



3

CHAPTER

Promoting Green Practices Within and Beyond School

- Which subject do you teach?
- How much scope is there to bring in an environmental perspective to the subject you teach?
- Can some part of what you teach be taught through practical exposure, activities and hands-on experiences?
- Do you provide opportunities to the students to share their own experiences, ideas and perspectives while teaching-learning?
- Do you feel that building skills and attitudes is also a part of your teaching-learning?

“Everything that belongs to us comes to us if we create the capacity to receive it”

– Rabindranath Tagore

You are already familiar with the different aspects of a Green Curriculum that includes addressing the environmental concerns by emphasising on the processes of teaching-learning which are different from rote methods. It calls for connecting with life outside the school, with an emphasis on an integrated perspective across disciplines.

You may also recall that a Green Curriculum relates to learning about (to acquire knowledge and awareness), for (to address the issues and concerns

of environment in a holistic manner) and through the environment (using the environment as a teaching-learning resource). It invites learners to explore, question, analyse and apply their understanding. Such participation and engagement of the learners fosters critical thinking, attitudinal changes and responsibility which would lead to positive action. Though 'environment' has a wide-ranging connotation in terms of the natural and socio-cultural milieu of the learners that extends well beyond the school, the immediate school surroundings can also be used as a rich teaching-learning support.

Now the questions arise:

- 2 Should a Green environment be created in school/neighbourhood first so that you (as teachers) could provide learning experiences using such an environment?
- 2 Should we provide learning opportunities that enable active involvement of students in the Greening process of the school/neighbourhood environment? Let us find out.

You know that in order to help students build connections and linkages between the knowledge gained from textbooks and their surroundings, it is necessary to not just expose them to their environment but also to motivate them to be involved meaningfully in it.

3.1 ESD and the School Environment

The school environment comprises the physical and the socio-cultural environment as well. The physical environment includes the school building and the built structures of the school such as classrooms, library, labs and common spaces like corridors, school kitchen, toilets, school garden and the playgrounds. It is the organisation and maintenance of these areas which are important indicators of environmental practices for sustainability in the school.

Greening of the physical environment is impossible without the students and support staff that include teachers, administrative staff,

helpers, gardeners, watchmen, cleaners and the community. The inter-relationships amongst them and with the physical environment of the school and its surroundings constitute the socio-cultural environment of a school.

The school environment provides enormous teaching-learning opportunities. Students gain first-hand experience from their surroundings that go beyond the classroom and as a teacher we need to think of strategies of engaging them with it. Students learn in different ways and styles, at different paces and from different sources, textbooks being only one of them. Students are constantly interacting with the physical environment of their school during structured or unstructured time consciously or unconsciously.



Let us
Reflect

- _ What different strategies come to your mind that can expose to and engage students actively with their surroundings?
- _ Do you feel that it would take too much time if students were to be engaged in activities that go beyond the classroom?
- _ Do you hesitate to engage students in any such activity due to the issues of managing the large number and demands of time and discipline?

In your teaching-learning activities, you might be asking students to take up simple action projects. These do not require extra resources and can be taken up by an individual or a group of students, if properly planned and facilitated, so that different aspects of the school environment are taken up simultaneously, leading to the overall improvement of the school.

A variety of activities can be planned that use these resources as learning opportunities and also link to the curriculum. Such activities are useful not only in engaging students in direct interactions and participation in different activities of the school, but are also valuable in inculcating

a sense of ownership and responsibility towards the school and as members of a larger community extending beyond the school.

Read the following case studies.

There was going to be an inspection in the school the other day. The school premises were full of dirt everywhere. The Principal issued orders to all and warned the staff with strict action if there was any lapse on anybody's part. Everyone swung into action and all efforts were made to clean the school campus. Students were asked to wear neat clothes and trim their nails. Loads of garbage was collected and dumped in the backyard. It was covered with grass collected from the mowing of the lawns of the school. After the inspection was done, everything was back to the same, where no one took responsibility and all students and staff were used to the same routine.

The government school at Baprola, Delhi, is always neat and clean, no matter what time of the day one visits it. Not just the classrooms and corridors are clean but the school lawns are neatly manicured. The entry to the school itself is such a pleasant experience with attractive dustbins adorning the corridors and other corners of the school. The plants are watered and the school campus appears to be green with many different trees and flowering plants. No graffiti is visible on any wall or furniture of the school.

Let us Reflect



- _ How do you differentiate between the two schools?
- _ To which of these two schools does your own school have a close resemblance?

We owe it to ourselves and to the next generation to conserve the environment so that we can bequeath our children a sustainable world that benefits all.

—Wangari Maathai, Nobel Peace Prize Winner 2004

Entrance to the School



Passage outside the main building



Ducks in the Eco Park



Students and staff outside the Eco Park of School



The School garden



Fig. 3.1 : Government Senior Secondary School, Baprola, Delhi

Following are the excerpts from an informal talk with the Principal of the Baprola School, Shri Om Subhash.

How did you manage all this?

Actually, I wanted to do something since I was posted here four years ago. The land here was uneven and had lot of bushes. I talked to the community people and expressed my willingness to make this school one of the best schools. I selected a team of dedicated staff members and motivated them towards the cause. We decided that we will carry out the work phase-wise. During the first year, we focused on land management and plantation activities. We involved the community to help us in this. Till date, some of the community members help us in watering and cleaning activities of the school.

Lot of water is required to water the plants. How do you manage?

We harvest the rain water. So we do not face any dearth in any season not only for watering the plants but also for providing clean drinking water to the children. We have three RO systems installed for this purpose.

Have you used the Building as Learning Aid (BaLA) concept?

Yes. You can see that. After plantation, we focused on the school building. Using the BaLA concept we utilised various spaces for concept learning and giving appropriate messages to the children. (see Fig. 3.1).

How do you involve children?

Along with Greening of the school campus, we carried out the teacher orientation so that students are involved in this process. Now teachers make students visit the medicinal garden using plants and trees for learning activities. Also we are segregating waste and doing vermicomposting in the school. Students are involved in taking care of worms for composting, preparing compost and using it as manure for the plants in the school. We also supply the manure to those who wish to purchase. We encourage people to send us the waste that can be recycled. We use the money earned from various activities for school development.

In addition to greenery, your school also has a very colourful look with these nice paintings, sheds, benches, dustbins. How did you do this?

Some waste pipes have been used to create these colourful sheds for students to relax and play. The big trees are supported by cemented platform. Students and their parents also sit in the shade during summer. We have designed child-friendly spaces. Colourful dustbins painted in interesting characters encourage students to use them. We have also introduced bird shelters in the trees. One can see many birds in different seasons here.

How did you manage the funds?

We estimated the funds available to us from the government. I think there are enough funds and one only needs to plan and act appropriately. We believe that it is children's money and it is our duty to use it meaningfully for them. Careful and thoughtful planning with my colleagues and the community helped us in this endeavour.

Let us
Reflect



Do you think that the Baprola School fulfils the criteria to be a Green School? How? If not, how can that be improved?

The first step towards ESD through Greening the school premises would be to review our immediate surroundings where we and our students spend a large part of our day. We generally complain about the lack of maintenance or management and put the blame elsewhere, feeling that we have neither the capability nor the responsibility to address these issues. Let us start with the classrooms where you and your students spend most of the time.

Look at the illustrations below. Put a 3 or a 7 depending on the appropriateness or inappropriateness of the situation. Also provide reason(s) for your opinion.

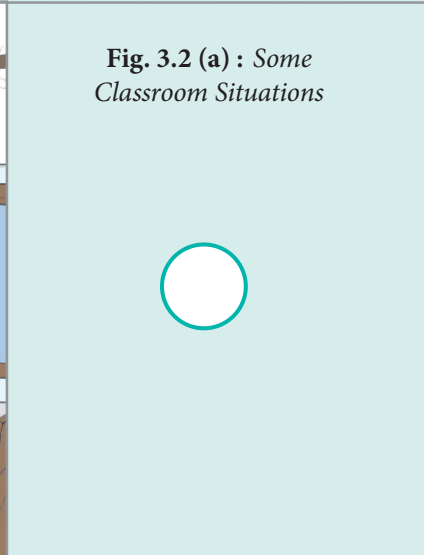
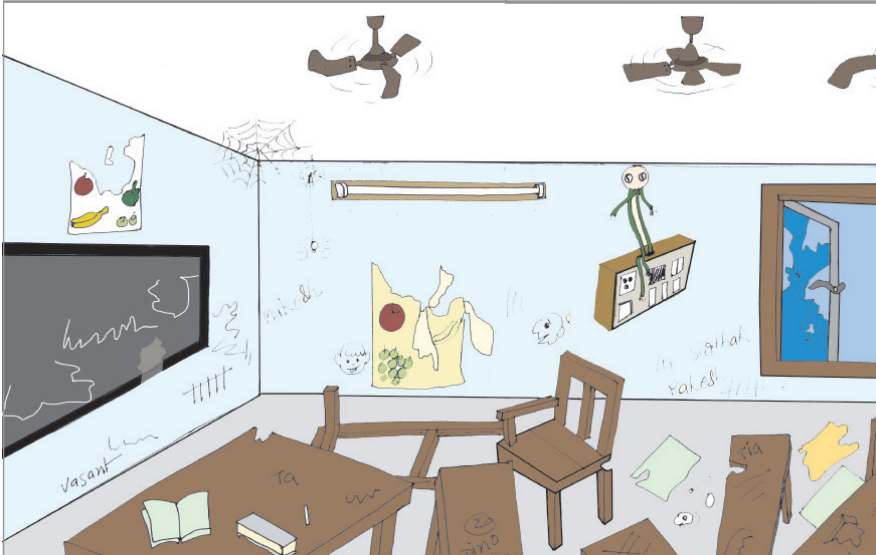
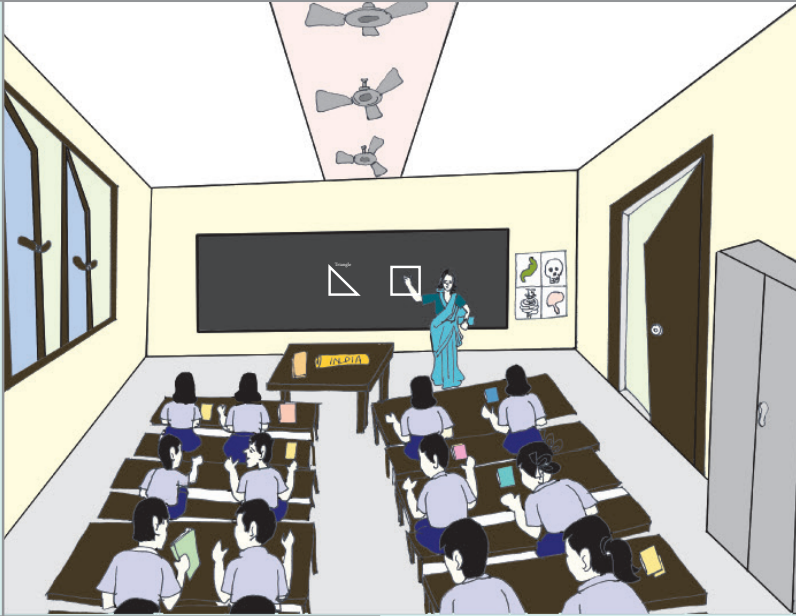
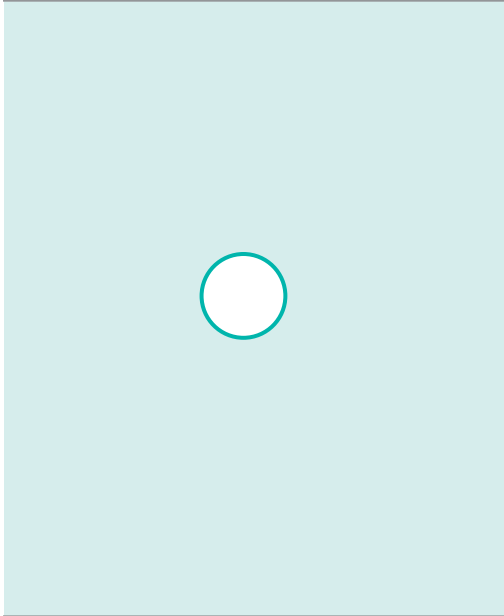
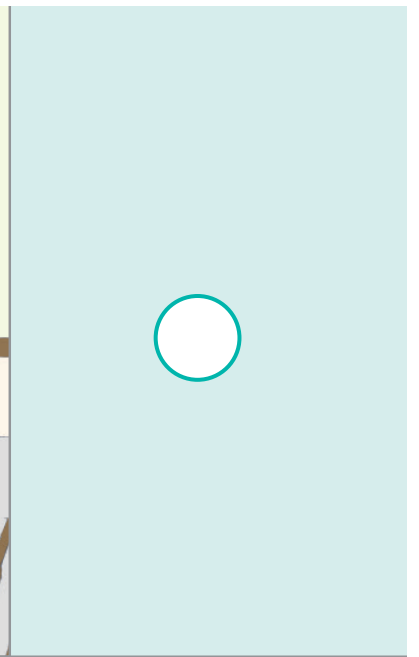


Fig. 3.2 (a) : Some Classroom Situations

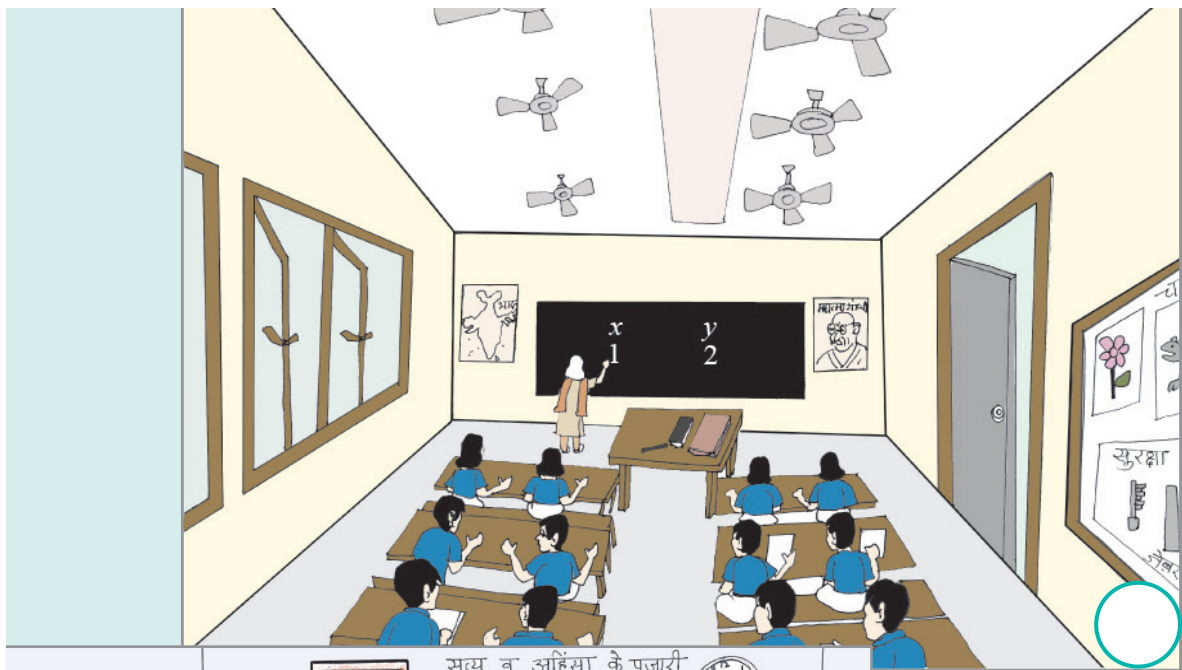


Fig. 3.2 (b) : Some Classroom Situations

Could you observe some of the situations given below in these illustrations?

- 2 Students cleaning window panes.
- 2 Students sitting with their back to the windows and windows on the left side of children.
- 2 Position of the fans in the middle and students sitting on the sides and fans placed right above children.
- 2 Cupboard blocking the windows
- 2 Fans on in empty classrooms, litter in the classroom, CFLs instead of tubelights, fans with regulators, ventilators and double-door classrooms, scribbling on the furniture and walls.

Which of these are problem situations? How can you improve them?

Keeping the principles of Greening the school environment, safety, security and health were crucial to the children's development, using environmental resources promoting sustainability. The following activities are suggested to accomplish the objectives of ESD.

Let them carry out audits as suggested below. Involve them in the activity to assess whether their classroom is properly lighted, ventilated and cleaned.

3.1.1 The Classroom

Enlist the problems that you face with regard to light in your classroom?

- too much glare on the blackboard;
- too little light;
- dust covered bulbs;
- dirty window panes blocking light; and
- any other.

A well-lighted, ventilated and clean classroom provides a healthy environment for teaching-learning, whereas a poorly lighted and dingy classroom puts strain on the eyes and also breeds many diseases causing

health concerns. Involve your students in doing the natural light audit of their classroom.

(a) Natural Light Audit

S. No.	Is there adequate light in the classrooms/rooms? If not, check the following.	Yes/ No/ any details	What can be done?
1.	Are there sufficient number of windows?		If no, explore the option of increasing the number of windows.
2.	Is the light from the window falling on the work-zone of the children in your class?		<p>If no, find that out.</p> <ul style="list-style-type: none"> ▸ If the window sill is high and light does not fall on work zone (desk / table/ floor, as the case may be), explore the possibility of lowering of sill. ▸ If lowering of sill is not possible, splay the sill of the window from inside to admit more light and natural ventilation on the work zone.
3.	Are the window panes clean?		If no, you can have a period involving all the students to wipe and clean the panes as the light may be reduced because of the dirt deposited on window panes.
4.	Are the windows placed on the sides (preferably left) of students rather than back or front?		<ul style="list-style-type: none"> ▸ If no, explore the possibility of changing the seating arrangement of children, so that the light comes from their side. ▸ A new blackboard can be constructed on a suitable wall to facilitate the arrangement. ▸ Reallocation of activities in rooms might help in certain cases.

5.	Are some trees/ vines, etc. outside classroom blocking the light?		If yes, the tree branches can be trimmed to allow more light inside. ` The trees selected to be planted near windows in future should have a canopy height which does not block the light.
6.	Are the interiors of the room painted in dark colours?		If yes, painting the rooms in white or light semi-glossy paint will improve the light quality of the rooms. ` Make sure that walls adjacent to windows that reflect light internally, are painted in light colour. Dark coloured Teaching Learning Materials (TLMs) should not be placed there.
7.	Is there a need to supplement natural light with artificial light?		If yes, artificial light such as tubelights/CFLs/LEDs may be used where scope of using natural light is not adequate.
8.	How many light points are there?		Get them installed if those are less than required. If the number of artificial lights is more or less than required, take appropriate action accordingly.
9.	Are they all working?		The light points that are not in working condition may be repaired/ replaced.

Let us
Reflect



– What are the problems that you face with regard to ventilation in the class?

(b) Ventilation Audit

S. No.	Are the classrooms properly ventilated?	Yes/No/ any details	What can be done?
1.	What are the sources of ventilation in your class?		
2.	Number of doors/ windows/ventilators in the classroom		<ul style="list-style-type: none"> · At least two doors are required per classroom. · Appropriate ventilation should be there.
3.	Do they remain closed or are they kept open?		If some window is not opening, the reason for this may be found and if required, someone who can fix the problem may be called.
4.	Is there a provision for cross ventilation?		<p>Possibility for opening windows and doors on the opposite walls in a room may be explored.</p> <p>Ventilators need to be there and should always be kept open.</p>
5.	<p>What is the location of doors/windows/ventilators?</p> <ul style="list-style-type: none"> - Are the doors on the same wall? - Are the windows/ventilators on the walls opposite to the doors? - Are the ventilators at some higher place/ close to the ceiling? 		<p>Two doors preferably on the same wall need to be there for ventilation as well as safety.</p> <p>Windows need to be there on the walls opposite the doors</p> <p>Ventilators should be so located that hot air is not trapped inside the room.</p>



– What problems do you face in keeping the classroom clean? How can you address them?

(c) Cleanliness Audit

S. No.	Is the classroom clean?	Yes/No/ any details	What can be done?
1.	Who cleans the classroom?		Get the cleaning staff to clean the classroom. Motivate the students to keep a duster in their bags and clean their desk and/or chair at the start of the day. The value of shared responsibility for common spaces may be inculcated through this. They may not depend totally on the cleaning staff.
2.	How often is the classroom cleaned?		The classroom must be cleaned at least once daily.
3.	Are there cobwebs in the room?		Cleaning staff should be asked to clear out the cobwebs. Students' help may be taken.
4.	Are some parts of the room damp or stained?		Seek help from the administration to get the seepage checked and painting jobs done.
5.	Are there any dustbins in the classroom?		Dustbins may be arranged for the classrooms and students may be encouraged to create a litter-free classroom.
6.	Is there a lot of litter in the room?		Help students prepare a roster of duties to clean up and check for litter in the room.



What problems do you face in extreme hot, cold or rainy conditions?

(d) Ambient Temperature Audit

Look for the arrangements in the classroom to maintain an optimum temperature. The options may be changed depending on the climatic conditions of your region.

S. No.	Maintaining optimum temperature in the classroom	Yes/No/ any details	What can be done?
1.	Is the room very hot in specific seasons?		
2.	Is it because of the very direction of the Sun?		<ul style="list-style-type: none"> ▸ Vines can be planted along these walls to decrease heat gain along these walls.
	Is the longer side of the room facing south, south west?		<ul style="list-style-type: none"> ▸ Winter deciduous trees may be planted in regions with extreme weather conditions, e.g. <i>Neem</i>, <i>Champa</i>, <i>Gulmohar</i>, <i>Imli</i>, <i>Semal</i>, <i>Shrish/Siras</i>. ▸ Choose the trees as per your climatic conditions. ▸ These wall surfaces can be painted in white to reflect the heat. ▸ Trees with a canopy height at a level that it casts shadow on the walls will also decrease the heat gain. ▸ If possible increase the roof projections so that the walls are shaded.

3.	Is hot air getting trapped inside the room?		Hot air tends to rise up. There have to be ventilators at the upper side of the walls to remove this hot air from the room. In schools constructed in hot and dry climatic zone, composite zone or even warm and humid zone, there should be ventilators above the lintel level to remove hot air inside the room. Explore the possibility of making such openings.
4.	Is there inadequate shade on the windows?		Provide sun-shade devices (asbestos/tarpaulin/awning, etc.) on windows.
5.	Do the rooms require any other cooling arrangement? Mention those (fans, etc.).		
6.	How many fans are working?		They may be positioned so that all children are benefited.
7.	Is the classroom very cold in certain seasons?		
8.	Is there a provision for the Sun rays coming into the room during the winters?		If not, explore the reasons. If there is a tree blocking out the Sun, you may get it trimmed. Another possibility is to hold the class out in the Sun.

Let us
Reflect

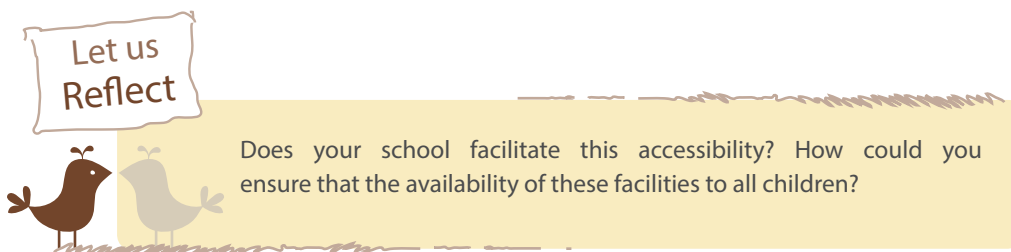


Is there any unwanted noise in your school that disturbs you and your students?

(e) Noise Audit

S. No.	Addressing unwanted noise	Yes/No/ any details	What can be done?
1.	Does your school face a problem of unwanted noise?		
2.	If yes, what are the sources of this noise? (vehicles, noise from a busy public place, etc.)		
3.	What can be done to reduce this noise level?		<ul style="list-style-type: none"> Put appropriate signages outside the school on the boundary walls (e.g. 'NO HONKING').
			<ul style="list-style-type: none"> Plant a three-layered filter belt to cut off the noise with larger trees on the outer periphery and the medium-sized shrubs in the middle and the small sized vines and climbers on the inner side.

It is important that the physical school space and its facilities (drinking water, toilets, laboratories, etc.) are accessible to all students at all times. The special needs of the students also need to be suitably catered to.



Let us find out

(f) Audit of Provisions for the Differently abled

S. No.	Infrastructural needs of Differently abled	Yes/ No/ any details	What can be done?
1.	Are any of your school students or staff differently abled?		
2.	If yes, what are their special needs for the infrastructural changes in school?		
3.	Are there provisions for hand rail at appropriate places?		
4.	Are there ramps in the school?		The gaps may be pointed out to the concerned authorities and School Management Committees (SMCs)
5.	Is the ramp made up of anti-skid materials? Is its slope appropriate for person in wheelchair to move on it?		
6.	Are there provisions for toilets for the differently-abled?		
7.	Is the school floor and furniture appropriate to their needs?		

It's the little things citizens do. That's what will make the difference. My little thing is planting trees.

—Wangari Maathai, Nobel Peace Prize Winner 2004

(g) Seating Arrangement

S. No.	Appropriate Seating Arrangement	Yes/ No/ any details	What can be done?
1.	Where do children sit in the classroom? (chairs/benches/mats/any other)		Seating needs to be comfortable with regard to appropriate posture, height and climatic conditions and at an appropriate distance from the blackboard.
2.	Is it comfortable for them in adverse (too hot/cold) climatic conditions?		If no, locally available material that is child-friendly may be used.
3.	Where do they keep their notebooks while writing?		There should be adequate working and storage space for each child.
4.	Are they able to maintain a right posture with their back straight while reading and writing?		Writing desk/board should be placed so that distance between the notebook and the eye needs to be appropriate, at least 30 cm.


To Do

- _ Ask students to think ways by which they can overcome the problems enlisted after the survey.
- _ Select the ideas on which an immediate action can be taken by the students with your help.
- _ Are there any options for the authorities to take any action? Find out.
- _ Help the children device a suitable strategy to make their grievances reach the authorities.

Let us Reflect



- _ What teaching-learning strategies were used in the above example? What were the opportunities for learning? What kind of learning has taken place?
- _ What is an audit? How is it undertaken?
- _ Did you have opportunities for assessment of the children?
- _ Did the students enjoy the audit exercise? Did it provide a hands-on experience to the children?
- _ Do you think environmental concerns were addressed? If yes, what were those?
- _ Were there any opportunities for skill formation?

(BaLA) Building as Learning Aid

BaLA is an abbreviation for 'Building as Learning Aid'. The concept of BaLA originated in Lok Jumbish in Rajasthan in 1997-98. The idea was supported by the Ministry of Human Resource Development (MHRD) to encourage the States to adopt the concept of BaLA.



Fig. 3.3 : Using BaLA in the Classroom

3.1.2 Common Spaces

Think about the other spaces in school where students spend time apart from classroom. Is it the verandah, corridors, playground, school garden, etc.? All these can be effectively used for promoting the objectives of ESD.

- Are there any corridors in your school?
- What are the different purposes that they serve?
- Who cleans those?

- Are there any occasions when the corridors are decorated? Which are those?

(a) Corridors, Verandah, Terrace

Entry to the classroom is through the corridor and the first impression of the classroom comes from the entrance. Now that your students have taken the lead in making their classroom 'Green', they can do the same for the corridors and other spaces in the school. These spaces may be reviewed by the students just as they did in their classroom. Encourage students to carry out cleanliness and space-use audit of various spaces like corridors, verandah, terrace, etc. of the school. Let them find out;



Fig. 3.4: Children doing cleanliness Audit

Activity

- Are the corridors clean?
- Are the walls clean and free from defacement and graffiti?
- Are there any sections of the wall which could be used for displays?
- Which are the spaces that are not being used optimally?
- Are the verandah and corridors used for any activities? Which are those?
- Is there a terrace?
- Has it ever been used for any activity?
- Are there any display boards in the school compound?



The students may carry out the activity in groups, prepare and present their report in the class. They may be asked to brainstorm how to use these spaces for various activities that they could organise there.

One usually finds that there are many spaces which are not being used optimally.

Some spaces are not used at all, whereas some spaces are used only for some time and for a very few typical activities only. For example, in many schools the terraces (even if those are accessible) and backyards are hardly ever used and spaces like corridors, the pockets of spaces between buildings, staircases, etc. are usually used for only movement, a bit of socialisation by the children and sometimes for play. These spaces can be very effectively used for the greening through activities to foster the overall growth of the students in all domains of development.

We must also appreciate that the school space belongs essentially to the child and needs to be accessible to him/her. Unnecessary restrictions on students' freedom for play and movement, that flows from the traditional notion of 'discipline', needs to be reviewed. Students can utilise common spaces to play traditional games like hide-and-seek '*unch-neechee*', *Posham pa*, etc.



Fig. 3.5 : Children playing *Posham-Pa*



Fig. 3.6 : A shed made from waste material in a school

If we create sites in schools which provide opportunities of individual and group learning for students to explore, discover, play, interact, talk, have a dialogue, etc. in different group sizes from being alone to being in large groups, then we increase

the probability of students getting meaningful learning experiences in schools. These sites can be created in any area of the school– be it corridor, terrace, open areas, classrooms, etc.

Let us
Reflect



Which sites can be created and used in different locations of schools and how can they stimulate growth and development of children?

(b) Sites for play and other activities

A chess board game kept locked in teachers' almirah or rooms is scarcely used and if used, it is mostly a teacher-guided activity. On the other hand, a chessboard created in the school verandah will help students use it at their own discretion. Similarly, other such games and puzzles can be painted on the corridor walls and floor, e.g. hop-scotch, abacus, calendars, fraction tiles, etc. Even writing surfaces, pre-writing aids and many more such ideas can become part of the built environment.



Fig. 3.7 : Chess board painted in the corridor

Spaces where students can sit, talk or discuss freely may be created in a variety of locations in the school, where groups of students in varying sizes can use them effectively. There can be simple built-in seat between the columns of the corridor, the small walls made along the flower beds where students can sit comfortably.

To break the monotony, alternative spaces of the school may be used for structured activities apart from the classroom. The open classrooms on terrace or any such open area may be planned for different microclimates – summer, winter, etc. Planting winter deciduous trees (*champa*, *neem*, etc. which shed their leaves in winters allowing winter Sun to warm the place and become green in summers, thus providing shade to the space underneath) near such settings will facilitate such activities.



Fig. 3.8 : *Hopscotch game in school ground*



Fig. 3.9 : *Children playing with Abacus*



Fig. 3.10 : *Children playing with Abacus*

Sustainability is about ecology, economy and equity.

—Ralph Bicknese



To Do

Plan five such activities where children can enjoy free play in the alternative spaces (corridors, terrace, any other place apart from the classroom). In your school identify the children with special needs and analyse how you will involve all and provide an inclusive environment?



Activity

1. Ask students to think about the ways to keep the classroom clean. Posters and charts having slogans on innovative ideas may be put up in the classrooms.
2. Put up a soft board/display board. Assign groups of students the responsibility of maintaining the displays—put up reports of class projects, posters, students work, quotations and news. Plan the calendar for displays—thematically reflecting special days, etc.
3. If possible, keep a few potted plants at the entrance to the class. Assign responsibilities for their care and maintenance.
4. Students may prepare attractive dustbins and dusters during the art and craft period.

(c) The School Grounds

Just as you have reviewed the classrooms and the corridors of the school building, it is also important to review the area around your school from the ESD perspective—the grounds, playing area, area with vegetation (lawn, trees, flower beds, vegetable garden, etc.).

Ask the students to make a survey of the school premises, observe the different areas and note down their observations.

1. Does the school have a separate playing area? If yes,
 - Is this an open ground?
 - Paved area?
 - Area with play equipment (swings, sea-saw, etc.)?
 - Any other?

2. Does the school have any area with plants? If yes, what is it?
 - Lawn
 - Herbal/vegetable garden
 - Any other place
3. Does it have
 - Trees
 - Flower beds
 - Vegetable/herbs patch
 - Any other?
4. What is the parking space/arrangement in the school?
5. Any other open space in the school premises? What is this space used for?
6. Is there litter on the ground?
7. Are the play equipments properly maintained?
8. Is the ground properly maintained (proper levelling, etc.)?
9. Are the plants properly maintained? Who maintains them?
10. Is there any place where water tends to collect and form stagnant pools?
11. Any other observations.

The children's observations on these and other points will help them to identify areas that need improvement. Based on the issue, they would be able to plan and take up simple projects. They may take the help of the school staff like the gardener, maintenance persons, etc.

A nation that destroys its soils destroys itself. Forests are the lungs of our land, purifying the air and giving fresh strength to our people.

—Franklin D. Roosevelt

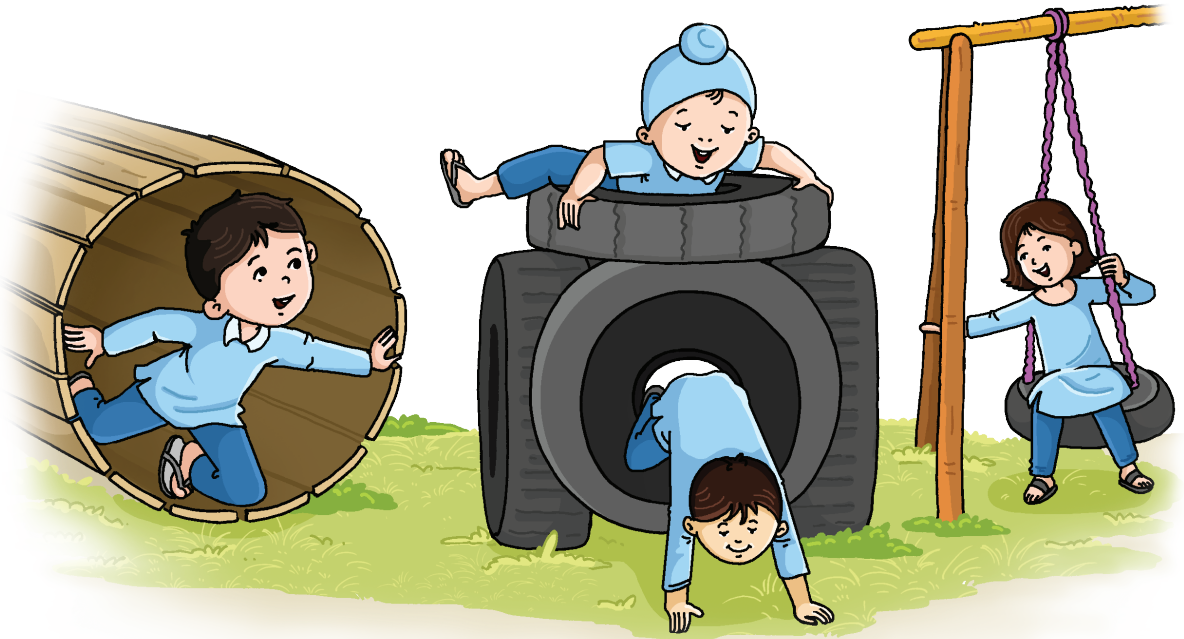


Fig. 3.11 : Some cost-effective ideas for the playground.

Check your school playground for the following:

S. No.	How child-friendly is the playground of your school?	Yes/ No
1.	Is there sufficient diversity in play settings so that all the students find sufficient choices and avenues of play without getting into conflicts or fights?	
2.	Are there segregated play zones for younger students and older students to ensure that younger students also get time and space for play without being excluded/ bullied because of age factor?	
3.	Is the play-zone a soft area (e.g. soft treated earth, fine sand) to prevent injuries from fall, except sports that require hard area like basketball, skating, etc?	

4.	Is there sufficient diversity in play spaces in terms of warm zones in winters and cool, shaded zones in summers?	
5.	Are the swings away from the branches of the trees, boundary walls or from any hard vertical surface?	
6.	Is the playground free from plants with prickles?	
7.	Is the playground free from sharp protrusions of any kind rather than bricks or stones with jagged ends?	
8.	Is there adequate drainage of water from the open areas and the paved surfaces?	
9.	Is the paving in the open areas made up of anti-skid material and are those areas regularly cleaned and maintained?	
10.	Are all the paved surfaces given adequate slope to prevent collection of water?	
11.	Are the outdoor lighting points earthed with no live wires in the vicinity of the children?	
12.	Is there a provision of first aid at appropriate multiple locations near the playground?	
13.	Is the entire playground under visual command?	

To Do



Help students analyse this information to identify actual problems and discuss and encourage them to evolve strategies to solve them.

We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect.


—Aldo Leopold

3.2 Conservation of Energy Resources

3.2.1 Conserving Water

Let us
Reflect

- _ Where does your school get water for drinking and other uses from?
- _ Does your school have a problem of shortage of water?
- _ Have you noticed any wastage of water in any part of the school? (toilets, drinking water areas, kitchen, canteen, garden, etc).
- _ Do you find lights and fans switched on in the class even when not required?
- _ How is the school waste disposed off?



This raises some pertinent questions about the conservation of the energy resources of the school. Addressing these is crucial to the greening process. There can be various ways to facilitate this.

Read the following case study.

Auditing Water Use

As a project activity, students of a Government Middle School were given a water audit activity in their school campus to understand the water consumption pattern. Students distributed themselves in groups and each team took up the responsibility of a different component of water audit. While one team of students focused on the water sources, the other concentrated on the water use. The students found that the main source of water in the school was supply water where water was pumped to an overhead storage tank. They calculated the capacity of the storage tank as 2000L. The math teacher helped the students calibrate the tank and mark the levels on the tank. The students measured the difference in level of water in the tank in one day and calculated the volume of water consumed in a day. By dividing the total volume of water consumed by the number of students and staff, they also calculated the water consumption per person per day.

After the audit, the students campaigned in teams and tried to create awareness amongst all in the school on water conservation. They approached the principal

for fixing the leaking taps, redirecting the water after hand washing for spillage and urged everyone to close the taps properly after use. They also, organised a number of activities in the school like slogan writing, poster making, role play etc. to sensitise every one in school about water conservation. They approached

the authorities and the school got cement troughs built under the water taps to save water. It was used for washing and cleaning activities. At the end of the audit, eco club students were happy to observe that there was a reduction of more than one litre per person per day.

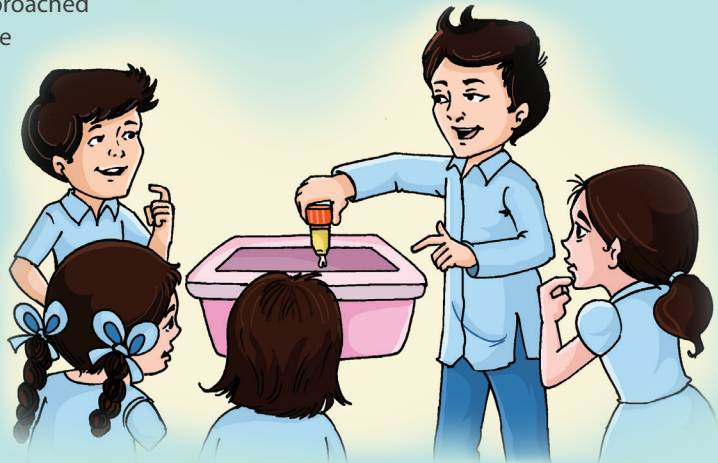


Fig. 3.12

Out of the various activities carried out by the students mark (3) before the ones that you consider can be a good opportunity for teaching-learning and (7) before that you do not consider to be so.

In this activity children:

- _ calculated the capacity of the storage tank; ()
- _ measured the level of water in the storage tanks; ()
- _ calculated per person consumption per day; ()
- _ carried out activities of role play, slogan and poster making; ()
- _ organised campaign for water conservation; ()
- _ noticed problem areas and approached the authorities for action; ()
- _ suggested ideas of water conservation; and ()
- _ measured the total quantity of water collected in troughs. ()

To Do



You will appreciate that the entire exercise was an enriching teaching-learning experience for all those who were a part of this.

Given below are some activities to conserve water in your school.

Activity 1 School Water Survey

Help students to conduct a survey daily for a week to find out more about the water supply, storage systems and water usage in the school. They may use an audit format like the one given below.

1. What is the source(s) of water? borewell/municipal supply/taps/hand-pump/other

2. Is the water stored? Where? (tanks, *matkas*, coolers)

3. What is the number of taps in the school? (including garden, kitchen, coolers, toilets, labs etc.)

4. Are they properly covered?

5. Are some of the taps left open after use?

6. How many taps are leaking?

7. How much water is wasted by the leaking taps in a month?

8. Who are the persons, other than students and teachers, using water in the school? (gardeners, cooks, sweepers, etc.?)

9. Who is the in-charge of the pump-house?

10. How many times does he/she start the pump in a day?

11. What is the amount of water bill for the last three months?

Note

- 2 The questions may be excluded or included depending on the situation.
- 2 To calculate the amount of the water wasted from a dripping tap, collect the water in a container placed below it and measure the amount per minute in a measuring cylinder or any other calibrated container. Calculate the wastage in a day/month.

After the survey, help the students to:

- compile their findings to analyse the nature of the problem. For example, were the taps dripping because they had not been closed properly, or because the washers had worn out, or due to some other reason?
- begin a campaign (once the situation is understood), so that others in the school also become aware of the problem.
- carry out group discussions, poster making, sharing the details of their survey (specifying the magnitude of the waste, causes and consequences of water loss, electricity bills for pumping, etc.) may be carried out.
- devise practical ways to improve the situation.



Fig. 3.13 : Tanks for storage of water



Fig. 3.14 : Children washing Hands

For example, for the leaking taps, students may be encouraged to contact the relevant person in-charge in the school or the Principal, and discuss the findings of the survey with them, requesting that the problem be addressed. They may write an application requesting the principal to do the needful—either change the taps or repair them, and ensure, by repeatedly checking, that the problem is rectified.

Fig. 3.15 : Drains for watering plants at a water harvesting site



If there is unavoidable wastage of water, for example, near the drinking area or washing area, efforts may be made to use this water for irrigating plants.

- 2 Divert the water through a canal, lined with clay or bricks to prevent its collapse over a period of time.
- 2 Periodic cleaning of tanks to ensure safe storage of water may be undertaken.
- 2 To Monitor to ensure that the activity is sustained.

After a month/term, students should do a survey again to find out the extent of improvement in the situation.

Activity 2 Let students find out about traditional systems to collect rain water such as village tanks, underground tanks, etc. They can collect such information from elders in the family, from books, internet and any other source. Plan ways to harvest rain water in school with the help of school authorities, local community and experts (if possible).

Activity 3 Think of the various ways in which waste water from drinking and washing area could be reused.

We all know that the school environment essentially comprises different resources out of which water, electricity, paper, soil, etc. need to be conserved in order to promote sustainability concerns. They can also be encouraged to adopt these measures in schools. They can be taken to the community through demonstration and involvement of the community members in setting up facilities and maintaining such practices. Conserving resources offers some hands on opportunities for the students to learn meaningfully as we observed from the case study mentioned above.

3.2.2 Conserving Electricity

Let students examine the electricity bills of the last twelve months of their school. They may conduct this survey in groups.

- In which month was the bill the highest?
- In which month was it the lowest?
- Find out the number of electrical gadgets in your school. List them and their numbers.
- For what duration do these remain on/functional in a day?
- Do you think some of these run when not even required?
- How can you prevent that?

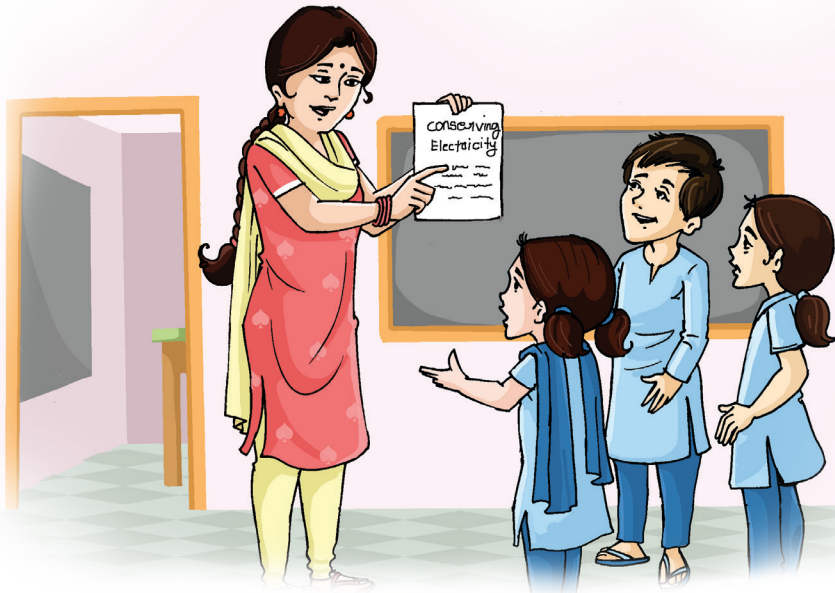


Fig. 3.16

For example, replacing high voltage bulb with low ones wherever feasible, using LEDs, de-plugging the gadgets when not in use, etc.)

- ✦ Have a discussion in the class on the issues that emerge during the course of the survey and work out the corrective measures. We need to build a culture of resource conservation in society in general and in schools in particular. This could be achieved through active involvement of children, teachers and other staff.

Think of and design some innovative projects (on the lines of the water related projects discussed above) which could include the following activities:

- **Creating Awareness:** Provide opportunities such as posters, activities in morning assembly where students can spread message for others to switch off fans and lights when not in use.



Fig. 3.17 : Awareness for saving energy through campaign in neighbourhood



To Do

- **Patrolling:** Encourage students to patrol the school during recess, free periods, etc. to check on lights, fans, etc. left on.
- **Reporting:** Sharing with the rest of the school the impact of the save-energy campaign—e.g. reduction in electricity bills.
- **Troubleshooting:** Identifying electrical appliances that are in need of repair and bringing it to the notice of the authorities.



Let us Reflect

What strategies in addition to these would you propose to adopt to address the conservation of electricity in your school?

3.2.3. Managing Garbage: Reduce-Reuse-Recycle

The practice of Reduce-Reuse-Recycle and optimal utilisation of resources was always a part of the Indian way of life. We as people have always believed in recycling and sharing resources and minimising wastage. In contemporary times, we seem to have moved away from this ethos, it is thus critical to infuse the culture of conservation into our schools and children. Here are a few examples of schools who in their own way have taken a step forward in this direction.

Everything in the universe belongs to the Lord. Therefore take only what you need, that is set aside for you. Do not take anything else, for you know to whom it belongs.

—Isa Upanishad

(A)

A 'no plastic zone' at Pinnacle School, Delhi

Pinnacle Public School launched a project called 'Parivartan' through which the school has tried to avoid the use of poly bags and encourage the use of cloth and jute bags in the school and local community. In this



Fig. 3.18 : *Students making paper bags from recycled paper.*



campaign, cloth bags made by students were distributed free of cost to residents, shopkeepers and local vendors of local area. Local residents were told to get their own cloth bag stitched by the tailors at school free of cost.

Fig. 3.19 : *Students distributing paper bags in the neighbourhood*

(B)

Today when Meenu (the teacher) went for her class she was surprised to see so many chart papers lying in one corner of the classroom. Tanya told her that these



Fig. 3.21 : *Pieces of Art from waste*

were the waste from the weekly decoration of the display boards. Meenu said that today the craft work would be

done using this waste paper only. She helped students cut beautiful patterns, craft items using this paper. All students liked the activity. She asked students to think how that waste could be used for any other activity/work. Following were some of the responses.



Fig. 3.20 : *Carry bags from waste chart paper*

Paresh	Ma'm, we can use these to cover our notebooks.
Nisha	I can use these to cut shapes for my maths activity.
Salma	These could be used to spread in shelves.
Tanya	I can use the pictures of these charts for my report.

(C)

Rajesh told all his students to cover their copies with English newspapers. He uses these covers to teach English language to the students. He asks the students to find out nouns, pronouns, verbs, adjectives and sometimes asks them to find out the difficult words and search their meanings in the dictionary. This way, covers of the copies become learning material for the students. After usage, the old cover is carefully kept with other old newspapers for the kabadiwala.

- _ What are the three important ways to address the waste problem as discussed in A, B and C case studies? Are these indicative of Reduce-Reuse-Recycle approach? If yes, then what steps are being taken in your school to adopt these practices for addressing the waste problem?
- _ Do you think that for conservation of resources such as water, electricity etc. the solution could be Reduce-Reuse-Recycle? If yes, how?
- _ Design some projects where students get opportunities to innovate and practice different ways for Reduce-Reuse-Recycle of energy resources.

Let us
Reflect



Some of the following activities may be taken up.

Activity 1 School Garbage Survey

Groups of students may inspect different areas of the school (classrooms, common spaces, school grounds, canteen, etc.) everyday for one week.



Fig. 3.22 : Students segregating waste



Fig. 3.23 : Waste segregation

Observe and list the types of garbage/litter they find, the quantity and also where it was found. Paper and plastic wrappers may be counted by number of sheets or pieces. Wet waste may be weighed.

Activity 2 Maintaining Compost Pit

Involve students in creating and maintaining compost pit. The organic waste from the school kitchen and the dry leaves and other wastes from the school garden can be used to make compost from the compost pit in the school, which can then be used to fertilise the trees and plants.

Fig. 3.24 :Vermi Composting in Different Schools



(a)



(b)



(c)

Activity 3

The students can take up a campaign to cut down on paper (stationery) waste through several activities. Take up a campaign to create awareness about waste generated by a “throwaway” culture and convincing others to prevent such waste. (It could also be for avoiding water, and food wastage etc.)

Activity 4

Students may be encouraged to seek their participation in:

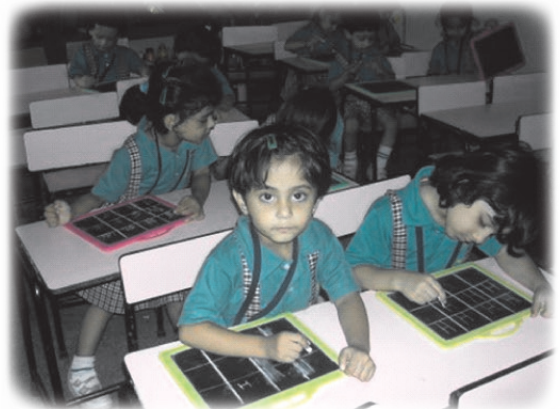


Fig. 3.25

- Collecting waste paper and reusing what is reusable (for crafts, papier mache, making rough books, etc.)
- Encouraging use of both sides of paper.
- Discouraging wastage and casual use of paper, pencils, etc.
- Proper use of notebooks and not tearing out pages.

- Discouraging use of throw away pens and encouraging use of refillable items.
- Using slates for revision.
- Keeping textbooks in a good condition, collecting and

Fig. 3.26 : Using slates in place of paper



encouraging younger students to use those.

- Making rough pads with blank sheets from old notebooks
- Collecting used paper, old notebooks, calendars, diaries and sell these to the *kabadiwalla*.



Fig. 3.27

Let us Reflect



- Which out of these do you find the best to be practised and why?
- Add some more strategies to those listed above.
- Classify these into Reduce-Reuse and Recycle.
- Design some projects that are based on the principle of Reduce-Reuse and Recycle.

3.2.4 Plantation in School

Learning about plantation is essentially a part of the curriculum but it should not be limited to bookish learning. Green and pleasant natural environment of the school not only provides opportunities to connect them with nature, enhances their potential of learning by allowing them to explore wide range of activities leading to experiential learning but also fosters a sense of emotional well-being in children.

The trees and vegetation planted within the school offer a variety of resources like leaves, flowers, twigs, seeds, plants, etc. for a host of curricular concepts and also creative play. The trees with sturdy, low and horizontal branches are nearly liked by all the students as a space to sit and chat. Boulders, or even the tree trunk (or a pipe) invites students to sit. Seats made under the shade of a tree can be another option.

Let us Reflect



- _ How do you think the plantation activities contribute to school environment apart from making it green, pleasant, i.e. for a better ambience?
- _ Do you think the plantation needs to be carried out as per the local climatic conditions?
- _ Who do you think students need to be involved in this activity of the school?
- _ What kind of learning opportunities can be provided to students through the school's natural environment?



Fig. 3.28 : Project on trees in progress

can involve students where you may provide good learning opportunities to them that they would enjoy. Some of the ideas are given below. You may choose as per the curricular requirements and developmental level of students.

Activity



1. Divide the students in groups and ask them to find out the following.
 - How much space do you have in your school premises for planting trees and other plants?

Help students to take up simple action projects to keep the school environment. These activities do not require extra resources. If properly planned and facilitated, every class can take up selected activities so that different aspects of the school environment are taken up at the same time leading to the overall whole school improvement. There are many ways in which you


- ✦ How many plants have been planted in your school in the past two years?
 - ✦ How many of them have survived? If all of them did not survive find out the reason?
 - ✦ Are the students involved in the plantation and maintaining greenery in the school?
2. Design a project around a tree. What all understandings can be communicated through a tree? Enlist the curricular concepts that can be addressed.
- 
3. Let students prepare a layout of the school and mark and name the areas that have trees and vegetation? Students can conduct a survey to find out which areas have a better a scope for plantation.
 4. Let students count the number of trees and classify them based on their size, shape, flowering pattern and their use for students to play, climb, sitting in shade, etc.? If possible help them find out their names?
 5. Design some activities/projects where students use leaves, flowers, barks of different textures, colours, fragrances, sizes and shapes to transact various curricular concepts in order to provide them visual, sensory and hands on stimulation to children.
 6. In case the school has a garden or some planted area, think of how students can get involved in looking after it. Along with the gardener you can plan weekly or monthly duties for each class. According to the season and the annual schedule students can help with preparing the soil, preparing and maintaining a compost pit to supply organic manure, sowing and planting saplings, regular watering, weeding, upkeep of the flower and vegetable beds, and finally the cutting/pruning the plants.

Fig. 3.29 : Project on trees

7. In case there are big trees, each class/house/student can adopt a plant, and care for it through the year. In case the school does not have suitable outdoor space for planting, encourage students to think of other ways of 'greening' – e.g. a rooftop garden; growing plants in earthen pots.

'My plant in my school' drive was initiated in Government Girls Senior Secondary School No. 1, Tilak Nagar. The students were encouraged to sow at least one plant in the school and take care of it. Soon the lawns of the school were full of plants. The students watered them even before the prayer started. Since there was a shortage of water supply in school, the students brought water from their home in a poly bag and watered their plant as the first activity in school.



Fig. 3.30

8. Is there any vacant space in the neighbourhood of the school like a common plot? If possible, with the necessary permission, carry out some plantation in that place. Students will also have to think of ways to protect the saplings by putting guards, thorn guards etc.
8. How many plants do you have in your house? Can you name all of them? Try to identify at least twenty plants growing in your school or near your house.
9. Ask students to list the various medicinal plants. They may consult the elders at home or the local gardener or any other

sources. Which of these plants can be grown in your school? If feasible, develop a medicinal garden with the help of children.



Fig. 3.31 : *Herbal Garden in School*

- 10.** Does a vegetable garden or medicinal garden exist in your school? If no, these may be created and maintained with the help of students and support staff. Do you think this would help students in learning? How is it related to their curriculum?

In Mysore district H.D. Kote, Hunsur Taluks GHPS, N.N. Halli, Bovi colony and GHPS, Yelehundi children, with their parents' support, who are farmers, grow vegetables and greens in the schools that are used in preparing nutritious Mid Day Meals.



Fig. 3.32 : *Vegetable Garden in School*

They have adopted sprinkler water supply and rain harvesting systems with the help of local community in schools in the taluks. The community also helped to prepare slabs and benches out of locally available materials and students enjoy eating under the shady trees in the school.

11. Identify the sites that can invite birds, bees and insects. Create those spaces.

Settings for these small friends can easily be created in the school by simple ways. If simple provisions for food and water are created in the school spaces, in the form of trees that bear fruits, flowers that attract butterflies, or making simple structures for bird and animal feed like a clay dish, or a tyre cut into half, then the probability of the visits by these creatures



Fig. 3.33 : Bird shelters in Govt. Sr. Sec. School, Baprola

within the school will increase. These settings should be in relatively quiet corners of the school but within the visual accessibility of the children. Bird baths provided at different corners of the school will also attract them.

Let us
Reflect



How do you think it will help students to enrich their learning?

Such activities also attempt to widen the meaning of the term “Greening”, beyond planting trees, to cultivation of a variety of gardens/plots, growing grass, and even facilitating natural regeneration of vegetation and even inviting birds. Through these projects students will not only understand the vital importance of creating and maintaining a green cover but at the same time hands on experience of different natural and social phenomena that they only read in the textbooks will enable them attain their deeper understanding besides getting exposed to various values of working together to be self reliant etc.



Fig. 3.34

At the same time these will also help students acquire appropriate skills and address the environmental concerns as mentioned here.

Environmental Concerns

Health and Sanitation, Protection and Conservation of Natural Environment and Culture and Heritage, Safety, Security and Hygiene, Social Justice and Equality.

Skills of Learning

Questioning, Observing, Recording, Compiling and Organising, Analysing, Evaluating, Critical thinking, Working together, Negotiating, Decision-making, Empathy-building, Clarifying Values, Coping Skills, Logical Thinking, Caring and Sharing,

To Do



Given below are a few projects. Identify the curricular area, environmental skills and concerns that they cater to and write them in the spaces provided as illustrated in than example given below.

Posters with encouraging messages to keep school clean and Green.

- | | |
|--|--|
| <ul style="list-style-type: none"> ∨ Curricular area(s) | <p>Language, Environments Studies, Science, Social Studies, Art and Craft.</p> |
| <ul style="list-style-type: none"> ∨ Environmental concern(s) | <p>Preservation and conservation of natural environment.</p> |
| <ul style="list-style-type: none"> ∨ Skills | <p>Creativity, sensitivity for the environment, working together.</p> |

Working with the school management and staff to initiate and maintain a system of waste collection and disposal.

- | | |
|--|--|
| <ul style="list-style-type: none"> ∨ Curricular area(s) | <p>_____</p> <p>_____</p> |
| <ul style="list-style-type: none"> ∨ Skills | <p>Discussion, taking leadership, decision-making, working in a group, cooperation</p> |
| <ul style="list-style-type: none"> ∨ Environmental concerns | <p>_____</p> <p>_____</p> |

A campaign to keep the school grounds litter free.

- | | |
|--|--|
| <ul style="list-style-type: none"> ∨ Curricular area(s) | <p>_____</p> <p>_____</p> |
| <ul style="list-style-type: none"> ∨ Skills | <p>Working together, taking leadership, decision making, working in a group,</p> |

Environmental concerns

Preparing and maintaining compost pit for wet waste (especially leftover food, dried leaves, etc.)

Curricular area(s)

Skills

Environmental concerns

If there are stagnant water pools, working with school staff to fill them up and to plan how to avoid this.

Curricular area(s)

Skills

Environmental concerns(s)

Identifying sites where water drips from a tap collect the water at some points, e.g. drinking water area, canteen area, then create a small channel to divert it and find a meaningful use for it.

- Curricular area(s) _____

- Skills _____

- Environmental concerns _____

Making signage, naming and giving other interesting information on trees in the school campus.

- Curricular area(s) _____

- Skills _____

- Environmental concerns _____

Putting up simple nest boxes, feeding trays and water containers to attract birds.

• Curricular area(s)

• Skills

• Environmental concerns

Initiating a plantation programme, planting trees, shrubs, flowering plants, medicinal plants or vegetables, or starting a plant nursery.

• Curricular area(s)

• Skills

• Environmental concerns

If your school ground does not have a compound wall, start a protective Green boundary by planting a hedge using plants that animals are not likely to eat (e.g. local cactus, *mehendi*, etc.).

• Curricular area(s)

- Skills

- Environmental concerns

Prepare the school building layout. Map different areas (playground, toilets, drinking water points, plantation, etc.). Is there any scope for increasing the Green cover? How can this be done?

- Curricular area(s)

- Skills

- Environmental concerns

These are only a few ideas. You may add to this list many more that are relevant to the local context. These activities for improvement programme will be possible due to collaborative efforts of all students as well as school staff and at times that of parents as well.

The activities provide rich teaching-learning opportunities. Students will be greatly enriched by the hands-on experiences that such projects provide.

To Do



Enlist some other ways to use the physical environment as a teaching-learning resource for ESD.

3.3 ESD through Greening of Common School Activities

The organisation of the timetable and overall schedule of the school provides that most of the activities and interactions between students during the school day are conducted with a particular set of students and within a set time and space. For example, students of Class VI will spend almost all their time with one other in the classroom, and even outside, in the sports period or recess time. Beyond these also there are occasions outside the classroom where the larger student body gets together and most of us are oblivious to the enormous opportunities of ESD that these offer. These ‘whole school’ occasions are a very good time and place to engage students in activities that bring them to work together and create a sense of shared participation and responsibilities.

Let us Reflect



- _ On what occasions does the entire school come together?
- _ What usually happens when the school comes together?
- _ Can you think of ways to engage the maximum number of teachers on such occasions?

3.3.1 School Assembly

You will appreciate that a School Assembly is the most important common activity of a school and is a daily event. It is an occasion when all the students and teachers are present and where all issues of common concern are raised.

To Do



- _ How is morning assembly organised in your school?
- _ Do you plan the activities in advance?
- _ What objectives do you try to achieve by organising morning assembly?
- _ How can we use morning assembly for developing a sustainable environment in the school?

Please read the following and express your views on the questions given below.

A city school decided to celebrate 'water week' from 19-24 March. The objective was to raise awareness about the significance of water and to sensitise the students to the need for water conservation in present times. As part of the week-long celebrations, a special assembly was organised by the students and teachers of Class VIII on one of the days. Parents and grandparents of the students had also been invited on the occasion.

The assembly began with the Principal orienting the students about the significance of the 'water day' that is observed on 22 March every year. It was followed by a student reading out a collection of newspaper clippings that reflected the growing scarcity of water, depleting water table and the inconvenient and ugly situations that this could lead to. Some of the news items pertained to illegal harnessing of water by people.

The next item was a short play by students that depicted the future scenario if we continued to waste water the way we do.

A few grandparents were invited to narrate their experiences of the water table. They recounted how in the 70s they only had to dig only up to small depths to access water and now one has to dig deep down in the same city to reach water. Some of the parents came forward to describe their ways of collecting and re-using water in their households. One of the mothers explained how she had arranged a short pipe from the kitchen basin to the garden outside water the plant. On being queried about the adverse effects of water containing detergents, on plants, she informed that it was not a problem as she was using ash to wash the utensils. Students were surprised when she added that ash was quite hygienic for washing both hands and utensils.

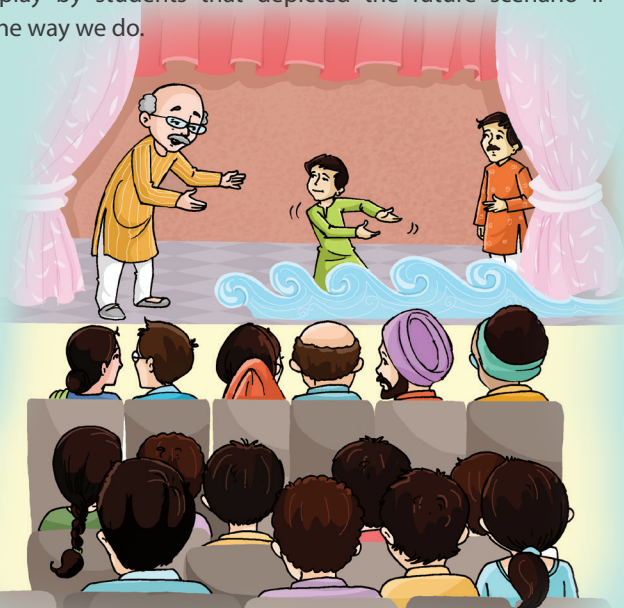


Fig. 3.35

The gardener of the school came up on the dais next to share some of the innovative ways he used to conserve water in the garden. He explained that some plants need slow and continuous supply of water. Using a strong jet of water will only lead to a lot of water wastage. He demonstrated watering plants with some defective pots. He said he had obtained these leaking earthen pots from the local potter and buried them in shallow pits at the base of the plants. He then filled the pots with water and closed the lid. The water from the pot kept seeping through the soil to the plant thus fulfilling its need. He went on to explain the 'drip irrigation' method in great detail.

A group of people from the nearby village who had successfully revived a pond-like local water body was invited on the stage next. They described how it all began with a few villagers noticing two trees in the local park that needed urgent attention because they were in the danger of being uprooted as their roots had begun to show. They approached the government authority that was responsible for the maintenance of the park and obtained the permission to cover up the roots of the trees from the nearby land. It was while they were doing this work that they noticed the dried up water body that stretched between the trees. They began to mobilise support for its revival. Initially water from the nearby hand pump was used to fill up the water body. They then drew up a plan to manage the nearby catchment areas. The body was successfully revived and since its revival at least 26 species of birds have also been spotted in the area. They invited the school students to visit the place and the Principal promised to arrange that. All students were also excited.

The assembly ended with a collective oath by all the students that they would make personal efforts to conserve water in their school, their homes and around their neighbourhood.

Let us Reflect



- _ What new information do you think the students got?
- _ What teaching-learning strategies were used?
- _ What all teaching-learning material was made use of?
- _ Who were the resource persons?
- _ What concerns were addressed in the above case? Is it the preservation and conservation of natural resources?
- _ How is the occasion of assembly utilised in your school?

Many schools often use the assembly innovatively. Here is an example:

The Zigyasa Manch

At a school in Najafgarh, New Delhi, ten minutes were devoted everyday in the assembly to address the queries of children. Students could drop their questions in a box without giving their names. They were free to ask questions related to any topic, any subject. Any teacher could volunteer to answer the questions. The students asked a variety of questions like: 'How do we know that God exists?' 'Why is the sky blue?', 'Why do we say *Hara Samundar*, i.e. green sea whereas we paint water in blue colour?'; 'Why do we cry when we cut onions?'; etc. (If some of the questions the teachers could not answer spontaneously, then they took some time to discuss and those were answered later, however, none of the students were discouraged ever.)

It was a popular activity for the entire school. Do you think it can help promote/develop:

- the habit of exploring the environment;
- skill of questioning;
- confidence and communication skills among students;
- curiosity among children;
- skill of observation and sensitivity to the world around them;
- awareness in the students regarding various social and environmental issues; and
- healthy rapport with students?

- _ How do you motivate your students to ask questions?
- _ What opportunities does your school create for the students to ask questions and seek answers to them?
- _ Do you have such activities in your school? If yes, how often are they conducted?
- _ Who is given this responsibility? (Is it the responsibility of one teacher or all teachers?)

Let us
Reflect



How far do you think such activities help in accomplishing the objectives of ESD?

3.3.2 Celebrating Occasions/Festivals

It is customary for schools to observe special days of importance and think up their own ways of going about it. For instance, the 'Bal Sansad' project in which groups of students go out to the community to monitor and test the quality of water, can be carried out during the 'water week'. Water surveys and audits are other meaningful activities that students can engage in, as part of 'water week' celebrations.

To Do



Think of some other days that could be celebrated in a similar way. Some could be World Environment Day (5 June), Earth Day (22 April), World Wetlands Day (2 February), *Vanmahotsava* (July and August are the best months to celebrate this as plants sown in this season get rooted easily due to the rainfall and high level of humidity, you may plan as per the climate of your area/region) and so on.

The list can be decided at the school level as per the local context. Emphasis also needs to be given to traditional and local festivals so as to endorse the indigenous practices that promote social cohesion and harmony with nature. Let the students plan by themselves (under the supervision of teachers) the celebration activities keeping in mind the following aspects.

- Why is a particular day celebrated? (the historical significance)
- How can we plan the celebration making judicious use of resources while maintaining its socio-cultural significance with joy and fervour?
- How do we involve the community in the celebrations?

3.4 Creating a Safe School Environment

(A) Addressing Emotional Needs

It is difficult to accomplish the objectives of ESD without addressing the social and emotional needs of students regarding their safety and security of all children. There are certain issues that need to be addressed through the process of dialogue on a shared platform. These are often found related to bullying, emotional needs at puberty, drug abuse, parental pressure, corporal punishment, etc. Look at the cases below.

1. Rama in her class always told students to brush their teeth, bathe, comb their hair and dress up neatly everyday. At times, she related the habits of personal hygiene with the lessons of their textbook. However, still the problem remained as ever. On being asked by the Principal she said that students do not listen to her and she recommended taking strict action against them.
2. Sudha was very upset today. When her father visited the school, the teacher complained about her unhygienic manners. She said her clothes are always dirty and she gives an obnoxious smell. She told her father to monitor that Sudha bathes everyday. She showed her dirty nails to the whole class and all students laughed at her. She informed that a group of some good students will observe other students everyday and the defaulters would be punished. Her father was furious and immediately slapped Sudha in front of all children. At home also Sudha was rebuked by him. Even her mother was also reprimanded by the father. Sudha is too scared to go to school now.
3. Najma teaches Class V. She observed that Raghu in her class is always dressed shabbily. Neither his nails, hair are ever trimmed nor did he seem to bathe regularly. No one in the class ever wanted to sit beside him. One day, she called him and asked about his place of stay, about his family members, his routine in the morning and the role of other members, etc. There was a warmth in her behaviour and therefore, Raghu felt no hesitation in talking about himself. During the informal talk she found that he was staying in a one room house with four brothers and sisters. His parents were daily wagers and worked hard to keep the family going. They had to bring water from a common tap in the community everyday to meet the water requirements of the family. Najma called her parents one day to the school and she discussed the problem with them. She suggested that if there is not enough time in the morning then the parents could facilitate his bath in the evening or night. She trimmed Raghu's nails herself and discussed



Fig. 3.36 : *Teacher trimming the nails of her students*

the importance of cleaning the uniform, shoes, etc. with his parents. After a few days, visible changes were there and Raghu also was confident to mix with other students and improved in studies as well.

The education should bring about holistic development of a child, nurturing his/her talent, potential and abilities to the fullest extent in a child-friendly school environment free from fear, trauma and anxiety. (RTE Act, 2009)

Let us Reflect



- Which out of these do you think is an appropriate way to address the issue?
- Why do you think so?
- Do you think preaching or penalisation helps to deal with various problems? Does your class have any such socio-emotional problems? How would you address them?

(B) Emergency Preparedness and Disaster Management

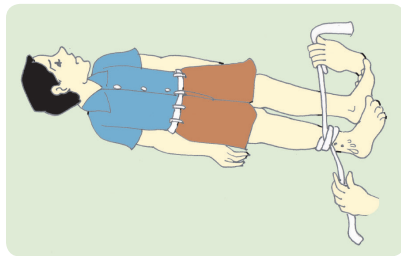
- What types of emergencies can occur during school hours?
- Does your school undertake any activity to prepare students tackle emergencies? If yes, which are such activities?
- How do you think those can be helpful to the children?

Here are a few situations that you may encounter during any regular school day.

- Sanjna while gulping down food chokes and starts gasping for breath.

- Farhan was bitten by a snake while playing hide and seek during the games period.
- Tsering falls down from a swing and gets a hand injury with profuse bleeding.
- Mandeep suffers a heat stroke during the school assembly.

First Aid



1. Snake bite



2. Drowning in water

3. Choking of throat

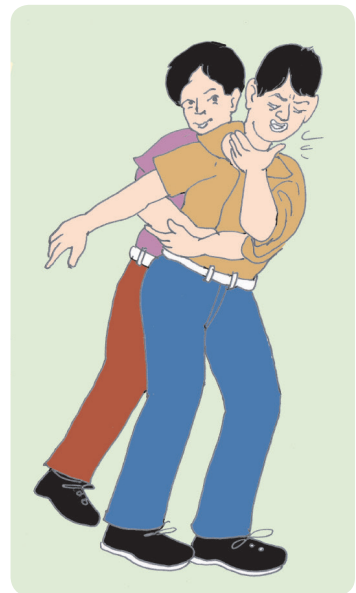


Fig. 3.37 : A poster depicting some emergency situations and ways to handle them.

How prepared do you think you are to handle these situations? Does your school provide you with any input that would enable you and the students to deal with such emergencies?


- _ Help students to think of and enlist the various emergency situations during school hours. Discuss how can these be appropriately dealt with?
- _ Students may prepare charts/posters depicting ways to handle such emergencies. These may be displayed at prominent places in school.
- _ Ask students to find out the contact numbers of various emergency services. For example, police station, fire brigade office, local hospital, ambulance and display this information in classroom/corridors of your school.
- _ Help students assemble a first-aid kit.

To Do



Let us
Reflect

- What types of disaster situations are more likely to happen in your locality?
- Do you have any history of disasters in your area?
- How did people react in that situation?



Disasters like earthquakes, fire, floods, tsunami, etc. come without warning. They cause damage to the life and property. The damage is more in schools if it happens during school hours. It is therefore essential that every school should take necessary measures to enhance disaster preparedness of its students and the staff. Such a message may also reach the community through students to make them also well-prepared to handle emergencies during a disaster.

In order to introduce the concept of disasters and emergency preparedness, Rachna (the teacher) thought that a ‘film’ would be an appropriate strategy.

Before showing the film, she asked the students about the different kinds of disasters that could strike us.

Ramesh: There was an earthquake last month.

Richa: My native village was struck by sudden floods last year.

Vikas: There was a cyclone in my uncle’s place in Odisha two months back.

Salima: My neighbour’s house was burnt in a fire couple of months back.

Simran: Ma’am, there was a huge disaster in Japan in 2011. I saw it on the TV. Huge waves brought water and destroyed houses and factories and killed lots of people.

Rachna (the teacher): Ok, what are these huge waves that bring sea or ocean water called?

Arya: I know that. It’s called tsunami.

(The teacher can lead the discussion towards difference between man-made disasters like fire and natural - disasters like tsunami and cyclone. However, it is pertinent to point out that some of the natural disasters like flood is, in many cases, a result of human doing).

Rachna then showed a film on the 2004 tsunami to the children. The visuals of the tsunami left a huge impact on the students and they had lots of things to ask. So, after the film, there was a round of discussion on why tsunamis happen and the kind of destruction they cause. Rachna explained to the students how earthquakes, floods and cyclones are caused. She

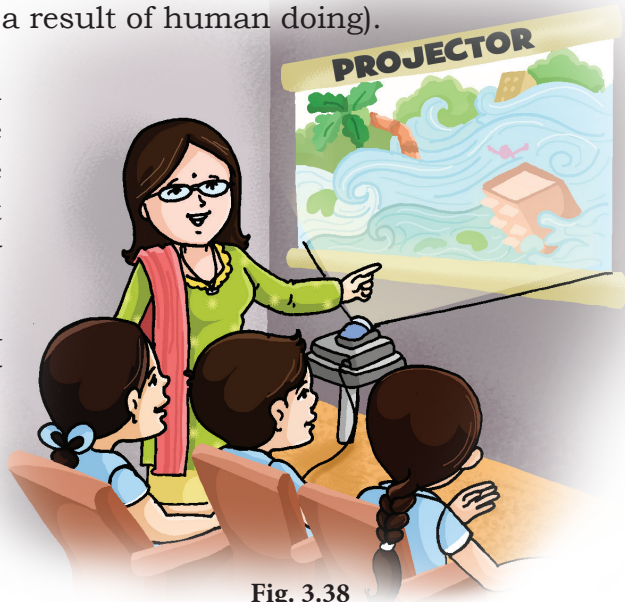


Fig. 3.38

emphasised the fact that disasters do not just damage life and property but also leave behind deep psychological scars for a long time to come.

To Do



Think and devise another strategy to acquaint your students with disasters that the region or location of their school is prone to.

Rachna divided the students into four different groups and gave each group an assignment to prepare a project report on floods, tsunami, cyclone and earthquake (this could be a summer vacation or winter vacation assignment). The students had to address the following themes in their project work:

- What are these disasters?

- How are they caused?
- Why do they happen?
- Where do they take place most often?
- Name major areas affected by these disasters in the past few years. Name major incidents of such disasters. Paste photos.
- Who get affected by these disasters?
- How life changes during and after these disasters?

Let us Reflect



- _ What teaching-learning strategies were used in the above case? Were these strategies away from the rote learning process?
- _ What opportunities did you have for assessment of the children? (when they present their project reports).
- _ Did the students enjoy the film? Is film as a medium of learning an effective tool? (visuals leave behind more impact compared to text).
- _ Do you think environmental concerns were addressed? If yes, what were those?
- _ Were there any opportunities for skill formation?

To Do



Design projects related to concepts of the subject that you teach that are related to disaster awareness and preparedness. You may plan together with your colleagues and help children carry these out.

In the next class:

Rachna: Yesterday we were talking about disasters. Today we will continue with the same topic. Now tell me is it possible to minimise the loss during disasters? If yes, how can that be done?

Samir: Yes ma'am, it is possible to minimise the loss of life and property during such disasters. For that we need to take certain measures before hand.

Rachna: Ok, what measures?

Samir: Ma'am, we should always have a first-aid kit handy at all points of time.

Rachna: Very good point. How will the first-aid kit be helpful in this situation?

Sheena: Ma'am, people panic in such situations and start running without seeing anything or anybody. It is very likely that people will get injured in such a scenario. If we have a first-aid kit ready, small injuries can be treated right away. In any case the hospitals may already be full with the patients who are direct victims of such disasters.



Fig. 3.39 : *Demonstration to use a fire extinguisher in school*

Rachna: Very well explained. So the first thing is not to panic and try to make yourself safe. Then go ahead and help other victims by bringing them to safe places and if required giving them first aid. Also you have to be prepared to take quick decisions.

Rachna: Tell me now, if there is a fire while you are in school, what will you do?

Ravi: We should try to douse the fire.

Rachna: Ok. But how will you do that?

Seema: We will carry water in buckets from the toilet and put it on the fire.

Samir: No, no. We should call the fire brigade by calling 101.

Pinky: But fire brigade will take time to come. Till then we cannot just sit idle and see the fire spreading.

Peter: We need to use fire extinguishers to douse the flame. My father has a small one in his car.

Rachna: Yes, fire extinguishers are the best option to douse the flame and stop it from spreading. But before that all of you need to run away from the fire and protect yourself and your clothes. Then look for the fire extinguisher and use it. Now how many of you know how to use an extinguisher?

There was a pin drop silence in the class. All the students nodded their head in a gesture of 'No'.

Rachna: Ok then today we will learn how to use a fire extinguisher. I have a small extinguisher here and I will demonstrate to you how to use it.

Did You Know



- We can even use sand to extinguish the fire.
- The fire can be extinguished if we stop the contact of the substance on fire with air/oxygen.
- In case, a person has caught fire, it is good to wrap him/her with a blanket and make him/her roll in the ground.
- A liquid/fuel in ground in a container on fire, if covered with a lid can extinguish the fire.

Rachna then demonstrated to the students the proper usage of the fire extinguisher.

Rachna: Now tell me, do we have fire extinguishers in our school?

Some nodded in a yes, while others were not sure.

Rachna then told the students that they will conduct an audit exercise to find out the following:

- Are there fire extinguishers in the school?
- How many altogether?
- Do each and every floor and every corridor of the school building have an extinguisher?
- Where are they kept?
- Can the students reach them?

- Is there information displayed to let the students know where the extinguishers are kept?
- Are they in working condition?



Fig. 3.40 (a)



Fig. 3.40 (b)

She divided the class into four groups and separately accompanied each group to each of the four wings of the school to find out answers to the above questions.

After all the four groups had collected the information, Rachna asked them to pool together their information and present the report of the audit exercise.

Samir presented the following report on behalf of the class:



Fig. 3.40 (c)

Our school does have fire extinguishers. There are 16 extinguishers in the whole school, four for each wing. These 16 cover each and every floor and corridor of the school building. The extinguishers are kept on hooks

put on the walls of the corridors. Out of the 16 places, in 12, we found that students could easily reach the extinguishers. The remaining four could only be reached by slightly taller children. Except for one place in the junior wing, all the rest of the wings had information displayed to let the students know where to reach for the extinguisher in case of a fire. Out of the 16 extinguishers, two were not functioning properly.

Rachna: Very good. Now I will present this report to the Principal on your behalf so that the problems can be pointed out and taken care of well in time.

Let us Reflect



- _ What teaching-learning strategies were used in the above example? What were the opportunities for learning? What kind of learning has taken place?
- _ Did you have opportunities for assessment of the children?
- _ Did the students enjoy the audit exercise? Did it provide a hands-on experience to the children?
- _ Do you think environmental concerns were addressed? If yes, what were those?
- _ Were there any opportunities for skill development? Which were those?

To Do



- _ Let the students collect some experiences of their own, family and people in the neighbourhood who were either caught in or have witnessed any incident related to fire accident. Let them narrate the collected information in class and discuss the strategies to overcome such accidents.
- _ Let students collect the experiences from the elders in surroundings about the disasters they experienced and strategies that could be used to prevent them. They may prepare a report and present it in the classroom.
- _ Think of some concepts around which you can plan an audit exercise. Some of the following points may be helpful. You may change/add to these depending upon your context.

3.4.1. Audit for Infrastructural Safety

School Infrastructure	Yes/ No/any details	What can be done?
1. Is the school building an RCC structure or a temporary one?		
2. Is the roof of the school building thatched or tiled?		
3. Are the overhangs from the school building safely secured in order to mitigate the effect of strong cyclonic winds?		Retrofitting work should be undertaken on priority basis.
4. Is the school located in a low lying area or an area close to the sea which could be prone to flooding?		
5. Is the building wind/ water resistant?		
6. Can the school building serve as an emergency shelter?		
7. Have any specific warning signals been worked out for an emergency situation, for e.g. signals for strong cyclonic winds or flooding.		
8. Is there any evacuation plan? In what sequence will students evacuate the classroom and even things like which classroom will evacuate first? Where will the students assemble after evacuation?		Responsibilities should be delegated to different staff members so that the evacuation operation can proceed smoothly.

		<ul style="list-style-type: none"> Train students to evacuate the building in minimum time in case of an earthquake. Also train them to take strategic positions to save themselves in case they get trapped inside the building.
		<ul style="list-style-type: none"> Mock drills for different kinds of disasters must be conducted often so that all members of the school community know what exactly is to be done in case of an emergency (The overall drill for different disasters would differ on some actions, e.g. an earthquake drill would be different from a fire drill).
9. Has an evacuation route been worked out?		Necessary modifications like double doors in rooms, double staircase and proper exit points should be made
10. Have signals been worked out and marked on the school walls to indicate evacuation routes?		
11. Is the staff trained in basic first aid?		<ul style="list-style-type: none"> Schools must have trained medical personnel on the campus. or the teachers may be given training for first aid.

		All emergency numbers - Police, Fire Department, Ambulance, etc. should be prominently displayed at different places in the school. An emergency evacuation plan must be ready for any disaster.
12. Who takes roll call after evacuation to ensure safety of all the children?		
13. In case a child is missing, who needs to be immediately informed about the same?		

Schools are vulnerable to disasters such as earthquakes, floods, cyclone or fire. The school management should see that the school building is hazard resistant. School buildings if properly designed can not only prevent the loss of precious lives, but can also serve as useful shelters for the community in emergency situations.

Use the following points in your interaction with the students

- What would you do if you are trapped in fire?
- What will you do if you see somebody has an accident with fire?
- Display the information for preventing fire accidents and various types of burns such as from fire, hot water, steam, etc. on the walls of the school.
- Enlist the items from the first aid-kit that can be used to treat burns.
- Prepare the kit and keep it in the classroom/school.
- Conduct mock exercises for preventing fire accidents.

3.5 Greening through the Mid Day Meal Programme in School

Read the following news except and reflect on the subsequent questions.

Midday mealtime right for teaching green behaviour

(Times of India, 17 August, 2014)

NEW DELHI: The one hour given to Mid Day Meals (MDM) in schools is an opportunity for discussing a variety of issues related to sustainable development. The MDM scheme, introduced mainly to encourage kids to enroll and remain in school can be used as teaching aid, argue the authors of a recently-compiled manual on education for sustainable development for elementary schools published by National Council of Educational Research and Training (NCERT) (TNN/Aug 17, 2014, 11.49 AM IST).

Let us
Reflect



- _ Do you agree with the title of the news item - "Midday meal time right for teaching green behaviour"?
- _ Is MDM just an eating activity or is there more to it?
- _ Can MDM be an opportunity to teach green behaviour in schools? How?

It is 11.00 AM. Rani and her classmates are desperately waiting for the lunch break. They all are watching out as its time to enjoy the Mid Day Meal being cooked in the school. The irresistible aroma reaches their nose and Ahmed whispers "today it is my favourite *Chole Pur*".

Nina says "I think it would be *Khichri* as per the weekly menu displayed".

Ramesh: No matter what it is, I am too hungry to eat anything today. No meal was cooked in my house last night."

Ahmed: "Why? What happened?"

Ramesh: "You know my father is ill and all money is going for his treatment. Moreover, the bad harvest this year also did not yield us much money."

Sakshi (the teacher): "Yes, Ramesh. May I know what is the matter being discussed?"

Ramesh: No answer

Sakshi: By the way, how is your father?

Ramesh: Ma'am, he is improving.

Ravi: Ma'am what is being cooked in Mid Day Meal today?

Sakshi: "It's a surprise for you. I tasted and it was yummy. I am sure you all will also like it. If that is so then the Principal agreed to include that in the weekly menu."

Rani: Ma'm I don't see any smoke from the kitchen. Is the food being cooked or not?

Sakshi: Oh, our kitchen has a smokeless *chullah* now. Tomorrow I will take you all to watch the cooking process of the Mid Day Meal.

The bell rings and all students rush out. Sakshi reminds the students to wash their hands before taking the meals while she walks out talking to Ramesh.

Students form a queue at the water taps to wash their hands and then sit in circles in different groups on the mats. Today mothers of Kanu and Raziya had come to school to assist the cook-cum-helpers and Dhokla has been cooked under the supervision of Kanu's mother. Everybody in her neighbourhood is fond of her *Dhokla*. One of the cook-cum-helpers (CCHs) distributes plates and the other one serves the meals. Kanu's and Raziya's mothers are also helping students



Fig. 3.41

sit in an orderly manner as some of them are very impatient to grab their share. They tell students to sit in circles while the meal is being served, Sakshi asks Class IV and V children to guess what ingredients have been used to prepare *Dhokla*. Students tell various things and then Kanu's mother also tells how she prepared *Dhokla*. By this time all meal is served and students relish eating it. Priya shared with the teacher how she used to cook at home for her siblings while her parents were off to work but now she could also attend school as all of them were getting noon meals from the school.



Fig. 3.42 : *Children having Mid Day Meal in School*

MDM Programme

The National Programme of Nutritional Support to Primary Education (NPNSPE), popularly known as Mid Day Meal (MDM) programme exists in India for the last 18 years. The scheme was launched to provide Mid Day Meal to each and every child aged between 6-14 years of eligible schools to achieve the goal of Universalisation of Elementary Education. The scheme was launched with the following objectives in mind:

- 2 To address hunger in schools by serving hot cooked meal.
- 2 To improve nutritional status of children.
- 2 To encourage poor children, belonging to disadvantaged sections, to attend school more regularly and help them concentrate on classroom activities, thereby increasing the enrolment, retention and attendance rate.
- 2 Providing nutritional support to students in drought affected areas during summer vacation.

We all know that MDM is an important and essential activity in majority of the schools in the country. It can help in achieving the objectives of ESD as not only does it provide many opportunities to improve health,

- _ Does your school have the Mid Day Meal (MDM) programme? What is the strength of the students up to elementary level in your school?
- _ Do all students avail MDM? If not, how many of them eat MDM on an average per day in your school?
- _ Is there a separate cooking, storage and washing area for cooking food?
- _ Does the kitchen-cum-store have adequate space, light and ventilation?
- _ Do the devices and fuel used in cooking contribute towards eco-friendly practices?
- _ Is there an availability of safe drinking water?
- _ Is the nutritive value of the food cooked being ensured?
- _ What steps are taken to prepare and serve food in a hygienic manner?
- _ Does the school cater to the physical and emotional health of all children?
- _ Who all can play a responsible role in effective implementation of MDM?

Let us
Reflect



hygiene and social interaction but can also be an effective tool to enrich learning in different curricular areas. Going through the following section helps find answers to all the questions mentioned above. This will enable you to develop insight for using it to promote children's overall development as envisioned in the RTE Act and eventually, towards Greening of elementary schools.

As you know that the MDM programme in any school has the following aspects:

- Managing and maintaining the infrastructure for MDM.
- Ingredients and cooking process.
- Distribution of MDM.
- Monitoring the MDM.

Each of these is discussed below to help you use sustainable eco-friendly practices and thus help you to proceed a step further towards making a school a Green School.

3.5.1 Managing and Maintaining the Infrastructure and Cooking Fuel for MDM

Infrastructure for MDM includes the lay out and construction of the kitchen-cum-store and the cooking devices.

Let us Reflect



Is there a separate space for cooking, storing and washing for the MDM?

Activity



If yes, students may be involved in the following activities.

1. Ask students to draw lay out of the school premises and highlight the position of the kitchen-cum-store of your school in that.

2. They may also draw the map of the kitchen-cum-store.

Note Remember that the neatness and accuracy will vary as per the age and development level of the children.

3. Let students analyse it for the adequacy of space for storage, cooking and washing utensils. The questions such as the following might be helpful.

- Mention the different sections of the kitchen-cum-store and their use?
- Is there separate rooms/sections for cooking, storage and washing?

- Is the space adequate for cooking, storage and washing?
- What are the sources of light in it?
- What kind of system exists for the ventilation?
- Are the classrooms away from kitchen?
- What is the material used in the construction of the kitchen-cum- store?
- What are the advantages of this layout?
- Do you think it needs any improvement? How?
- Can the absence of the kitchen-cum-store lead to any health hazards or accidents? How?

Note Care may be taken to ask these as per the cognitive level of students.

4. To sensitise students and cooking staff towards the safety aspects related to the preparation of meals. Let them go through news such as the following and discuss the related questions.

JULY 2004 Shiksha Newsletter and World Socialist Website (22 July 2004)

On July 16, in a horrifying tragedy that shocked the nation, 90 school students were burnt to death and 23 seriously injured as fire raged through the nursery section of the Saraswathi English Medium School in Kumbakonam town of Thanjavur district in Tamil Nadu. According to police and eyewitnesses, the blaze started in the kitchen while the Mid Day Meal was being prepared. The attached roof caught fire which rapidly spread to the rest of the building. Although, it is illegal to have thatched roofs on schools, the practice is widespread and largely ignored.

- What is the material of the roof of the kitchen shed in your school?
- Is it inflammable?
- If yes, should it be of a different material? What could be that?

- Do you think the cooking needs to be done on a raised platform? Why?
- Is there an appropriate drainage system in the kitchen?
- How is the waste disposed off?
- Does the kitchen have a raised platform for cooking?
- Does it get adequate light?
- What is the system of ventilation?
- Who all can be approached (people/agencies) to help the school adhere to the stipulated norms? (For example, SMC).

Did You Know



Every State has been directed by the Ministry of Human Resource Development (MHRD), Government of India (GOI) to set up a Grievance Redressal Cell.

As per the MDM–MHRD guidelines as well, it is mandatory to construct a kitchen-cum-store as its absence would expose students to food poisoning and other health hazards and even fire accidents. Also it needs to be constructed away from the classrooms. Absolute care needs to be taken to ensure that kitchen-cum-stores should not have any thatched roofs or other inflammables, like straw, bamboo and synthetic material. Further, it should be designed in such a way so that the storage facility with locks is available to check pilferage. It should always be kept clean.

Cooking Devices and Fuel

Better ventilation for existing cooking devices and the use of cleaner burning fuels can help a lot in the process of Greening of the MDM programme.



Let us Reflect



- Which stove (*chullah*) is being used in your school?
- What is being used as fuel in it?

India's Indoor Air Pollution (IAP)

According to WHO report 'Every year, indoor air pollution (IAP) is responsible for the death of 1.6 million people — that's one death every 20 seconds'. It comes from the use of biomass fuels (fuel wood, animal dung, crop residues, etc.) for cooking, heating and lighting. IAP affects India more than other countries as most of the rural population are still accustomed to use the biomass fuel. In rural areas of India 72% of the total population (90%) of households also use biomass, i.e. wood, twigs (64%), crop waste (13%), and animal dung (13%) mostly with traditional stoves and inadequate ventilation, leading to inefficient combustion (production of poisonous gases) thus causing to indoor pollution and respiratory ailments.



Did You Know



Indoor air Pollution – World Health Organisation fact sheet

Given below are some activities that would help your students be aware of and compare different types of fuels used for cooking in order to sensitise others about the conservation of fuels and use of eco-friendly fuels for cooking. These will also enable them to make better choices from the options available besides getting tips for their safe storage as well as usage.



Activity



5. Show students (if possible) the working of Smokeless *chullah* (cooking stove). Ask them to compare the traditional and smokeless *chullah*. They may write a report about it and present it in the class. They may use the pictures as shown below.

Smokeless *chullha*. The smokeless *chullah* costs about Rs 200-300 . Its fuel efficiency is also higher. The cook stove is available in various sizes suiting the need. It conserves biomass fuel (firewood, animal dung, crop residues) and helps reduce cooking time.



Fig. 3.43 : Traditional chullah



Fig. 3.44 : Smokeless chullah

6. Let children enlist some fuels which can be used in place of firewood.
7. Does their list contain any different name as well? They may add that to the list given below and fill the following table.

Fuel	How can it be procured?	Approx. cost (per unit)	Gives out smoke Yes/No	Anything left after combustion	How do you store?
1. Kerosene					
2. LPG					
3. Firewood					
4. Charcoal					
5. Cow dung					
6. Crop residue					
7. Any other					

8. Let students compare the fuels mentioned above for the following:
 - Which do you think is the most easily available to you?
 - Which seems to be very cost effective fuel?
 - Which is the least polluting and most environment-friendly?
 - Which, according to you, is the most appropriate to be used in schools?

- Do you know people around who are engaged in fuel gathering?
How do you think it harms them?

Did You Know



Lot of women and children are engaged in fuel wood gathering daily. It limits the women's contribution to other productive activities and takes children's time on studies. They are also prone to injuries and violence.

Activity



- To familiarise students with LPG usage and its safety, help them read a receipt of an LPG cylinder and carefully read its back side. They can further sensitise the cooking personnel and others in their family and neighbourhood.

INDANE SAFETY TIPS : Check rubber tube regularly for cracks, if any. Change Rubber tube at least once in two years

Happy Homes are Indane Homes

यदि आपको गैस की गंध आती है

1. यह सुनिश्चित करें कि चूल्हे का ऑन नियंत्रण नाच बंद अवस्था में है।
2. आग-पराग आदि सम्बंधित सभी जलती चीजों को हटान चुमाये।
3. दिया-सलाई का प्रयोग कटाचित न करें।
4. सिलेण्डर पर लगे रेगुलेटर के नियंत्रण नाच को पूरे नाच के समानान्तर बंद अवस्था में रखें।
5. सभी दरवाजे व खिड़कियाँ खोल दें।
6. किसी भी प्रकार का इलेक्ट्रिक स्विच या प्रयोग न करें। सिलेण्डर को बदलने समय सिलेण्डर के नाच को बाल्ब के ऊपर अच्छी तरह से फिटस कर दें।
7. सिलेण्डर को बुरी जगह पर सुरक्षित रखें तथा किसी प्रकार की आग का प्रयोग न करें।
8. आपातकालीन स्थिति में अपने बंदूकों विडक तथा अपातकालीन सेवा सेल नं० 9868125813, 9868287996 (6:00p.m. to 9:00 a.m.) से सम्पर्क करें।
9. हमारा अधिकृत एचों विना अल्पन इंडस्ट्रीज व बूलर मामला न करावें।
10. गैस का रिक्त होना पकड़े बार तब बाईय समय-समय पर बदलते रहें, सिलेण्डर को हमेशा सीधा रखें।
11. यकीनक चांसेस 40/40 / 1

IF YOU SMELL GAS

1. Ensure that BURNER KNOBS are in CLOSED position.
2. EXTINGUISH all fires and flames.
3. Do not light a match.
4. Switch OFF the pressure REGULATOR By turning the knob the arrow's end to the HORIZONTAL position.
5. Open all doors and windows.
6. Do not operate electrical switches. Remove Regulator FIX the cap on the valve.
7. Remove the cylinder to a safe and ventilated place and do not bring any naked flame or fire near the cylinder.
8. Call your distributor or Emergency Service cell No. 9868125813, 9868287996 (6:00 p.m. to 9:00 a.m.).
9. Do not get the hotplate/cylinder repair/checked without our authorised slip.
10. Prevent Gas Leakage. Keep cylinder upright. Check rubber tube regularly.
11. Mechanic Charges Rs. 40/-

SAFETY BEGINS AT HOME

Indian Oil

XTREME PREMIUM (LUBRICANT PETROL) XTRAMILE (LUBRICANT DIESEL) SERVO (WORLD CLASS ENGINE OIL) autogas (EXPLOSION RESISTANT GAS MIXTURE)

Fig. 3.45 : Backside of LPG cylinder receipt

- What are the various safety tips provided to prevent gas leakage?
- What precautions are mentioned to be observed in case the LPG leakage is there?

- Did the school face any incident of gas leakage/fire anytime? If yes, what steps were adopted after that?
- Is the contact number and address of the emergency services to deal with leakage and fire displayed or available in your school?
- What are the steps adopted to make the cooks, staff and students aware of dealing with any such incident?
- How can we store wood, crop residue, coal, kerosene safely?

- 2 Kerosene should be stored in leak proof container.
- 2 Wood, coal, cow dung and crop residue need to be protected from moisture.

10. Students can be encouraged to take up projects for a campaign in the society to install smokeless *chullah*.

Let us
Reflect



- _ What are the teaching-learning opportunities that you can provide your students through the above mentioned activities under Greening through infrastructure and cooking devices and the fuel and its usage?
- _ How do you think these would lead to Greening of the Elementary schools and ESD?
- _ Design a few more activities in your context that lead to ESD.

Conservation of the fuel in our daily life is very important. In MDM preparation, if some money can be saved on the fuel consumption, then it can be utilised judiciously to provide more calories and better nutrition to the children.

Activity



- 11.** Ask your elders about various ways to conserve cooking fuel at home. Discuss about these in the classroom and make posters in groups for display in the classrooms/corridors.



Did You Know

Some ways to conserve fuel for cooking

- Soaking of rice and pulses reduces cooking time.
- Use vessels with broad base to cook so that the flame is below the base.
- Usage of a pressure cooker for boiling and steaming after one whistle of the pressure cooker/ when the water starts boiling, the gas knob can be turned to minimum to reduce the flame.

Can you think of more ways to conserve fuel?

Many schools use biomass fuels, especially firewood for cooking. Better ventilation can be adopted through the use of smokeless *chullahs* but the burning of biomass still harms the environment in numerous ways.

Can you think of cooking without biomass fuels?

Have you heard about the solar cookers?

Solar Cooking and the Mid Day Meal Programme

Solar cooking is the best substitute to the use of fossil fuels (biomass, LPG, etc.) which can help address the problems associated with the use of biomass fuels for the health of our women and children. In a hot country like India, solar energy can be extensively used and solar cookers can provide a smoke-free solution. A small family-size solar oven can quickly heat enough water to cook rice or lentils with no fuel. A large capacity solar cooker may be used to cook food for all the students of the school. Solar ovens can prepare meals with no fuel cost, using only passive solar energy which thus provides a clean and cost-free alternative to the use of firewood or dung. They are most efficient between 10 a.m. to 2 p.m., so they can be used effectively to prepare the Mid Day Meal. Any excess capacity of the oven could be used to dry food for preservation or storage, to heat and purify water, etc.

A Smokeless village Kurabalakota in Chittoor district is a village mandal in the State of Andhra Pradesh, India, where for the first time at Bysanivaripalle, biogas plants and solar cookers were being used by all families and the village had become smokeless. Each solar cooker costs Rs 6,250 and the Central Government gave ₹ 2,250 as subsidy.

Reference: Census of India.



Fig. 3.46 : Villagers using Solar Cooker

Solar cookers are highly durable, require low maintenance and

have an estimated useful life of 15 to 20 years. The solar cooker can be used both in the rural and urban areas; in the rural sector it helps curb deforestation and also avoids health risks through smoke from firewood and in the urban sector it saves energy on kerosene and LPG and makes cooking easy.

Many States have introduced solar cooking on pilot basis in government schools. The results are very encouraging as it saves the cooks from pollution due to smoke and also from the worry of getting the food burnt. The taste of the food in solar cookers is also liked by children.

Activity



- 12.** Let the students find out the reasons why solar cooking has not picked up in India as well as globally in spite of its advantages.
- 13.** Think of some innovative themes/topics on fuels, their types, conservation, usage, safety, etc. and organise debates in your classroom/school.

3.5.2 Ingredients for MDM and Cooking Process

Providing nutritious food to students for their overall development is of primary concern worldwide. It is a prerequisite to their better physical and mental health to help them concentrate in different curricular areas thus fulfilling the objectives of quality education to a large extent and eventually, that of ESD. Adequate nutrition and hygienic cooking and serving practices of the meal can be considered as Green practices in MDM. This requires procurement of the ingredients of cooking that cater to the nutritional needs of students besides ensuring orientation of the staff engaged with it to cook and serve in a hygienic manner.

(A) Procurement and Storage of Ingredients for Cooking

It is important for the students to understand the source of the ingredients for cooking and their safe storage as they may be needed to be engaged with various activities. These would let them acquire information engaged in the following activities.

14. They may be involved to collect the following information individually or in groups.

- Is there a fixed menu in your school?
- How often is it changed?
- Who decides the menu?
- Is it displayed in the school?
- If yes, where? If not, how could anyone know about it?
- What will you do if the decided menu is not being followed?

15. Enlist different dishes that you get in the MDM and find out the ingredients to prepare those?

Name of the Dish	What is it made up of? (Ingredients)

- Which ingredients are procured in bulk? How are they stored? Are the ingredients stored in dry and covered containers to protect them from moisture and pests?
- Which items do not have a long shelf life? Are these procured fresh?

16. Find out how different ingredients are procured for preparing the meals in your school?

Ingredients	Supplied by Central/ State Govt.	School Management	Community	Purchased from the Market	Any other
Rice					
Wheat					
Vegetables					
Spices					
Salt					
Water					
Any other					

- Do you have anything marked under the column school garden?
- If yes, what is that?
- If no, how do you think a school garden can help?
- Do you have any such garden in your school?
- How can it be used effectively for implementation of MDM?
- Did it happen at any time that the food was not prepared/ served due to non-availability of any food ingredients?
- How could that situation be checked?






In Shimoga district, Sagar Taluk GHS Subhashanagar, teachers, with the help of support staff and students, established a kitchen garden where they grew vegetables that they use to prepare the school MDM. The yield is so good that they even distribute these to ten schools in the neighbourhood of the taluka everyday.



Fig. 3.47 : *Students maintaining Kitchen Garden in schools*

In Mandya District GHPS, Byadarahalli and GHPS, K. Kodihalli school in Maddur Taluk, Karnataka the teachers and the students established a school garden where almost many types of vegetables, especially greens and fruits are grown and used for Mid Day Meals. Locally available millets, jowar and ragi, are used for additional nutrition.

(B) Taking Care of the Nutrition

18.  Students may be asked to reflect on the school menu.
-  Write the weekly menu followed in your school.
 -  Does it include cereals, pulses, green vegetables, fruit and eggs?
 -  Which dishes do you like most?
 -  Which dishes do you wish to replace and by what?



Let us
Reflect



Do you think changing the menu will affect its nutrition and the expenditure? How? Can the school afford that? Discuss with other staff members, headteacher or SMC?

High levels of malnutrition, particularly among growing students are directly and indirectly associated with high morbidity and mortality. Malnourished students tend to have lower I.Q.(Intelligence Quotient) and impaired cognitive ability which affects their school performance and productivity in later life.

Some major nutritional deficiencies affecting young students in India are:

- Nutritional anaemia (Haemoglobin [Hb] <12g/dl) due to iron and folic acid deficiency is widely prevalent among young students and adolescents. Iron deficiency in school-going students affects their learning ability and concentration power.
- Protein Energy Malnutrition among school age students assessed through weight deficit for age is the most sensitive indicator of their nutritional status.
- Deficiency of micronutrients. Even mild deficiencies of micronutrients (vitamin A, iron, folic acid, zinc, etc.) affect their growth, development and immunity. Vitamin A is important for promoting growth of the child, and building immunity and resistance to diseases. Iodine deficiency during childhood, the period of maximum growth, can result in loss of I.Q. points and poor physical and mental growth and development.



Did You
Know





Activity

19. Help students to examine your school menu; find out the nutrients that these dishes are rich in. (For example, vitamins, calcium and protein).

20. Students may collect the following information:

- (i) What are the various cooking practices being followed in your school?
 - (a) Wet cooking: (e.g. boiling)
 - (b) Dry cooking: (e.g. frying)
- (ii) What kind of rice or wheat is used to cook food?

(Broken/whole wheat, white flour, parboiled rice/unpolished rice/polished rice).



Did You Know

A slice of whole wheat bread has the protein content almost double and fibre in almost triple amount compared to that in the white bread. Refined grains, such as white rice or white flour, have both the bran and germ removed from the grain. Refined grains don't have as many nutrients as whole grains do, and they don't provide as much fibre naturally. Parboiled or unpolished rice is highly nutritious as well as cheaper. Sprouted pulses have more nutrients and need to be incorporated in single dish meals.



Activity

21. Ask students to visit the kitchen and observe and identify various processes/methods used for cooking on different days and fill the following table.



Did You Know

Why do we cook?

Cooking improves the appearance and taste of foods and confers new flavours. It destroys harmful food-borne micro-organisms. Digestibility of several foods, particularly of starch, improves on cooking. Also, heating the legumes especially soybean helps improve protein quality.

Cooking Process	What is being cooked?	Vessels used	Can it be cooked by any other process? If yes, then name it.	What else can be cooked using this process?
Boiling				
Steaming				
Frying				
Roasting				
Baking				
Any other				

Note The teachers may take the students to observe the Mid Day Meal being cooked in the school.

22. Discuss with students the occasions when people eat together.

Activity



23. Organise *melas* in school where a close interaction between community and school takes place. Students may be asked to share their experiences on such occasions.

(A) Preserving nutritive value of food

While most of the time we eat cooked food, the cooking process, if not done carefully, may lead to the loss of lot of nutrients that depend on the temperature, duration of cooking and the nutrient involved. Let us see how.

- Are the rice and vegetables washed before cooking? How?
- Do all vegetables need to be peeled?
- Are the vegetables freshly peeled and cut?
- What kind of salt is being used?
- What happens if we fry repeatedly in the same oil?

- Weather the vegetables cooked with the lid on are more/less nutritious as compared to when cooked in an open vessel?

(b) Washing and cutting of food ingredients

Leafy vegetables should be thoroughly washed before cutting. All vegetables should be freshly cut in large pieces to reduce the spoilage due to air exposure. Leafy tops of carrots, radish, turnips, etc. should not be thrown but utilised in preparing Mid Day Meals. Food items involving fermentation such as *idli*, *dosa*, *dhokla*, etc. may be encouraged for preparation as fermentation improves nutrition.

Rice must be washed with minimum amount of water to prevent the loss of minerals due to washing. In parboiled rice loss of vitamin and minerals due to washing and discarding of kanjee is much less as compared to boiled rice. Parboiling diffuses nutrients into the grain and prevents leaching by forming a protective gelatinised coating on the grain. Only “iodised salt” should be used for cooking Mid Day Meals.



24.

- Let the children be aware of the iodised salt and why it should be used during cooking? They may find out whether different brands of salt available in the market contain iodine or not?
- What are the other ingredients being used for cooking? Find out the source of their procurement?

Iodine deficiency is a primary cause of preventable mental retardation and brain damage. It also increases the chance of infant mortality, miscarriage and still birth.

Some precautions that need to be observed while cooking which can help in preserving its nutritive value are given here.

- Cooking to be done in minimum amount of water and if there is excess water, it may be used in soups and gravies. Excess

water during the boiling of rice should not be thrown but may be mixed with *dal* if the two are cooked separately.

- The root vegetables should be cooked with their skin as maximum nutrients exist in fine layer just under the skin and peeling can be done after cooking.
- Steaming prevents loss due to leaching. Vitamins, especially those of water-soluble B group, show a greater loss during cooking.
- Cooking in acid media with tamarind and other acids has a protective effect against vitamins. If the fat (such as oil/ghee) is repeatedly heated during frying it may end up containing toxic substances.
- The dishes need to be cooked for a short period of time and covered with a lid while cooking to prevent loss of nutrients. Over-cooking should be avoided as it may compromise nutritive value of proteins, particularly if the heating is done in the presence of sugars.
- Use a minimum quantity of fat for frying and avoid using it over and over again as reheated oil is harmful for frying and should be avoided.

The most important part of the cooking and the serving process of MDM requires the use of potable water.

Activity

25.



- What is the source of water available for cooking and drinking?
- Does it require cleaning before use?
- What steps are followed to clean it?
- Is it filtration through fine cloth, boiling, using alum, chlorine tablets, underground water (borewell/handpump) or any other?
- Use any such process to make the water potable.

(C) Ensuring Hygienic Cooking by the Cooks

26. Let the students observe the following :

- Do the cooks wash their hands with soap before cooking?
- Is their hair tied neatly while cooking?
- Do they wear apron and head gear?
- Do they wash the vegetables, pulses and rice with clean potable water?
- Are the leafy vegetables washed thoroughly before chopping?
- Whether the cooking utensils are cleaned the same day after the food is served?
- Is the cooked food kept covered before distribution? If yes, how?
- Do the cooks-cum-helpers have their nails trimmed?

In Haveri district GHPS, Yattanahalli, GHPS, Kurubagonda, SDMCs have taken lot of interest in Haveri district with regard to MDM in schools. All cooks in Ranibennur taluk are well-trained in cooking nutritious good quality food and are provided with two sets of uniform, aprons, head scarfs and some have also been provided with hand gloves. Idly cookers, pressure cookers grinder mixer have been donated by the community.

Fig. 3.48 :
Some hygienic practices in States for MDM



The cooks need to wear cotton clothes while cooking and avoid synthetics to save themselves from fire/burns.

Activity



27. Ask the students to check the following food items for adulteration (Give them appropriate instructions and tips):

- Turmeric (*haldi*): If unadulterated, it will give red colour with soap solution.
- Black pepper seeds (*kali mirch*): Genuine black pepper seeds will sink when put in water.
- Red chilly: If unadulterated, it will not leave behind any colour in water.
- Pulses and vegetables (check for colour): If polished with artificial colours, they would leave behind colour when soaked in water.

3.5.3 Distribution of MDM

Let us Reflect



- _ Do students wash their hands before and after MDM?
- _ What do they use for washing hands?
- _ Are the plates kept in school or students bring from home?
- _ How is the cleanliness of utensils during cooking and serving taken care of?
- _ How do the students sit in your school while having the MDM?
In a straight line/big circle/small circles/wherever they wish to/Any other.

To Do



- Observe the MDMs logo.
- _ Is it displayed in school? Where?
 - _ What does it signify?
 - _ Do you see students sitting in a circle?
 - _ Why do you think the food plates are depicted orange?



Did You Know



The MDM logo depicts a group of children sitting together in a circle and having their meal served hot. Equal importance is given to boys and girls. Orange colour is used for the food plate to represent it as hot and fresh food. It also symbolises energy, heat and Sun. Overall, it represents a shape of flower as a symbol of childhood, happiness, healthiness, progress and well-being of the future generations.

Children may be served meals while they are seated. It helps respect their dignity and saves them from getting hurt if the hot food from the plate falls accidentally on being served in a queue.

Read the following and express your views.

It is lunch time in the Government Primary School in Dantanuru village in Mahbubnagar district of Andhra Pradesh. Yellamma and Anjanamma can be seen serving hot rice and this is a scene common to most primary schools in the State. The two women serving food are a part of the Mahila Podupu Sanghams, Self Help Groups and have taken up the responsibility of cooking the MDM. They two take care of all the expenses like daal, cooking fuel, eggs and other ingredients like spices. Rice is provided through fair-price shops. They change the curries daily; provide tasty food with eggs once a week. These women cooks belong to the OBC (Other Backward Classes) section. Sarpanch C. Srinivasulu says that even Scheduled Caste women were involved in the activity. It did not face any protest in the village. The scheme has the full backing of the State Government.

Let us Reflect



- _ Who cooks and distributes the MDM in your school?
- _ Who employs them?
- _ Are there any Self Help Groups (SHGs) associated?
- _ Who recruits them?
- _ Do you agree with the views of the Sarpanch about recruitment of SC women as cook-cum-helpers?
- _ Does your school practise such things?

School Health Programme

The main aim of education is the overall development of the child. Health is a significant determinant of the well-being of the child. Promoting a healthy physical development of students is as much the responsibility of the education system as nurturing the cognitive and the socio-emotional development.

Let us Reflect



– Is a health card maintained for each child of your school?

– Does the health check up take place in your school? If no, find out the reason and initiate efforts with School Management Committee (SMC) or Principal for doing so. If yes, the following activity may be done with your students.

Activity



28. Let students take their health card and find out:

- When was the card issued?
- How many times has the health check up been done since then?



Fig. 3.49

- How many times has the health check up been done in a year?
- Who has done it?
- On what different aspects the health check up is done?
- Were students diagnosed with any problems? If yes, which ones?
- Are they given treatment in the school or referred somewhere else?
- Are any referral cards also issued to these students?
- Is the immunisation done as per the national schedule?
- Students can be asked to bring a copy of their immunisation card to the school and it can be used as a teaching-learning opportunity to discuss various diseases and their preventive measures? (Help of the medical staff visiting school for health check up may also be taken.)
- Are the Vitamin A, iron, folic acid tablets and de-worming tablets distributed as per schedule?
- How many students have been diagnosed with visual, hearing or any other physical disability? Find out.
- Have they been provided with the prescribed aids and appliances?

To Do



- _ Can you help in maintaining good health and hygiene of children?
- _ Mention a few situations that provide you such opportunities.

Did You Know



School Health Programme needs to be in place to address holistically the health and nutrition needs of children. Teachers should screen students on a continuous basis and a trained medical personnel /doctor should visit the schools on a fixed day for screening, treatment of minor ailments and referral. Screening of general health includes assessment of Anaemia/Nutritional status, visual acuity, hearing problems, dental check up, common skin conditions, heart defects, physical disabilities, learning disorders, behaviour problems. Basic medicine kit should be provided to take care of common ailments prevalent among young school going children.

Why School based Kitchen?

Let us Reflect



- In which area is your school located (Urban/ Rural)?
- Does your school get MDM from the school based kitchen or the central kitchen?
- Why do you think the MDM guidelines prioritise the use of school based kitchen?

In Ria's school the Mid Day Meal is cooked at some central kitchen by a caterer and supplied to 15 schools of the neighbourhood. In her school the food is delivered first by the concerned person at 7 am. By the time it was served it turned cold. Though, it was *aloo poori* with *kheer* but many students could not enjoy that.

To Do



Please go through the MHRD guidelines for MDM on the website of MHRD and reflect if your school is justified in setting/using the kitchen meant for MDM.

In urban areas or at some places where school-based cooking is not feasible, generally a centralised kitchen setup is possible for a cluster of

schools and cooked hot meal may then be transported under hygienic conditions through a reliable transport system to various schools. However, a school-based kitchen has many advantages over a central kitchen:

- Students get fresh food like home cooked food.
- Many learning opportunities can be provided to students by allowing them to observe (kitchen layout, storage and procurement of ingredients, vessels for cooking and cooking process), involve (the teachers, students, MDM staff, SMC, etc.), sensitise (students, staff and community), manage (safe, hygienic, and nutritive meals) the MDM programme of their school.
- Growing vegetables and fruits in schools provides children not only nutritious MDM but also a first hand experience to learn.
- Involvement of mothers and community in MDM can be sought.
- The issues of equity can be addressed by providing employment to disadvantaged (esp. women and those from the deprived section).
- Helps ownership amongst children, parents and community.

3.5.4 Monitoring under MDM

Let us find out

- Enlist the organisations and agencies associated with the MDM programme. Try to find their roles and responsibilities towards the MDM programme being implemented in your school/district /State.
- Do the following have any role in the whole process? If yes, then state in a few words how do they help?

Person(s)	Do they have any role in MDM	Role
Head Teacher		
Parents		
Teachers		
PTA		
SMC		
Community		

Some case studies of effective community participation in Dakshina Kannada District, Karnataka.

In schools of Dakshina Kannada, Bantvalataluk, GHPS, Pilichindikallu, SDMCs are highly cooperative. Community has donated mixer-grinder, utensils, plates and tumblers to children. In Putthurtaluk the community has provided plates and tumblers to all the students of the taluk.



Fig. 3.50 : Items donated by community for MDM in School

In Uttar Karnataka districts of GHPS, Karwar and Murudeshwara, Gokarna and Idugunji, everyday donors are providing vegetables and an amount of Rs 600 per school for buying ingredients per month. Wire meshed box and water filters are donated by the parents. In one of the schools, food is given to students by the donors which is relished by children, as fish is the main food of the locality.



Fig. 3.51 : Donations in cash and kind by community

In Uttar Kannada, Sirsi Taluk schools in Kageri and other places, almost all school students are getting tasty pickles, curd/buttermilk from the donors for MDM. *Tambuli* greens and coconuts are ground and mixed with curd/buttermilk and given to students, adding to the nutrition as well as taste.

In Gadag district, as shown, *idli* cookers have been provided to schools by the donors in the community. *Idlis* and *dosas* are prepared in the schools of on every Saturdays and distributed to students in MDM which is highly enjoyed.

Let us
Reflect



— What, according to you, are the main aspects about MDM in your school?

Good things about the MDM in my school	Some aspects where it needs improvement

3.6 Beyond School: Greening through Extended Activities

3.6.1 Involving Community

Let us
Reflect



- _ Who all would you consider being part of the community as far as the school is concerned?
- _ What is the nature and extent of parents' participation in your school?
- _ Do you ever invite people from the neighbourhood/locality to your school? If yes, on what occasions and for what purposes?
- _ Do the teaching-learning activities of your school have any scope for the students to reach out to the local community?
- _ Are there any issues where your school can be benefited by the community?
- _ Do you think the community can also be benefited by the school activities? How?

Effective partnership between the school and the community can help address the environmental concerns. The community can be an important resource in the teaching-learning process besides getting benefits in return from the school as well. This helps strengthen the bonds between the school and the community.

Given below are some of the real life examples where the school and the community have partnered in some way or the other, in order to develop a sustainable environment in the school and around.



Fig. 3.52 : School-Community partnership

Case 1

Bal Sansads for Water Quality Monitoring: Soon after their classes are over, around a dozen students from Pathargora Upper Primary School in the Mousabani block of East Singhbhum district in Jharkhand are busy packing their portable water-testing kit. These students are members of the local Bal Sansad or Child Cabinet, who have been trained to test the quality of drinking water from the hand pumps and wells in their village. The *Bal Sansads* project is a joint initiative of the Department of Human Resources Development, the Drinking Water and Sanitation Department, the Government of Jharkhand and UNICEF.

Proudly carrying the kit on her shoulder and leading her cabinet, Saloni Mardi, the Prime Minister of this Bal Sansad explains how the collected water samples will be tested for harmful bacteria and chemical content. "After the testing of the water, we can conclude whether the water is safe for drinking or not. This is essential information that has to be communicated to the villagers who are using this water for drinking," says Surumuni Hansda, the Health Minister in this *Bal Sansad*.

The *Bal Sansad* tests the quality of water from different sources. The group now undertakes the task of checking the water quality of every school, hand pump and well annually. Students have also been assigned the task of testing the water in their village on days when they are free. Necessary action is initiated if the water is not found safe for drinking.

Apart from testing the water from various sources, *Bal Sansads* are also involved in educating the community on safe drinking water. During the training sessions, the students are given information on the need to drink safe water. They are also informed about the consequences of consuming unsafe drinking water.

http://www.unicef.org/india/wes_6127.htm

Case 2

The Government Co-ed. Senior Secondary School, Baprola, Delhi has a large campus of about three acres. More than one acre of the land had wild vegetation growing to the height of 6-7 feet. When the new Principal joined the school, he felt that a big part of the school was lying unused and it had also become a security threat for the school because animals and anti-social elements could easily hide over there. So, he talked to the people in the community and they offered full cooperation to the school. Soon, the whole area was cleared of the wild vegetation and now it has been developed beautifully giving the school a new grand look. The community at Baprola has developed a very close tie with the school. The people have donated fans and water coolers to the school. They regularly supply cow dung to the school for vermicomposting. Whenever the school demands anything from them, they come forward with full support.

Case 3

In Deepalay a School, Kalkaji Extension, Delhi most of the students come from the slum colonies nearby and the school provides them education at a subsidised rate. The school faced the problem of some boys eating *gutka* (tobacco) in the school. The Principal decided to take a strict action against the boys who brought *gutka* packets with them. So, all the boys were thoroughly checked. The school Principal met the community leaders and asked them to put a ban on the sale of *gutka* in the area around the school. With the help of the community, the Principal was able to control the sale of *gutka*. Soon, the school became a *gutka*-free zone. The school also took out rallies in the community lanes and spread awareness about the harmful effects of tobacco and the rallies were led by a person of the community who had lost one of his lungs due to tobacco smoking.

Case 4

Eat healthy Stay fit programme in K.V. AAI Rangpuri

In Kendriya Vidyalaya Rangpuri, a school in New Delhi, informal discussions with parents on different occasions often revealed that children were extremely fond of junk food and disliked home-made simple food. The matter was brought to the notice of the Principal and she discussed the matter with the staff council. First step in this regard was to keep a check on the school canteen. She constituted teams that included students and teachers and the matter was discussed with the canteen owner. The substitute to different junk food items were thought of and a list was provided to him. The rates were also discussed, e.g. in place of noodles, pizza's and burgers, food items such as idli, dosa, rajma chawal, channa kulcha, etc. were suggested. The canteen food improved. However, the problem still existed. During observation of children's tiffins it was found that many students brought noodles, chips and biscuits as lunch from home.



Fig. 3.53 : *Healthy salads and breakfast ideas prepared by the students*

Mrs Silvy Zachariah, EVS teacher decided to seek help from the community by speaking to the parents of the students regarding the ill effects of eating junk food. She launched a project titled, "Eat Healthy, Stay Fit", which highlighted

the importance of eating good wholesome food for better physical, mental and psychological development and for the well-being of the students and the entire community. She decided that the project is not to be an activity in isolation, but linked it with the curriculum. In fact, she decided to teach 15 units of the EVS textbook of Class V through this project of ten months.

The project was divided into two terms. Right from healthy eating habits to what food astronauts and mountaineers carry with them on an expedition was taken up. Food pyramid, balanced diet, techniques of food preservation, loss of nutrients due to unscientific cooking methods, how food gets spoilt, health and personal hygiene, collection of information on food used in ancient times, problems due to malnutrition and anaemia, deficiency diseases, medicinal plants and herbs, junk food and their adverse effect on the body, importance of water in our diet, problems caused due to dehydration, etc. were taken up as themes.



Fig. 3.54 : *Celebration of “No Junk Food Day”*

In the second term children discussed and discovered about special food eaten by people in far flung regions of the world like hot desert and cold desert, food distributed in relief camps during disasters like earthquake, tsunami, flood, hurricane, etc., special food supplements taken by players and sports people, food products collected from the forest, different farming methods and different types of crops, organic farming, composting of bio-degradable waste, preserving and storing grains and pulses using natural



Fig. 3.55 : *Different types of foodgrains*

methods, festivals related to farming and harvest and food prepared during festivals.

During the project the parents cooperated by providing proper nutritious food in their children's lunch boxes and even stopped giving them money to buy chips, samosas and cold drinks. Parents also helped with all the activities in the project like guiding the students to collect different



Fig. 3.57 : PPT presentation by students on the interactive board

types of salads, lemonades and smoothies for the activity, "Cooking without Fire" and helped organise a food court by preparing healthy regional dishes.

A "Children's Market" was organised with full help and support from the parents, who provided fruits, vegetables, organic food, pickles, jams, etc. which the students sold in the children's market to the school teachers and senior students. It was a market for the children and by the children. A post office selling stamps and three to four stationery shops were also a part of the market.

Some of the other activities that the students undertook as a group were interactive games, poster making, scrap book, slogan writing, creating models and charts, PPT presentations, community lunch, rally and campaign, short plays,



Fig. 3.56 : Food court organised by the students

types of foodgrains (as sample for display), supporting the students in making posters and banners for celebrating "No Junk Food Day" in the Vidyalaya, by giving ideas to make different



Fig. 3.58 : Culminating product: A recipe book compiled by the students

qawali and collecting healthy food recipes, which were compiled into a recipe book, released by the Principal at the culmination of the project.

A number of days such as World Health Day, World Heart Day-Karo Apne Dil Se Pyaar, Hepatitis Day, Fruit Day, etc. were celebrated where children were encouraged to write slogans and make posters which played a key role in spreading awareness among the students of the entire school and helped in peer learning.

The entire project was conducted with a holistic approach and helped children think and try out new ideas, reflect independently. This encouraged collaboration and promoted self-learning skills. Through the support of the community, children also learned important life skills like buying and selling, money transaction, besides enhancing their language and interactive skills.



Fig. 3.59 : Project “Eat Healthy Stay Fit”

Everyone in the community benefited from this project by adopting a healthy lifestyle.

Let us
Reflect



- _ Compare the above four cases – in which case the school was benefiting from the community. In which ones did the community benefit from the school activities?
- _ In case 3, the principal took the lead to approach the community. Who else can do that?
- _ What were the teaching-learning opportunities in the above cases?
- _ Has your school taken up any joint ventures with the local community?
- _ If yes, what were the challenges?
- _ How did you overcome them?



To Do

- _ Design a few activities where community is used as a resource in various teaching learning activities.
- _ Teachers can make use of several ways and means where the community becomes a teaching-learning resource.

In order to introduce the concept of different places of stay in Class IV, Saba (the teacher) thought that a ‘visit’ would be an appropriate strategy.



Let us Reflect

- _ What do we mean by a visit? Does it require going far away, a lot of time and money, and organisation? What does this mean for you – extra time, extra effort, extra responsibility?
- _ Visits do not necessarily mean going far away, or going to an unspoilt natural site or nature camp. A walk around the school or neighbourhood; a visit to a local historical or cultural or dilapidated monument, a few hours in a nearby public park or garden; a visit to a wholesale vegetable or grain mandi, visit to a well, visit to a panchayat bhawan and watching the proceedings of the panchayat – all these can become exciting educational opportunities.

Before selecting a particular place, Saba asked the students about the different places that exist in the neighbourhood.

Swati: There is a shop, which sells milk and vegetables.

Nitin: There is a house for horses too.

Saba (the teacher): What is the house for horses called?

Salim: Stable.

(the teacher): Good! What else is there?

Aarti: Ma’am, there is a dispensary as well. I took medicines from there when I was sick.

Swati: I have also seen a sabji mandi and a railway crossing.

After this interaction, Saba took the students outside the class in the neighbourhood. The students saw the places around the school – Mother Dairy, post office, bank,

Sabji mandi, railway crossing, night shelter for the homeless, dispensary and stable. While going around, some of the students narrated experiences and many of them kept asking questions about the different places they saw. Most questions were related to the night shelter.

Girish: Ma'am, this is a big house. Several families must be staying here.

Amrit: No, no, no. An uncle of mine who has come from the village stays here.

Paul: Ma'am, can anybody stay there? Can we also stay?

Saba : This is a night shelter. Would you like to go there?

Saba then went up to the Manager of the night shelter and sought his permission to take the students inside. The students saw a multi-story building with huge halls.

Arun: Such big halls! What happens here? I don't see a kitchen. Where is the food prepared?

Sanoj: Probably one large family stays in this hall. But where are their belongings?

Salim: I can see toilets and bathrooms.

Gita: I don't hear any voices. Where are the children? May be they have gone to school.

Salim: There is hardly anyone around. Where have all the people disappeared?

The students then came back to the school and after a round of discussion, decided to visit the place. Saba knew what to do next. She divided the class into three groups – one group of four students were assigned the roles of 1. Reporter/presenter, 2. Recorder, 3. Associate, 4. Interviewer. The roles were assigned based on the children's abilities, e.g. the ones who were good at writing were given the role of recorder. This group was asked to interview the manager and two people who stayed here and were still around. The interviewer posed the following questions to the manager, the answers to which were recorded by the recorder and the associate.

- 2 How long have you been working here?
- 2 Do people wishing to stay here have to pay rent? If yes, how much?
- 2 What facilities do you provide to the people staying here?
- 2 Who manages the night shelter?
- 2 What kinds of work do the people staying here do?

The following questions were posed to the people.

- 2 What is your name?
- 2 How long have you been staying here?
- 2 Do any of your family members stay here? Who are these members?
- 2 Do you consider the night shelter your home?
- 2 Do you pay rent to stay here? If yes, how much?
- 2 Where do you eat?
- 2 What facilities are provided to you here? Are you happy with the facilities here and the way they are managed? What changes would you suggest to make it a better place?
- 2 What work do you do?
- 2 Do you get a place here everyday? If not, what do you do?
- 2 Are you happy here?
- 2 Where did you stay before coming here?
- 2 Do you want to stay here throughout your life?
- 2 Where do you keep your belongings?
- 2 Do you carry your belongings everyday with you?

The other two groups were given the task of observation. Individual members of these two groups were asked to observe the following and prepare a report.

Sanitation: How many toilets altogether? Were the toilets clean?

Halls: How clean was the hall? Were the things in the hall neatly arranged or done haphazardly?

Availability of water: Was there water in the toilets? What were the provisions for drinking water?

Other facilities: What about provisions for electricity? How many fans were there in the hall? Was there proper lighting? Were the inmates provided mattresses to sleep on? Did they get blankets during winter?

Arrangement for tea and eatables: Did the inmates get tea in the morning? Was there any provision for providing them with food and eatables?

Children: Were there any students around? Were there any specific arrangements for them? What did they do during the day? Do they go to school?

Women: Did the night shelter have women inmates? What special facilities were provided to them?

Safety and Security: How safe was the night shelter? Was it secure to stay there?

Medical facilities: Did the shelter have any provision for providing medical facilities to the inmates? What did the inmates do in case of a medical emergency?

Emergency provisions: How equipped was the night shelter to handle emergency situations such as fire? Did you see any fire extinguishers around? Were the extinguishers in functional condition? Did the inmates know how to operate them? Was there any fire alarm in the building?

Exits and entries: How many exits and entries did the night shelter have? Were there enough exits so as to vacate the night shelter quickly in case of an emergency? How user-friendly was the overall structure? What was the condition of the building?

In the post-report presentation, several issues were raised and discussed in the class. One of the themes of discussion was migration. Why do people leave their villages and come to towns and cities? So now you see how you started off with one theme in mind but went on to sensitise the students about other related issues as well.

The night shelter is one place where Saba took the children. Students expressed the willingness to go to the other places to learn more about them.

Saba then had a discussion with the students on when you go outside your city/town, where do you stay? The students narrated their experiences of staying at relatives houses or in a *dharamshala* or a hotel, etc. Saba then gave an assignment to the students to write about their experiences of staying in these places.

For the children, visits can help to break the “subject” compartments and show how all are seamlessly integrated in real-life, e.g. a visit to a wholesale vegetable market would include understanding of biodiversity, economics, transportation, market forces and different societal context, such as class and occupations. What seemed to be fragmented information in different textbooks blends to an integrated and inter-related picture.



Let us
Reflect

- _ What were the opportunities for learning? What kind of learning has taken place?
- _ Did you have opportunities for assessment of the students (not just when they present their reports, but also during the visit, e.g. trying to improve upon the questions being asked)?
- _ Did the students enjoy the visit? Did it provide a hands-on experience to the children? Was it connected to their daily life (it certainly provided a change from the daily monotony of the classroom)?
- _ Do you think environmental concerns were addressed? If yes, what were those?
- _ What teaching-learning strategies besides visit were incorporated in the above-mentioned example? Was this strategy different from the rote learning process?
- _ Do you think a visit is required for every concept?
- _ Were there any opportunities for skill formation?

For the teacher, taking students outside the classroom can help enrich and support classroom teaching and learning. The challenge is how to plan such visits so that they do not remain just an ‘outing’ or picnic but become valuable opportunities to “connect knowledge to life outside school” and help to enliven and complement the curriculum.

As a teacher you would be wondering when to organise visits. You could organise them as and when required and also when it is most suited for understanding a theme/concept. You need not wait for special occasions to organise these visits. The other concern would be how to plan such visits. This would require some preparation on your part so that the exercise becomes a meaningful experience. You can do some preliminary planning but one must be prepared to learn from trial and error. During the course of planning, you can make a preliminary visit to the proposed site. You will also need to plan different activities that can be carried out by the students before, during and after the visit. Besides, do not forget to orient the students before the visit so that they are not clueless

about the aims and objectives of the visit. Also apprise them of the dos and don'ts that they need to follow during the course of the visit.

Think of some concepts around which you can plan a visit. You can choose whatever is in your neighbourhood. Following are some suggested activities in this direction

- Activity 1** Ask students to identify people from their neighbourhood who have been a witness to events of historical significance (Independence struggle, Asian Games, World Wars, Emergency, etc.) Probe them about their experience in those times. Students could also be asked to trace the history of their locality or people.
- Activity 2** Find suitable occasions to invite skilled workers such as carpenters, masons, weavers, potters, etc. from your neighbourhood and allow them to share and demonstrate their expertise. They may be engaged as mentors to guide students during art, craft and work education activities.
- Activity 3** Students can collaborate with the community to set up museums/ corners where local and traditional artefacts/items may be assembled.
- Activity 4** Students may conduct a health survey in a particular area of their neighbourhood to know about the diseases that people of different age groups suffered during the last six months. They may be encouraged to identify the most common forms of illnesses and look for the possible causes. For example, diarrhoea, dysentery, typhoid, etc. may be caused due to contaminated water, then, sources of water, its storage, purification and handling could be some of the aspects that students can work on.

To Do



- In the above example of a visit, identify the specific opportunities when other strategies such as survey, interview and observation were used?
- Plan some situations in any curricular area(s) where students can conduct surveys or interviews.
- Detail out the steps from planning to the execution. What would be your role in the whole process?

Let us Reflect



Community can be effectively used as a learning resource by encouraging the students to gather information about different concepts related to their curriculum from their parents, grandparents and other people in the community. They get a chance to learn from the experiences of the community people. Knowledge of the local history, agricultural and other occupational practices of the past, impact of technology on the lives of people, rituals and other cultural practices of people of diverse communities can also be a rich source of learning.