years of Classes III-V. It is up to the teachers and textbook writers to translate this into books, materials and classroom activities, to

shape an enabling *learning environment* for each child, wherever she may be located. Even in the earlier years children do learn about their environment, though there is no separate subject in school. It is expected that in Classes I-II the two subjects of Language and Mathematics will incorporate some themes for the development of concepts and skills in areas broadly related to EVS.

This syllabus format consciously does not spell out any outcomes for each theme. For each thematic area related key concepts, skills and activities have been clearly indicated at appropriate places. However, schools must ensure that these activities or discussions will be conducted because only then can it be ensured that learning will happen. For instance, at several places the activities indicate that children need to conduct specific observations. We know that even young children's senses are sharp and they are able to detect small differences between fairly similar objects, though not always the similarities. However, the purpose of conducting 'observation' activities in EVS is usually 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 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? What then does it mean to specify any outcomes at this point?

We reiterate the purpose in drafting this syllabus through the following example:

What biology do students know?

Janabai lives in a small hamlet in the Sahyadri hills. She helps her parents in their seasonal work of rice and 'tuar' farming. She sometimes accompanies her brother in taking the goats to graze. She has helped bring up her younger sister. Nowadays she walks 8 km everyday to attend the nearest secondary school.

She maintains intimate links with her natural environment. She has used different plants as sources of food, medicines, fuel wood, dyes, and building materials; she has observed parts of different plants used for household purposes, religious rituals and in celebrating festivals. She recognises minute differences between trees, and notices seasonal changes based on shape, size, distribution of leaves and flowers, smells and textures. She can identify about a hundred different types of plants around her, many times more than her biology teacher can – the same teacher who believes Janabai is a poor student; that "These students don't understand science ... they come from a deprived background!"

Can we help Janabai translate her rich understanding into formal concepts of biology? Can we convince her that school science is not about some abstract world coded in long texts and difficult language: it is about the farm she works on, the animals she knows and takes care of, the woods that she walks through everyday? (*National Curriculum Framework 2005, p. 45*)



CLASS III
ENVIRONMENTAL STUDIES



Questions	Key Concepts/ Issues	Suggested Resources	Suggested Activities
<p>1. Family and Friends</p> <p>1.1 RELATIONSHIPS</p> <p><i>My family</i></p> <p>Who all live with you at home? How are they related to each other? Do you have relatives who do not live with you? Have they always been there? How many children did your grand parents have? Who do you think will be your new relatives in future?</p> <p><i>My family and me</i></p> <p>Do you look like anybody in your family? Have you learnt anything from anybody in your family? Whom do you admire most among all your relatives? Who is the most caring and patient person? When do you meet members of your family who do not live with you?</p> <p><i>Whom do I look like?</i></p> <p>Do some of your relatives look similar? Which features are similar – eyes, ears, the voice or</p>	<p>Concept of a family; diversity in family types; Family as a support system, Ideas about relationships; Simple family tree (three generations).</p> <p>Family influences – physical characteristics, values and habits, appreciating qualities and skills of family members; family as a support system.</p> <p>Concept of similarity between relations, hereditary features.</p>	<p>Child's daily life experience; Family members.</p> <div style="text-align: center;">  </div> <p>Family members, local knowledge, story/poems on different festivals.</p> <p>Family photographs; Narrations by elders about family members when they were young.</p>	<p>Observation, enquiry about family relations from adults, discussion.</p> <p>Observation, exploring from elders about extended family, narrating stories/singing poems related to festivals, writing about any festival, drawing.</p> <p>Discussion About stories/ films/jokes involving twins</p>



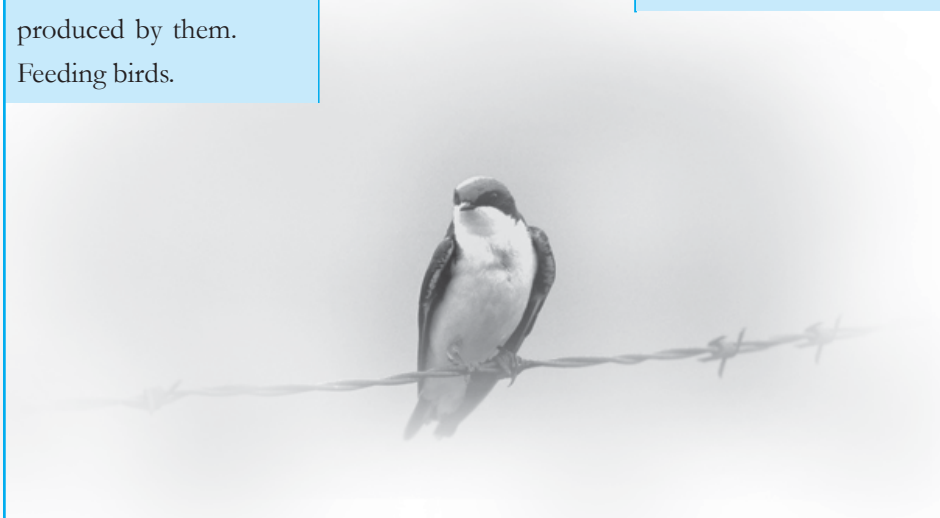
Questions	Key Concepts/ Issues	Suggested Resources	Suggested Activities
<p>height? Are there any two people in your family who look exactly alike?</p> <p><i>Old and the physically challenged</i></p> <p>Do you know of people who are hard of hearing? Are many of them old? Do you have any friends who cannot hear/see well? Is there any way in which you may have helped them? Are there any sounds you like but others/elders do not?</p> <p>1.2 PLANTS <i>Plants around us</i></p> <p>How many different kinds of plants do you see around you? What are the differences you notice? What things around you are made of plants? Is there a plant in your area that was not there when your grandparents were young? Do you know of some plants which do not grow around you, say things that we eat and not grown around you?</p>	<p>Sensitivity to the old and physically challenged; Introduction to the sense of hearing and sight; sensitization to the fact that the body ages, also that some children may not hear /see at all or may be partially affected. Basic idea about Braille.</p> <p>Exploring children's ideas about a 'plant'. Plant diversity; size, where they grow, shape, colour, aroma, etc.; dependence on plants for everyday life. Introduction of new plants/crops and changes observed by elders over time. Plants and the climate/environment.</p>	<p><i>"Meri baben sun nahin sakti"</i> a book by Bharat Vigyan Samiti or any other material on differently abled children.</p> <p>Child's daily life experience, observation, information from grandparents/ elders, a sample/picture of a plant which is unusual in the local surroundings.</p>	<p>Reading and discussion; Making different kinds of sounds and expressing likes and dislikes about them.; blindfold act, visiting any local institution that deals with the blind or any other institution.</p> <p>Observation of different plants around, compare and classification based on simple characters; Discussion about things made of plants, pencil prints of barks, leaf prints.</p>



Questions	Key Concepts/ Issues	Suggested Resources	Suggested Activities
<p><i>Leaves in our lives</i></p> <p>What different kinds of leaves do you see? Do you use plant leaves to eat on? In what other ways are leaves used?</p> <p>Is there some time of the year when lots of leaves fall to the ground? Are they burnt? Have you seen a compost pit?</p> <p>What leaf motifs do you find on clothes, pots, walls, animals, etc.? Do you decorate your house with leaves on some occasions?</p>	<p>Leaf diversity – colour, shape, texture, aroma, etc. Seasonal shedding of leaves; compost from leaves.</p> <p>Leaf designs/motifs on different objects.</p>	<p>Child's daily life experience, observation, a story on a compost pit.</p>	<p>Observation, collection of different leaves, smelling different plant leaves, discussion, visit to a nearby compost pit, decorating the classroom with leaf motifs.</p> <p>Applying <i>mehndi</i> on palms in different designs.</p>
<p>1.3 ANIMALS</p> <p><i>Animals: small and big</i></p> <p>Which are the smallest and the biggest animals you have seen? Which have you only heard about? Which animals have tails? How many legs?</p>	<p>Exploring children's ideas of an 'animal'.</p>	<p>Child's daily life experience, observation, stories/ poems on animals (NBT)</p>	<p>Observation of diversity of animals around you, listing, Discussion about what they eat, were they live relative size of animals they have seen, pictures in books, animals heard about. Drawing pictures of favourite animals.</p>
<p><i>Some creepy crawlies – and flyers too</i></p> <p>What different kinds of small crawling animals do you know? Where and from what does each of</p>	<p>Exploring children's ideas of crawling animals, flyers and insects.</p>	<p>Child's daily life experience, observation, stories/ poems on insects, flyers and crawling</p>	<p>Observation, of ants, flies, spiders, crickets, cockroaches, earthworms, lizards and other animals.</p>



Questions	Key Concepts/ Issues	Suggested Resources	Suggested Activities
<p>them hide? Which insects can crawl and also fly? Which ones bite us? Can flies make us ill? Why does a spider make a web?</p> <p>Birds</p> <p>Which are the birds you see around your area? Do they like some trees more than others? What do they eat? Can you recognize birds by their feathers? What are the different sounds they make? Are they saying something to each other? Are there some birds that come from other places? Do you feed any birds or place water for them?</p>	<p>Exploring children's ideas of birds-their living places, eating habits, common features like feathers and sounds produced by them.</p> <p>Feeding birds.</p>	<p>animals (NBT)</p> <p>Child's daily life experience, observation, stories/ poems on birds (NBT)</p>	<p>Discussion about them, where they live, what they eat, insect bites (wasp) etc. Drawing some of them.</p> <p>Drawings of birds; mimicking different neck movements and sounds of birds, collecting feathers.</p>
<p>1.4 WORK AND PLAY</p> <p>Work around me</p> <p>What are the different kinds of work done around me? What work does my mother/ father/ brother/ sister etc. do? What work do I do? What work do others do? When I am not working what do I do? When my father/ mother is not working what do they do?</p>	<p>Different occupations, idea of working time and leisure time; work inside and outside homes – gender, age, caste, economic, etc. aspects.</p>	<p>Poem 'Home work' by Shyam Bahadur Namra</p> <p><i>Case study:</i> time chart of the daily routine of a child who does a lot of housework</p>	<p>Draw a daily time-chart for your father, mother and yourself, discussion.</p>





Questions	Key Concepts/ Issues	Suggested Resources	Suggested Activities
<p>Working children</p> <p>What kind of work was done by children when your grandparents were young? Has that changed today? Who are the children you know who work and go to school/ who work and cannot go to school?</p>	<p>Sensitize children to other children who work at home and outside - not as a result of family neglect but more as a systemic cause.</p> <p>Important that all children go to school.</p> <p>A sense of how child labour existed in other countries before all children began to go to good common schools.</p>	<p>Excerpt from story by Charles Dickens.</p> <p>Narrative describing a poor child's/child laborers experience in a common school in another country.</p>	<p>Reading and listening to the story/excerpts.</p> <p>Discussion and narratives about children making firecrackers at Shivkashi., child workers at Dhabas and auto workshops.</p>
<p>Games we play</p> <p>What games do I play? Did my grandparents play the same games? Are these indoor/outdoor?</p>	<p>Leisure; games in school and outside, past and present; for some play is work</p>	<p>Traditional and local games; folk toys</p>	<p>Listing, classifying indoor and outdoor games.</p>
<p>2. Food</p> <p>Foods from plants and animals</p> <p>Which of these is food – red ants, bird's nests, snakes, bananas, goat's milk, etc.?</p> <p>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 do or do not eat; tabulating food we take from different plants and animals. Observing and drawing different parts of plants eaten.</p>
<p>Cooking</p> <p>What do you eat that is not cooked? What is eaten</p>	<p>Food may be eaten raw or cooked - steamed,</p>	<p>Songs/poems on food or lack of food; local</p>	<p>Listing raw and cooked food; discussion on</p>



Questions	Key Concepts/ Issues	Suggested Resources	Suggested Activities
<p>only when cooked? How do you cook food? What do you cook it on? What are the different kinds of vessels used for cooking? What are they made of? Is water used in all forms of cooking? Which food is cooked without using water? How?</p>	<p>boiled, baked, fried etc.; Different fuels, types of stoves; Types of vessels used in cooking, different shapes (regional/traditional), different materials, etc.</p>	<p>knowledge about what is edible; photographs.</p>	<p>cooking methods/materials, etc; survey to find out the types of fuels/vessels used; drawing various utensils; historical time line tracing what in the kitchen has changed and roughly when.</p>
<p><i>Eating in the family</i> Do all members of the family eat the same food in your family? 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 your family? What do babies have for food? When do babies start eating and what do they eat other than milk?</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, significance of milk.</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>
<p><i>What animals eat</i> Do animals eat the same things? What do different animals eat? Do you feed the animals around you - what? What do they take from your house even when not fed?</p>	<p>Food of domestic and wild animals; care of domestic animals.</p>	<p>Stories, cartoons and films.</p>	<p>Observing and listing different animals and their feeding habits;; Discussing food given to animals; observing animals being fed, keeping food out and observing animals come and feed.</p>



Questions	Key Concepts/ Issues	Suggested Resources	Suggested Activities
<p>3. Shelter</p> <p><i>Houses and houses</i></p> <p>Have you seen - a house on stilts, a tent, a flat on the tenth floor, a house on wheels or a house on a boat?</p> <p>Do you know anyone living in such houses? Why do people use such houses?</p>	<p>Some unusual houses, a narrative and a discussion about why such houses are built. Different types of houses</p> <p>Need for shelter, need for living together</p>	<p>Pictures of different types of houses; easily available materials for model making.</p>	<p>Discussion; observation; Drawing, model making and art work. Creative writing about imagined experiences.</p>
<p><i>Decorating and cleaning our shelter</i></p> <p>How do you decorate your shelter? Do you draw designs on your walls/ floor or decorate with leaves/flowers/other objects? How do you keep your house clean? Do you also help in cleaning? Who mops and sweeps it? Where do you throw the garbage? Do you have any problems living in your house during rains, summer or winter? Have you seen houses with sloping roofs? Why are they made sloping?</p>	<p>My house, Houses/ shelters are decorated in different ways in different cultures; Need for shelter to provide protection from heat, cold, rain and problems faced.</p> <p>Need to share housework. Garbage disposal.</p>	<p>Illustrations of designs/ motifs used for decoration of the house.</p>	<p>Draw a picture of your house. Draw the various kinds of designs/motifs used to decorate walls/ floors of houses.</p>
<p><i>My family and other animals</i></p> <p>Who all live with you? Which animals live with</p>	<p>Family members; pets and other animals, insects,</p>	<p>Daily life experiences. Cartoons.</p>	<p>Discussion and sharing of experiences and</p>





Questions	Key Concepts/ Issues	Suggested Resources	Suggested Activities
<p>you - which are the biggest and the smallest animals living in your house? From where do they get their food? Where in your house do these animals live? Which of them are seen only at night?</p> <p><i>Mapping my neighbourhood</i></p> <p>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 neighborhood? Can we explain to someone how to reach the post office or the bus stand from our house?</p>	<p>rodents, etc. Food for the pets and other animals. Some are seen only at night.</p> <p>Neighbourhood, mapping and representation in two dimensions. Directions.</p>		<p>knowledge. Drawings of insects, rodents; pets and other domestic animals.</p>
<p>4. Water</p> <p><i>Water for my family</i></p> <p>What are the main sources of water in your locality? Who fetches the water and from how far? Do all the people in your locality use the same source of water? Are some people not allowed to take water from where you take it? From where do you get water? Does it look clean enough for drinking?</p>	<p>Local sources of water; uses of water; gender roles; distance estimates; social discrimination; clean water for drinking</p>	<p>Survey of different parts of the school, survey of the neighbourhood</p> <p>Child's daily life experience, local knowledge</p>	<p>Estimating distances, marking location of places and drawing/mapping from different perspectives, like from the top, from the front etc, Draw a map of the route from our house to the nearest shop.</p> <p>Listing the sources of water, Exploring by asking questions from elders or people around, Discussion.</p>



Questions	Key Concepts/ Issues	Suggested Resources	Suggested Activities
<p><i>Do animals and plants need water?</i></p> <p>What happens if plants and animals do not get water – how do you see that a plant or animal is thirsty? Do all animals/plants need the same amount of water? Which plants/animals need the least?</p>	<p>Water for plants and animals.</p>	<p>Library resource-brief information about the camel, cactus along with their pictures.</p>	<p>Reading, Discussion; Comparison of a well watered and a wilting plant.</p>
<p><i>Water shortage</i></p> <p>When is it difficult to get water? Are there some people in your area who always face water shortage? What would happen if we had no water? Have you seen water being wasted – how? How can we avoid it? Do you reuse water?</p>	<p>Water scarcity, wastage and recycling, water harvesting.</p>	<p>Newspaper clippings about water shortage/ water being wasted.</p>	<p>Poster making/ writing activity in groups with a message of saving water.</p>
<p><i>Water in our lives</i></p> <p>Which of your daily activities use water? Do you and others you know wash your hands and feet before you enter the house? Why do you think this is done?</p> <p>Can you describe the scene of a rainy day – with details about birds, animals, plants and yourself.</p>	<p>Use of water in different activities; cultural expressions about water/ rain/ rivers; observations related to rain and the response of plants and animals.</p>	<p>Library resources, observations related to daily life. Songs about water/river/rain?</p>	<p>Enacting different activities that utilise water/ a rainy day, listing the activities in which water is used, singing rain/river/ water songs/poems together in the class.</p>

Questions	Key Concepts/ Issues	Suggested Resources	Suggested Activities
<p>Storing water</p> <p>How do you store water in your home? Do you collect rainwater - how? How much water do you store every day? About how much do you use for drinking or bathing? In what kinds of containers do you store water for drinking/ washing/or for animals? What are the containers made of? If the water is at the same level in a narrow and a broad container does it mean they contain the same amount of water?</p>	<p>Measurement of volume in terms of non-standard units such as buckets, pots, etc. Estimates of quantities used for different domestic activities; safe handling of water. Containers made of different shapes and materials to store water for different purposes; Conceptual development of conservation of volume.</p>	<p>Child's daily life experience, bottles of different shapes/sizes/materials; <i>Panchtantra</i> story.</p>	<p>Drawings of different containers. Measurement activities; demonstration to help the understanding of conservation of volume. Touching different containers and discussing about their material.</p>
<p>5. Travel</p> <p>Going places</p> <p>Has your family traveled together to another place? Where and what for? How did you go? How long did it take? How far did your grandparents (or other elderly persons) travel when they were young? How did people travel in those times? How do people travel today in the desert, hilly areas, on sea, etc.</p>	<p>Need for travel, travel within the locality and beyond; travel to different social spaces – forest, village, city, etc.; travel for migration, sight-seeing, family occasions.</p>	<p>Story of a journey along the river, mountain, etc.</p>	<p>Reading and Discussion, Drawing a village / sea/ forest /mountain scene.</p>





Questions	Key Concepts/ Issues	Suggested Resources	Suggested Activities
<p><i>Ways to travel</i></p> <p>How do we go to school? How do we travel to other places? How many different ways have we travelled? How many different ways of travel do we know of? Have you been to a railway station? What all do you seen there? Who are the people who work at the station and on the train? How did people travel in the past?</p>	<p>Different modes of transport; short distance, long distance, newer ways of traveling.</p> <p>Different kinds of workers associated with railways/station.</p>	<p>Pictures of modes of transport;</p>	<p>Collect pictures of different modes of transport; classify them into different types of transport; enact a train journey/railway station, Observations of activities at the station like loading, weighing, washing trains, signaling, selling tea, level crossing, etc</p>
<p><i>Talking without speaking</i></p> <p>If I cannot speak, how do I tell people what I want to say?</p>	<p>Communication without speaking, Use of sign language, dance mudra's.</p>	<p>Sign language, dance mudra's.</p>	<p>Playing dumb charades, enacting situations without speaking, learning sign language, practicing mudra's.</p>
<p><i>Mailing a letter</i></p> <p>What happens when I post a letter? How does it reach my friend? Who are the people who help to do this? Are there any other ways of sending a message? How was a letter sent in the past?</p>	<p>Letter as a means of communication, work and people associated with the post office; different means of communication, changes with time.</p>	<p>Local post office, different samples of letters- inland, post card, greeting card, etc. Discussion with workers at the post office.</p>	<p>Trip to local post office, Observing sorting, stamping, weighing etc.</p>



Questions	Key Concepts/ Issues	Suggested Resources	Suggested Activities
<p>6. Things we Make and Do</p> <p>Pottery</p> <p>What kinds of pots do we see around us? What containers are used to store grain? What kinds of containers did people make long, long back with rings of clay- when they did not have a potter's wheel? Can you make such pots and dry them in the sun – how long do you think these will last? How does the potter bake them?</p> <p>Textiles</p> <p>In how many different ways can you wear a long cloth that is not stitched? How many kinds of <i>sarees</i> or <i>lungis</i> have you seen worn by people from different parts of the country? How many different colours do we know of – how many new ones can we create? What are fast colours and what problems do we face when colours run? How do we make our own vegetable block prints and tie and dye?</p>	<p>To meet basic needs human beings make things; need natural resources, creativity; have changed the way we live. An idea of the earliest pots made for storage of grain – when there was no potters wheel. The experience of making such pots with clay; drying and the need to bake them for greater strength.</p> <p>Diversity in types of clothing we wore; even with unstitched clothing. Colours and design are used in textiles; scope for creativity; vegetable dyes.</p>	<p>Narratives and illustrations of pots and containers made in early times – with rings of clay (e.g., Social Studies book by Eklavya).</p> <p>The idea of different styles of dress; traditional unstitched clothing and different styles of draping it. Some idea of mixing colours to make new ones; fast colours and colours that run; tie and dye; block printing and making our own blocks with vegetables. Samples of blocks, dyes.</p>	<p>Making pots of clay; also with rings; with different types of clay; drying in the sun; talking to potters or brick makers to find out how these are burnt/ baked in furnaces. Making different ornaments etc. with clay.</p> <p>Activity to wear/drape a dupatta or long cloth in different styles to emulate what different people do and also to create their own designs. Play with colours and colour mixing; Using dyes to dye cloth; making blocks with potato or ladies fingers for printing on paper.</p>

IV

CLASS IV

ENVIRONMENTAL STUDIES



Questions	Key Concepts/ Issues	Suggested Resources	Suggested Activities
<p>1. Family and Friends</p> <p>1.1 RELATIONSHIPS</p> <p><i>Your mother as a child</i></p> <p>When your mother was your age who were the relatives she lived with?</p> <p><i>Where do babies come from?</i></p> <p>Have you seen a newborn baby - where did she come from? Where does the puppy/ kitten/ calf/ chick come from?</p> <p>Do you know of people who are looking after/ have adopted a child?</p> <p><i>My extended family</i></p> <p>Are there things you learn from your family members? What? Do you do anything different from other members of your family? Do all your family members live with you all the time? When do you meet members of your family who do not live with you? What festivals do you celebrate together?</p>	<p>Change with time in people residing together. Family tree today.</p> <p>From the mother's body; mother-child relationship; Foster parents and adoption</p> <p>Family as a microcosm; (Family values – gender, earning capacity, decision making, caste, religion perceptions etc.); changes in family value system – lead to changes in society; Festivals and family gatherings</p>	<p>Discussion with mother, grandparents and other relatives.</p> <p><i>Kya tum meri amma ho?</i> (NBT story)</p> <p>Family members, family photographs,</p>	<p>Asking questions from mother about her childhood.</p> <p>Story telling and discussion.</p> <p>Discussion on family values, habits within family; discussion on family occasions.</p>



Questions	Key Concepts/ Issues	Suggested Resources	Suggested Activities
<p><i>Feeling around with eyes shut</i></p> <p>With your eyes and ears closed can you identify the people/animals living with you merely by touching/smelling? By touching can you tell if anything is cold/hot, wet/dry, smooth/rough, sticky/slippery, soft/hard? Are there some things which you are not allowed to touch? Do you feel uncomfortable when some people touch you?</p> <p>1. 2 Work and play</p> <p><i>Fun and fights at play!</i></p> <p>Do you play the same games at school that you play at home? What things do you use to play with? Does the school provide these? Do you fight while you play? How do you decide the rules for the games? Does anyone stop you from playing? Who and why? Do you play with every child (boys and girls) in your neighbourhood? Are you stopped from playing with certain children?</p>	<p>Sensitivity to people who are differently abled; Senses of smell and touch; emotional response to a caress/slap; 'good' and 'bad' touch.</p> <p>Different games at home and school.</p> <p>Play as a way of social negotiation; rules of each game; fights and the need to negotiate – ideas of fair play.</p> <p>Restrictions on play; playmates from children of different gender or class/caste backgrounds.</p>	<p>Child's daily life experience, observation; narratives related to smell and touch; materials for games and activities.</p> <p>Tom Sawyer – story 'whitewashing the fence' or any other story on 'work' and 'play'.</p>	<p>Guessing game: Group activity where children touch different things with their eyes shut.</p> <p>Discussing and planning rules for local games and playing together in groups; writing them down.</p>



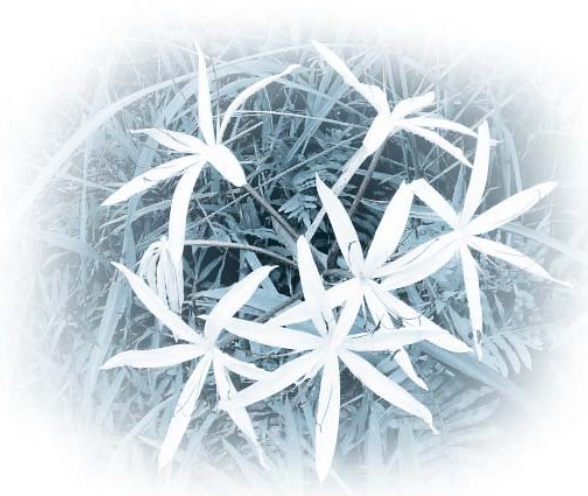


Questions	Key Concepts/ Issues	Suggested Resources	Suggested Activities
<p><i>How they learnt their skills</i></p> <p>In your area do you know the people who do the following: make pots/stitch clothes/ make shoes/cure people/ build bridges/ embroider/fly planes/ repair cycles/ drive buses, etc? How well do you know them – their names, family etc? What tools do they use for their work? Where did they learn how to do these things?</p>	<p>Different occupations in the local region/ country; who does what work.</p> <p>Gender and work.</p>	<p>Local crafts persons and other professionals</p>	<p>Drawing people with their professional tools; talking to some people and describe how they learnt their skills</p>
<p><i>Fun at the fair/Circus</i></p> <p>Have you been to a fair or a circus? Which is the item you liked best – was it a ride, a game, something you saw/ate/bought? When do you fly kites? How do you make them fly?</p>	<p>Ways of recreation.</p>	<p>Circus/fair, a poem on <i>Mela</i>.</p>	<p>Kite-making and kite-flying activity in groups, making tops, writing a paragraph about an experience in a fair/circus.</p>
<p>1.3 Animals</p> <p><i>Animals and their friends</i></p> <p>Which animals like to move around in groups? Which animals are shy and do not come near you? Have you seen animals playing with or riding on different animals?</p>	<p>Herds; group behaviour; animal-human interaction.</p>	<p>Observation, child's daily life experience, story on animals moving in groups, visuals</p>	

Questions	Key Concepts/ Issues	Suggested Resources	Suggested Activities
<p><i>Who is attracted to flowers?</i></p> <p>Why do bees/butterflies come to flowers? How do people collect the honey from bee hives?</p>	<p>Honey from flowers; bee hive and basic idea of honey collection.</p>	<p>Film; description Illustrated narratives/discussion with beekeepers on the process of honey collection.</p>	<p>Observation of flowers and the insects that visit them, drawing the flowers, insects,; discussion on colour, fragrance.</p>
<p><i>Long ears or short?</i></p> <p>Which animals have ears? Which animals have hair on their body?</p>	<p>Some animals have external ears. They also have hair.</p>	<p>Child's observation, information/description and illustrations about animals.</p>	<p>Listing and classification of animals with and without ears; with and without hair; drawing them; feeling them.</p>
<p>1.4 PLANTS</p> <p><i>Roots of plants</i></p> <p>Do all plants need water to grow? Which part of the plant absorbs water from the soil? When you tug at grass, why does it not come out easily? Why do plants/trees not get uprooted when there is a strong wind? Which roots are eaten by people during famine when nothing else grows?</p>	<p>Plants need water; roots absorb water and hold it to the ground.</p> <p>Roots eaten normally by people like carrots, radish, sweet potato, and during famine.</p> <p>Aerial roots of some plants</p>	<p>Child's observation, information about the roots eaten by people; pictures/specimes of roots.</p>	<p>Observation, collection, drawing of roots of different types, Observing trees/plants whose roots are affected by activities like construction/paving/plastering. Observation and discussion about swinging on <i>pipal/bargad</i> aerial roots.</p>
<p><i>Flowers</i></p> <p>Which plants around us have flowers? Do they come only at some times of the year? How is the bud different from the</p>	<p>Flowering plants; seasons; observation of buds blossoming into flowers; different shapes, colours, petals, aroma, etc.</p>	<p>Child's, observation, stories/ poems about flowers, a visit to a garden.</p>	<p>Drawing flower motifs for clothes, animals, pots, etc. Making floral decorations; Observing the flowers and</p>





Questions	Key Concepts/ Issues	Suggested Resources	Suggested Activities
<p>flower? What are the different kinds of flowers we have seen – shapes, colours, petals, aroma, etc? What do we use flowers for? Do you eat any flower? Have you seen flowers motif painted on clothes, walls, floors, pots, animals?</p> <p>Who sells flowers in our area? Where do these come from? How are flowers sold - for how much?</p> <p>Whom do trees belong to?</p> <p>Which plants/trees around you are looked after by people – by whom? Which are not? Whom do they belong to? Who eats the fruit of trees that grow wild?</p> <p>2. FOOD</p> <p>How we get our food</p> <p>How does food reach us? Who grows it? How you seen vegetables and fruits growing? How you seen plants of rice/ wheat/ dal etc? What are the spices do you know? Which spices can we recognize by smelling or tasting.</p>	<p>Flowers used in everyday life, festivals, etc. Floral motifs and designs on clothes, animals, pots, walls, etc.</p> <p>Knowing the local flower seller; some idea of the local unit of measurement (by cubit, fixed garland, each stem, etc.) and cost.</p> <p>Neighbourhood and its plants; wild and domestic plants;</p> <p>Fruits eaten by people living in forests.</p> <p>Cutting trees.</p> <p>From field to <i>mandi</i> - from market to house; grown by farmers; fruit trees, vegetables, cereals, pulses, oil seeds;</p> <p>Spices</p>	<p>Talking to flower sellers, gardeners, etc.</p>  <p>Local knowledge, information about domestic and wild plants (NBT books).</p> <p>Discussion with a vegetable seller/retailer in the mandi, / truck driver who transports food items.</p>	<p>buds, noting similarities and differences; observing /smelling and feeling different flowers.</p> <p>Listing of some common trees in the neighbourhood; discussion about ownership of trees; fruits that are not eaten by us.</p> <p>Listing plants children know that provide them food; bringing samples; common spices, observing and drawing samples, recognizing them by smell and taste.</p>



Questions	Key Concepts/ Issues	Suggested Resources	Suggested Activities
<p>Special occasions</p> <p>When do many people eat together? What food is eaten? Who cooks it? How is it served?</p> <p>Does you get a mid day meal in school? - What items? Who provides the mid day meal?</p>	<p>Community eating; Mid day meal (where applicable).</p> <p>Cultural diversity in foods associated with special occasions like festivals, family celebrations/ ceremonies etc.</p> <p>Boarding school.</p>	<p>Visit to a langar/such occasions, talking to people who cook on such occasions.</p> <p>Narratives about hostel food/pantry car of train.</p>	<p>Discussion on occasions at which there is community eating; Listing of the different foods eaten at different occasions; drawing and descriptions of the large utensil used on such occasions</p>
<p>Tongue and Teeth</p> <p>How do we taste different foods? How do teeth help us to eat – are all teeth similar? Which teeth have I dropped and how are the new ones different?</p>	<p>Taste, tongue; teeth – types, milk teeth, permanent teeth.</p> <p>Tongue and speech.</p>	<p>Samples of different food items; peer observations; pictures or models of teeth.</p>	<p>Observation of each other's teeth, tongue and mouth; counting teeth; drawing; experiments with different tasting items.</p>
<p>Teeth, beaks and claws</p> <p>Are the teeth of other animals similar to ours? Can we tell what birds eat by looking at their beaks? Are the claws of birds also different? Is their shape related to the food they eat?</p>	<p>Teeth in some common animals; beaks and claws of birds – relationship with food they eat.</p>	<p>Visit to observe some animals; personal experiences; Visuals; (NBT books on birds.)</p>	<p>Observation and drawings of beaks, claws and teeth of different animals, birds, etc.</p>
<p>3. SHELTER</p> <p>Houses then and now</p> <p>Do you live in houses similar to ones your grandparents lived in? Are houses now made of similar materials as was</p>	<p>House change over time; rural and urban differences, multi-storeyed houses along with slums in cities.</p>	<p>Discussion with elders in the family. Visit to any old building in the area; changes in the construction of houses</p>	<p>Making models of houses; collection of materials used to make houses.</p> <p>Drawing pictures of old and new buildings.</p>



Questions	Key Concepts/ Issues	Suggested Resources	Suggested Activities
<p>used then? What are the differences?</p> <p>Garbage? What do you do with waste in your house? Where do you throw it? Do you reuse any waste materials? Who takes away the garbage?</p> <p>Where animals live Do animals live in shelters? Which animals live in water? On land? Underground? Are there any animals that we see only at night? Where do they go during the day? Do we know of animals that make their own shelter?</p> <p>When birds make nests When and why do birds make their shelter? Do all birds make nests? Where do different birds nest - when do they fly away? With what different materials do birds make their nests?</p> <p>Mapping our neighbourhood Who are my neighbors? Do I have any of the</p>	<p>Materials used have changed.</p> <p>Waste materials, waste in our houses, urban/rural waste. Reduce garbage.</p> <p>Diversity in animal habitat and shelters. Some structures like webs have other purposes.</p> <p>Birds make nests for laying eggs. Nesting habits of different birds vary. Different materials are used for nests.</p> <p>Introduction to the concept of giving</p>	<p>with time; houses in villages and cities.</p> <p>Newspaper articles and advertisements on waste/garbage.</p> <p>Stories/pictures of habitats and shelters animals use or make.</p> <p>Child's observation; visuals; nest of any bird.</p> <p>Child's experiences, enquiry, observation and</p>	<p>Listing things thrown away as garbage, waste. Discussion on reduction of waste.</p> <p>Discussion, listing of animals with respect to their habitat and shelter; making birds nests with scrap materials, making caves, rat holes etc in mud/sand pits.</p> <p>Observation of a bird's nest and drawing pictures. Songs and poems; dance and movement to simulate bird flight.</p> <p>Discussion, enquiry from friends and neighbours;</p>



Questions	Key Concepts/ Issues	Suggested Resources	Suggested Activities
<p>following near my house – a school, grocery shop, market, well, river or pond? Where are they with respect to your house?</p>	<p>directions with respect to any landmark; also a preliminary mapping process, further use of use of symbols, use of a scale.</p>	<p>previous knowledge of routes. Local map /chart of the school and its neighbourhood.</p>	<p>counting number of steps and estimation of distance for making a preliminary map.</p>
<p>4. WATER <i>Water fit for drinking</i> What are the major natural sources of water in your area? Is the water fit for drinking – do you clean it at home? Do you know how dirty water can make you ill? Why do we not drink seawater? How is salt separated from seawater?</p>	<p>Natural sources; inland water and sea water; potable water; diarrhoea and other common water borne diseases, safe handling of water, purification of water.</p>	<p>Health personnel of the local area, library resource.</p>	<p>Discussion with the elders/health personnel about pollution of natural sources of water and its effects; demonstration/group activity of simple methods of water purification; seperation of salt from saline water.</p>
<p><i>Water sources</i> Where do you see large amounts of water in your neighborhood? Is it a tank/pond/canal/river/dam? What do men/women/children/animals do with the water there? Is it used for bathing/washing? Who bathes/washes there and who does not? How can we ensure that this water is not made dirty? Do you find factories/people dumping garbage or harmful materials in</p>	<p>Reservoirs, canals, dams etc.; Different public activities at water bodies; protection of water bodies. Water as a scarce resource and the struggle for acquiring it (those who can exploit resources by digging deeper and deeper wells).</p>	<p>Film, photographs of dams/canals/tanks/ponds etc., local knowledge. Narrative on the recent struggle of the panchayat's against Coke in Plachimada, Kerala.</p>	<p>Visit to the natural sources of water in the local area and observing what uses the water is put to. Discussion, and writing letters/making posters highlighting the misuse of the water body.</p>



Questions	Key Concepts/ Issues	Suggested Resources	Suggested Activities
<p>rivers or seas? Are some animals also facing problems due to what we do to the rivers or seas?</p> <p>Our river/sea Which is the river closest to our locality? Do we find any change in the water flow in different seasons? Which are the big rivers we know of? Have you seen the sea? Which are the animals found in the sea/river?</p> <p>Water vanishes when heated? Why do puddles dry? In which season do wet clothes dry easily? When do they dry with difficulty? Have you seen and wondered where water droplets on the outside of a cold glass of water came from?</p> <p>5. TRAVEL Animals for transport Have you traveled on a tonga / horse carriage? How is it different from travelling on a bus? Are the horses well looked after?</p>	<p>Rivers and seas; seasonal change in water flow; animals in the sea/river. Water pollution and harmful effects on animals.</p> <p>Basic processes of evaporation and condensation</p> <p>Use of animals for transport; sensitivity towards animals.</p>	<p>Local knowledge, Story on the lines of the SCERT, Delhi Class VI Civics – lesson called Yamuna.</p> <p>Child's daily observations and class room discussions.</p> <p>Personal experience of travel; songs about travel by tonga, etc.</p>	<p>Drawing/Painting/Make a model of a water body in the neighbourhood (using scrap materials) as well as the animals found in the river/sea.</p> <p>Activity on water drying up from a wet cloth or dish of water in different conditions such as sunlight and shade.</p> <p>Enacting instances of animals used for transport and people riding them.</p>

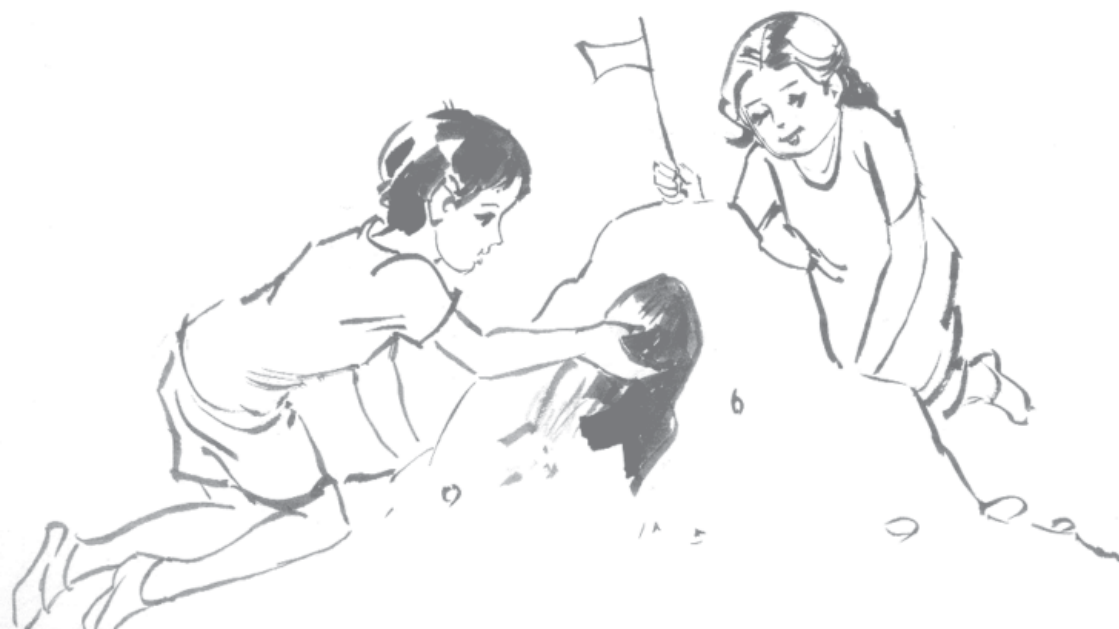


Questions	Key Concepts/ Issues	Suggested Resources	Suggested Activities
<p>Have you seen a horseshoe? Why is it used? What materials have you seen being transported using animals? Are there any special occasions when you ride on animals?</p> <p><i>Paying for travel</i></p> <p>How do you pay for our travel by train/bus/boat etc? Who issues/checks the bus /rail ticket? Which currency notes and coins have you seen? Pictures of which animals can we see on a ten rupee note? Which symbol is found on every coin? How many scripts can you recognise on a note? Who is the person whose face is shown on every currency note? What coins/notes did our grandparents use when they were young?</p>	<p>Familiarity with currency notes and coins, national symbols, recognizing some language scripts; Introduction to Mahatma Gandhi Old coins, change.</p>	<p>Coins and currency notes; railway and bus tickets. Old coins/Pictures of old coins; visit to a museum.</p>	<p>Enactment of a bus journey. Comparison of coins and currency notes; /Tracing of coins. Designing a school emblem/logo.</p>
<p><i>Travel to another place</i></p> <p>Do you know anyone who has traveled very far from your village/city? Why did they go so far? What are they doing there? How do they travel when they visit your family?</p>	<p>Different land forms, languages, clothing, food habits, some idea of another country (only through a story/imaginary narrative).</p>	<p>Travelogue describing the place they have come from; description of a train/ship/plane journey.</p>	<p>Reading and listening, discussion, writing about a traveling experience of oneself or visiting relatives.</p>





Questions	Key Concepts/ Issues	Suggested Resources	Suggested Activities
<p>6. Things We Make And Do</p> <p><i>Building materials and tools</i></p> <p>How are bricks made? What tools have you seen being used for making a wall or a house? Is there a bridge to cross while coming to school? What kinds of bridges have we seen and where? How many kinds of bridges can we make?</p>	<p>Process of making involves raw materials, tools, labour, energy—changes over time in these and in environment too.</p> <p>Materials and tools used for construction;</p> <p>Different skills of people at engaged in a construction activity.</p>	<p>Narratives and pictures of different bridges children cross, on the lines of the book – Going to school in India (by Lisa Heydlauff Penguin); of the process of construction, use of tools and materials.</p> <p>Observation of different bridges; making bridges.</p>	<p>Making bricks; drawing and talking about different tools.</p> <p>Observing, drawing and describing different bridges and how people make their own local bridges from ropes, bamboo and logs of wood.</p> <p>Making toy bridges in school.</p>



V

CLASS V

ENVIRONMENTAL STUDIES

Questions	Key Concepts/ Issues	Suggested Resources	Suggested Activities
<p>1. Family and Friends</p> <p>1.1 RELATIONSHIPS</p> <p><i>Family tree</i></p> <p>Can you make a family tree with as many of your relatives you can get information about?</p> <p>Who are the relatives whom you have never seen? Where do they live?</p>	<p>Family in transition – Impact of larger socio-economic forces are changing family structure and quality of life in families; Idea about several generations; how some people move away, some continue to live together, and how households get formed/reformed at several places. How these are affecting roles, relationships, value systems, aspirations within a family.</p>	<p>A story woven around a family tree with old family photographs.</p>	<p>Activity - Write the names of all your family members along with their ages. How many generations have you been able to get details about?</p>
<p><i>Shifting from place to place</i></p> <p>Have you always lived at the place that you now live in? If not, where does your family come from?</p>	<p>Shifts in habitation-migration/transfers/demolition displacement Associated difficulties</p>	<p>Story of a migrating family or a family displaced by the construction of a dam or demolition of an urban slum.</p>	<p>Discussion or letter writing; drawing.</p>
<p><i>Who laughs the loudest?</i></p> <p>Who is the tallest/shortest in the family? Who has the longest hair? How long? Who has the loudest</p>	<p>Basic ideas of measurement - of height; Observing and appreciating qualities and</p>	<p>Cartoons; narratives.</p>	<p>Mimicking people in the family – laugh and voices; drawing people in the family.</p>





Questions	Key Concepts/ Issues	Suggested Resources	Suggested Activities
<p>voice/laugh in the house? From how far away can you hear it? Who speaks the softest? When does a child cry the loudest? When she is hungry-or angry? Who is the best cook in the family?</p> <p><i>Our likes and dislikes</i> Which is your favourite colour? Which is your friend's favourite colour? Which is your favourite food? What about your friends favourite food? Do you know your friends' likes and dislikes? Are there any smells you don't like (fish, mustard oils, garlic, eggs etc) ? Do you eat fish?</p> <p><i>Feeling to read</i> Do you know how people read with their hands? Do you know someone who finds it difficult to walk/speak/see etc.? How do you think they learn to overcome the problem?</p> <p>1.2 WORK AND PLAY <i>Team games – your heroes</i> Do you play any games in</p>	<p>skills of relatives; observing infants.</p> <p>Our bodies, our senses, our likes/ dislikes vary e.g. our concept of foul/fragrant smell <i>Cultural influences of taste, smell, etc(to be discussed without stereotyping).</i></p> <p>Awareness and sensitisation towards the problems of physically challenged;</p> <p>Types of games/sports,</p>	<p>Narratives about preferences in taste, smells, colours in different cultural context.</p> <p>Autobiography of Helen Keller; excerpt from her teacher's account of how she learnt; Braille sheet.</p> <p>Library resources- Indian</p>	<p>Writing exercises about an infant they have observed.</p> <p>Observation, discussion, describing and writing about a friend's likes/ dislikes; a class survey about childrens favourite colour/food etc.</p> <p>Activity with Braille paper (or simulated Braille paper).</p> <p>Collecting information,</p>

Questions	Key Concepts/ Issues	Suggested Resources	Suggested Activities
<p>teams? Have you ever been captain of the team? Do boys and girls play together? Have you heard of any Indian team playing in another country? Which is your favourite team sport? Do you know any National level player?</p> <p>Local games/martial arts</p> <p>What are the local games/martial arts of your area? Do you know someone who is good at them? Have you seen a young acrobat or wrestler practicing? Who taught them? For how long have they learnt the art/game? What are the new games in your area that were not played earlier? What do you do in the evenings for leisure? What if there is no TV? Who decides what programmes to watch?</p> <p>Blow hot blow cold</p> <p>How many times do you breathe in a minute – on sitting still, just after a run? How much can you expand your chest by breathing</p>	<p>importance of team spirit in games, gender stereotyping.</p> <p>Some idea of other countries and national teams.</p> <p>Gender, class stereotyping in play.</p> <p>Local and traditional martial art forms/games.</p> <p>Typical practice routines; teachers/gurus; changing patterns of local games.</p> <p>Changing nature of leisure.</p> <p>Our breathing – estimates of different rates; chest expansion and contraction in the child's body while exhaling and inhaling; My</p>	<p>cricket team; narrative about some national and international players.</p> <p>Description or photographs of traditional martial arts, 'Nat', acrobat, boat race, etc.</p> <p>Story by Zakir Hussain – "<i>Usee se thanda usee se garam</i>" – Zubaan books.</p>	<p>making picture albums ; posters of sports persons</p> <p>Reading, discussion, collecting information and writing about local/martial games.</p> <p>Observation, , activity of breathing in and out and observing the difference (mirror/glass/on palm); measuring chest; counting</p>





Questions	Key Concepts/ Issues	Suggested Resources	Suggested Activities
<p>deeply? Can you make a glass cloudy by blowing on it? How do you blow to make something cold? Do you also blow to keep a fire going?</p> <p><i>Clean work - dirty work?</i></p> <p>Can you list ten different types of work that people do for you. In this list what work is seen as dirty and what is seen as clean? What would happen if there were no one to - clean our streets/our home/clear the garbage?</p> <p>1.3 ANIMALS</p> <p><i>How animals find their food?</i></p> <p>If you leave some food outside your house do some animals take it away? How do they find it? Do these animals also hear/speak/ see/smell/ eat/ sleep?</p> <p><i>What we take from animals?</i></p> <p>What animal products do we use for clothing, shelter, etc.?</p>	<p>breath – hot and humid; tacit understanding of cooling by blowing and helping a fire to burn.</p> <p>Dignity of Labour Dependence of society on such essential services. Choice of work as a societal value.</p> <p>Sense organs; Comparison with humans – activities such as eating sleeping etc.</p> <p>Animal products used by us.</p>	<p>Extract from Gandhi's autobiography; narrative from another country - sweepers treated with dignity; story of a Valmiki boy discriminated in school because of parents' occupation.</p> <p>Information about animals' senses and other functions. Narratives about animals such as ants, bees, dogs, birds, snakes etc giving ideas about their senses.</p> <p>Child's daily life experience, information about products we obtain from animals.</p>	<p>heart beat and breathing rate , making and using a stethoscope</p> <p>Reading and discussion based on suggested resources.</p> <p>Observation of animals to study their response sound, food, light and other stimuli.</p> <p>Listing and drawing of items made from animal products.</p>



Questions	Key Concepts/ Issues	Suggested Resources	Suggested Activities
<p><i>Why is the tiger in danger?</i></p> <p>Why do people kill wild animals? Which are the animals that are poached?</p>	Protection of wild life; selling of animal parts.	Excerpt from 'Man eaters of Kumaon' by Corbet.	Discussion, reading, poster making activity with a message to save wild life.
<p><i>People who depend on animals</i></p> <p>Do you know people who catch/trap/hunt/entertain using animals? Have you seen how snake charmers/gujjars depend on animals?</p> <p>What do you understand by cruelty to animals? Do you think a snake charmer is cruel to the snake?</p> <p>Have you seen scenes of hunting in rock paintings or on ancient seals?</p>	<p>Communities dependent upon animals; hunters restricted to smaller spaces; changing patterns of wild and domestic animals.</p> <p>To be sensitive about cruelty to animals; realize that people who depend on animals for their livelihood are not necessarily cruel to them.</p> <p>Basic idea of pre-historic hunters and the wild animals seen at that time.</p>	<p>Library resources; illustrations of pre-historic hunting scenes (Bhimbetka). Narrative of gujjars' or snake charmers' relationships with animals.</p> <p>Child's observation; an story/narrative about an animal and its caretaker, e.g, mahouth/tonga wala</p> <p>Films/pictures of shooting, skins (tiger) of animals.</p>	<p>Discussion on people whose livelihood depend on animals; drawing; Discussion on people teasing/troubling animals at the zoo/other places.</p>
<p>1.4 PLANTS</p> <p><i>Growing plants</i></p> <p>How does a plant grow from a seed? Can you grow a plant without seeds? How do you grow mangoes/potatoes? Where does the seed come from? Have you seen seeds that fly/stick to your clothes/drift in the water?</p>	Seed germination, root and shoot axis, baby plant, storage of food in the seed; seed dispersal.	Seeds, germinated seeds.	Study germination of some seeds, experiment to determine conditions suitable for germination (air and water).



Questions	Key Concepts/ Issues	Suggested Resources	Suggested Activities
<p>Forests and forest people</p> <p>Have you seen or heard about a forest? How do people live in forests? How is their life threatened by forests being cut? What kinds of foods do they collect from the plants there? What leaves are used for eating on? Do your parents remember places with trees/forests where there are none today? Why were the trees cut and what is there today?</p>	<p>Tribal life; effects of deforestation; communities dependent on forest products e.g., 'pattals', bamboo products, etc.</p>	<p>Information about tribal life, communities dependent on forest produce, effects of deforestation.</p>	<p>Exploring from parents, reading, and discussion.; tracing tree trunks.</p>
<p>Protected trees</p> <p>Have you heard of a park/sanctuary? Who looks after it? Does anybody own it? Have you seen a place where trees are worshiped or protected by the villagers?</p>	<p>Public/private ownership of trees/forests. Sacred groves; people's movements to protect their forests.</p>	<p>Story of the Chipko movement and the women's role in protecting trees.</p>	<p>Enactment of chipko andolan; poster – 'save trees'; survey and identify any 'green belt' in your neighbourhood.</p>
<p>Plants that have come from far</p> <p>Does tea come from a plant? Where did people first grow tea and what does the plant look like? Does it grow only in</p>	<p>Plants from different countries.</p>	<p>Song/poem from Chakmak: "Alu, mirchi, chajji, Kaun kaban se aye ji" Story about the Chinar tree coming to Kashmir.</p>	<p>Local knowledge, reading, and discussion, reciting the poem together; making tea.</p>





Questions	Key Concepts/ Issues	Suggested Resources	Suggested Activities
<p>some places/climates? What did people drink when there was no tea in India?</p> <p>2. Food <i>When food gets spoilt</i> How does food spoil? How do we know that food is spoilt? Which food spoil sooner than others? What can we do to prevent food from getting spoilt? What do we do to keep it fresh during travel? Why do we need to preserve food? Do you leave food in your plate?</p> <p><i>Who produces the food we eat?</i> Do you know of different kinds of farmers? Do all farmers own their land? How do farmers get the seeds they plant every year? What else besides seeds is required for a crop to grow?</p> <p><i>What did people grow earlier?</i> Did your grandparents or any elderly person eat the</p>	<p>Spoilage and wastage of food. Preservation of food, drying and pickling.</p> <p>On different types of farmers. Hardships faced by subsistence farming, including seasonal migration. Need for irrigation, fertilizers.</p> <p>Changing food habits, changing crops grown in</p>	<p>Sharing family experiences Interaction with a person involved with food production/preservation.</p> <p>Farmers' narratives - Could take one example from Punjab and the other from AP. Story of a child missing school because of his/her family's seasonal migration. Family members. Visit to a farm.</p> <p>Information on food from different places.</p>	<p>Keep some bread, other food for a few days – see how they spoil.</p> <p>Study germination of seeds, experiment to determine conditions suitable for germination; Observations in any farm.</p> <p>Collection of samples or pictures of food from</p>



Questions	Key Concepts/ Issues	Suggested Resources	Suggested Activities
<p>same food you eat today? Do all of us eat the same kind of food? Why do we eat different kinds of food?</p> <p>When people do not get food</p> <p>Do you know of times when many people do not get enough food to eat? Have you seen where extra grain is stored? How do you know when you are hungry? Do you know of people who get ill because they do not have enough to eat?</p> <p>Our mouth – tastes and even digests food!</p> <p>How do we taste food? What happens in the mouth to the food we eat? Why do we give glucose to patients? What is glucose?</p> <p>Food for plants?</p> <p>What do plants need for food? Do you know of any plants that eat insects? What do animals eat? Do all animals eat the same food? Do animals eat other animals?</p>	<p>some areas. Different food habits in different places/cultures.</p> <p>Hunger, famine (as both a natural and man-made phenomenon); grain being spoilt in storage; nutrition deficiency diseases.</p> <p>Tasting food; chappati/ rice becomes sweeter on chewing; digestion begins in the mouth; glucose is a sugar.</p> <p>Water, manure, air for plants; Insectivorous plants e.g. pitcher plant, Venus fly trap; basic idea of food chain/web.</p>	<p>Print material on different calamities; Narrative of the Bengal famine as a man-made calamity; TV news bulletins etc.</p> <p>Child's experience; some samples of food items; story of someone on a glucose drip.</p> <p>Pictures/visuals of insectivorous plants.</p>	<p>different places/cultures.</p> <p>Collection of pictures related to natural calamities; discussion on affects.</p> <p>Tasting activity, action of saliva on rice/chappati.</p> <p>Observations and discussion on food for plants; making a model of a food chain/web.</p>



Questions	Key Concepts/ Issues	Suggested Resources	Suggested Activities
<p>3. Shelter</p> <p><i>Why different houses</i></p> <p>Why do you have different kind of houses in different places? Different houses in the same place?</p> <p><i>A shelter for everyone?</i></p> <p>Does everyone have a shelter to live in? Why do people live together in villages, hamlets, colonies, neighborhoods?</p> <p><i>Ants live in colonies?</i></p> <p>Do you know how bees/ants live together in colonies?</p> <p><i>Times of emergency</i></p> <p>Have you heard of houses being damaged by floods/earthquakes/cyclones/fires/storms/lightening? 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?</p>	<p>Variation in shelter: regional difference, difference due to climate and materials available, economic status, etc.</p> <p>Need for living close to others, the idea of neighbourhoods.</p> <p>Need for sharing resources and spaces, division of spaces.</p> <p>Ant or bee colony, social behaviour in insects.</p> <p>Disaster and trauma of losing one's home; community help; Hospitals, police stations, ambulance, shelters, fire station, first aid.</p>	<p>Different houses in different climates and regions.</p> <p>Pictures of villages, colonies etc.</p> <p>A case study of social organisation in bees/ants.</p> <p>Newspaper clippings.</p>	<p>Making models of houses; collection of materials used to make houses in different places.</p> <p>Write and draw the area you live in, find out about people who work for everybody.</p> <p>Observations and drawings of ant colonies, different types of ants.</p> <p>Discussion, finding out about the hospital, police station, fire station, etc.</p>



Questions	Key Concepts/ Issues	Suggested Resources	Suggested Activities
<p>4. Water</p> <p><i>Water from where in earlier times?</i></p> <p>From where and how far did your grandparents get water? How far do you have to go for water? What are underground wells/'baolis'? Do you still see them being used? Have you seen a 'piaao'?</p> <p><i>Water flow</i></p> <p>From where do farmers get water to grow crops? Do all crops need the same amount of water? Have you seen water flowing upwards? What are the different ways in which you have seen water being lifted? How is flowing water used to grind grain?</p> <p><i>Plants and animals in water</i></p> <p>What kinds of animals and plants live in water? Are there weeds that are covering your pond/ lake/ river? Can you classify all the animals you see around you to show which ones live in water and which live on land?</p>	<p>Estimates of distance measurement; changes in sources and water availability over time; community service especially for long-distance travellers.</p> <p>Sources for irrigation; different quantities of water for different crops; Different methods of lifting water; the use of a waterwheel.</p> <p>Animals and plant life in water; classification in terms of similarities and differences.</p>	<p>Illustrations, story of a 'baoli'/stepwell</p> <p>Farmer/any local person who works in fields, a plant/crop.</p> <p>Weeds of different kinds; pictures of plants and animals living in different habitats.</p>	<p>Enquiry from grand parents/ other elders; drawing, model making of a step well.</p> <p>Interaction with a farmer, visit to a field, making water wheel., activity with water wheel.</p> <p>Listing and classification; drawing of water body.</p>



Questions	Key Concepts/ Issues	Suggested Resources	Suggested Activities
<p><i>What floats, sinks or mixes?</i></p> <p>Have you ever seen anything floating in water? Can you classify as many things around you to see which float, which sink and which mix with water? Does oil mix with water? What are the similarities and differences in water, oil, milk, cold drink, etc.? How do we measure these?</p>	<p>Basic observations and classification related to floatation and solubility in water; oil and water are liquids that do not mix; basic concepts about liquids; litre as unit of measurement of volume.</p>	<p>Various materials to experiment with, such as, sugar, stone, oil, salt, sand etc.</p> <p>Story of the donkey and the salt/cotton bag.</p>	<p>Hands-on activity to observe solubility in water, floatation; discussion, interpretation.</p>
<p><i>Mosquitoes and malaria</i></p> <p>Is there any stagnant water in your locality? Do you find more mosquitoes in stagnant water? Is there any way to reduce the mosquitoes in water? Have you heard of malaria? In what season do you find more people getting ill with malaria?</p>	<p>Stagnant and flowing water; mosquitoes and malaria.</p>	<p>Health worker or a doctor. Newspaper articles on malaria etc.</p>	<p>Interaction with a community doctor; observation of site of stagnant/flowing water.</p>
<p>5. Travel</p> <p><i>Petrol or diesel</i></p> <p>Do all vehicles need petrol to run on? What other fuels do you know that are used for vehicles? What do trains run on? In the past what did they run</p>	<p>Fuels used in vehicles; Fuel is costly. Non renewable source.</p>	<p>Poems and songs about trains/cars etc.; Enquiry from adults; the story of 'petrol'.</p>	<p>Discussion, finding out different fuels used, comparison of cost of petrol and diesel.</p>



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<p>on? What do tractors use as fuel? For what other purposes are petrol and diesel used?</p> <p>Find out the cost of a litre of petrol/diesel in your area? Do all vehicles run an equal distance on a litre of fuel?</p> <p>Rough and tough</p> <p>Have you seen or been to a mountain? How and why do you think people make such difficult trips? How do you think they train for it?</p> <p>Ride on a spacecraft</p> <p>What all do you see in the sky – at day time? And at night? How many of the things you see in the sky are man-made? Have you heard of people traveling in a space craft?</p> <p>Oldest buildings</p> <p>Is there any well-known monument/historical place in your area that people come to visit? What are the oldest buildings around your area? Have you traveled far to see any historical monuments?</p>	<p>Mountains, expeditions and the spirit of adventure; some idea of training for high altitude; national flag.</p> <p>The sky in the day and night. Basic exposure to the aerial view of the earth and what India looks like from there.</p> <p>Heritage buildings as a source of knowledge about our past; to be able to understand how they were built; materials used come from a variety of places, skills of the crafts person; Some</p>	<p>Excerpt from the autobiography of Bachendri Pal; Flag of India atop mount Everest; flags of some countries</p> <p>Story of Rakesh Sharma/ Kalpana Chawla.</p> <p>Oral narratives from people; pictures.</p>	<p>Act/dance to show climbing on a difficult mountain; Designing a flag for your school; identifying some other flags</p> <p>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!</p> <p>Drawing pictures of the building or the monument in your neighbourhood or memory or imagination.</p>

Questions	Key Concepts/ Issues	Suggested Resources	Suggested Activities
<p>Have you heard of those personalities who lived in these monuments or who built these?</p> <p>6. Things we Make and Do</p> <p><i>Growing Food</i></p> <p>How do we grow food? What tools do we use for preparing the field? For cutting and harvesting? For cutting and cooking different vegetables/dishes?</p> <p>How do we water the crops? How do we lift water through a pump or a waterwheel? Can we make a water wheel, sprinkler, etc.?</p>	<p>historical personalities.</p> <p>After basic needs met, exploration leading to improving and overcoming human limitations; greater expression of creativity; overuse of natural resources needs to be checked.</p> <p>Some idea of the story of a grain from the field to our plate – in terms of processes and the tools used. Different things made from the same grain, say, wheat/rice.</p> <p>Simple observations of water lifting in fields or in homes; making of a water wheel, sprinkler, etc.</p>	<p>Narratives; talking to elders, farmers, those involved in growing and cooking food.</p> <p>'<i>Dum se pump</i>' by Arvind Gupta.</p>	<p>Observing and talking about processes of growing food; drawing tools used in different processes; finding out about different dishes made from the same grain, say, wheat/rice.</p> <p>Making a simple waterwheel, sprinkler, pump.</p>

