

3

Good Maintenance of the Immediate Surroundings of Your Home

It is essential to maintain the immediate surroundings of one's home well to lead a healthy life. The basic components of the immediate natural surroundings of your home are land, water, soil, plants, animals and the atmosphere. When man develops his knowledge, his influence towards the basic components of the environment too increases. As a result of this, there may be various problems arising in the immediate surroundings of your home. Therefore, it is your duty to contribute to the conservation of the environment, by keeping the immediate surroundings of your home in a healthy condition.

The main objective of this chapter is the identification of the basic natural components of your immediate surroundings and to give you an understanding about the proper maintenance of it.

Land

Figure 3.1 shows how the land which is a basic component of the environment, is utilized in various ways.

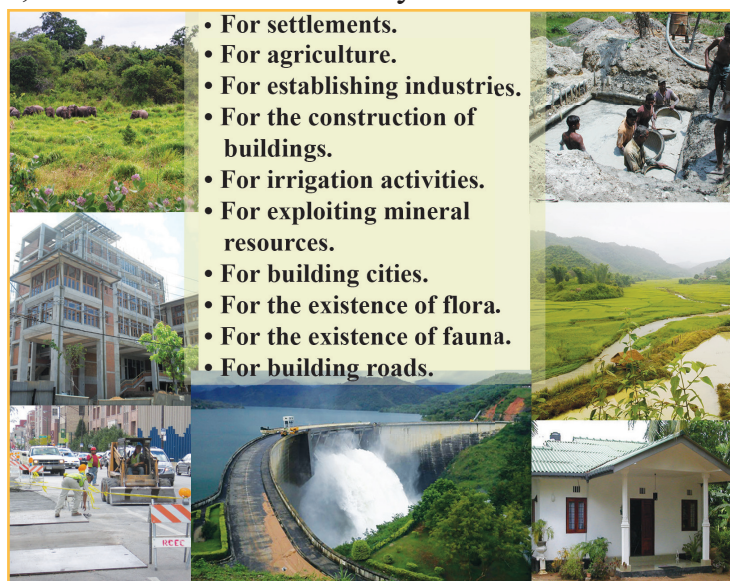


Figure 3.1
Land resource and its utilization

You can maintain the immediate surroundings of your home/school well, if you prepare the home garden and school garden according to a plan and use them properly.

Pay regular attention to the following facts regarding the proper use of land

- Find the places where soil erosion occurs and grow cover crops, build stone ledges or make drains.
- Cover the land with chaff, coir dust or straw.
- Dig a compost pit and make fertilizer with kitchen waste and dry leaves.

When the available resources are utilized in the immediate surroundings of your school/home, various changes may occur in the environment. Therefore, you must be careful to do those changes in a manner which will not harm the environment.



Figure 3.2
Utilization of land in a proper manner

Assignment

1. Select a portion of the land of your home or school and prepare a plan to use it in a proper manner.
2. Implement the plan with the advice of your teacher.

Figure 3.3 indicates how land is used in an improper manner and its effects.



Activities

1. Mention different ways of using the land in the immediate surroundings of your home.
2. Mention three harmful effects which have occurred to the land and suggest steps that can be taken to minimize them.

Water

Water is a natural resource which is essential for the existence of living beings. Water is used for various purposes. Figure 3.4 indicates instances where water is used for different purposes.



Figure 3.4
Various occasions where water is used

Activities

1. Observe figure 3.4 and mention the occasions where water is used.
2. Mention the sources from which your householders obtain water to fulfil their needs.
3. State the occasions of water wastage with examples when water is used.

Figure 3.5 indicates ways of using water in an improper manner. Accordingly, various problems may occur due to water wastage.



Figure 3.5
Occasions where water is used in an improper manner

Table 3.1

The problems of water shortage and methods of water conservation

The problems arising with water shortage	Methods of water conservation
<ul style="list-style-type: none"> • Shortage of pure drinking water. • Threat for the existence of living beings. • Failure of agricultural and industrial activities. • Spread of diseases. • Soil infertility. • Failure in generating hydro electricity. 	<ul style="list-style-type: none"> • Prevention of misuse and wastage of water. • Consideration given to careful use of water. • Prevention of polluting drinking water. • Protection of the forest cover and motivation to plant trees. • Conservation of water resources and prevention of water pollution. • Making people aware of the importance of water conservation. • Using waste water in domestic use for another purpose. • Training people to take the maximum use of rain water tanks.

Activities

01. Observe figure 3.6 and write three ways that cause water pollution.
02. Mention three harmful effects of water pollution.
03. Present four strategies that could be used to prevent water pollution.
04. Write two steps that could be followed to prevent improper use of water.

Figure 3.6 shows the occasions where water gets polluted due to various human activities.

Water Pollution



Figure 3.6
Occasions of water pollution in the immediate surroundings

Air

Air, as well as water, is an important factor for our survival. Among the gases in the atmosphere, both oxygen and nitrogen are important. Oxygen is required for breathing and nitrogen is needed for the growth of plants. The air around us gets polluted due to various human activities. Look at figure 3.7. Accordingly, the results of air pollution affect man as well as animals and plants in a harmful manner.

Air Pollution



Figure 3.7
Occasions of air pollution

Activities

01. Observe figure 3.7 and name the occasions where air pollution can occur.
02. Mention the difficulties you have to undergo when you breathe polluted air.

Effects of Air Pollution

Two harmful effects due to air pollution are mentioned below.

1. Diseases related to the respiratory system.

- Cough
- Lung cancer
- Catarrh
- Asthma
- Severe headache

2. Occurrence of acid rains.

- Water pollution.
- Destruction of aquatic organisms.
- Destruction of forests.
- Damage to soil.

Assignments

01. Complete the following table with the information related to human activities that cause pollution of land, water and air in the immediate surroundings of your home and school.

Components of the natural environment	Irregular human activities	Effects of these activities	Steps that could be taken to minimize damage/pollution
Land			
Water			
Air			

02. Design posters on the theme “Prevention of pollution of air, water, land and conserving them” and display them in the school premises.

Energy

We use various sources of energy to fulfil different needs, from the moment we wake up in the morning. Accordingly, the energy helps us to fulfil various tasks like preparation of food, cleaning, for communication devices, lighting up and transportation. The sun is the basic source of all the energy sources we use.

In ancient times, man used his manual power but later, he got the support of animals to do various activities. Man and animals get the strength to do these activities from food. Machinery obtains the necessary power from fuel, electricity or from other sources.

Reasons for the increasing demand for energy

- Increase of population.
- Increase of consumer needs.
- Progress of the industrial activities.
- Development of transportation.
- Improvement of living standards.

Hydro-electricity, mineral oil, natural gas, solar power (solar cells) and firewood are the energy sources that can be used for various household purposes. You should utilize them efficiently, systematically and economically when you fulfil the needs at home.

When you use power at home,

- Switch on the bulbs only at the necessary place and time.
- Use more efficient electric bulbs like CFL, (Compact Fluorescent Lamp) and LED (Light Emitting Diode).
- Decrease the time period when the door of a refrigerator is kept open. The number of times it is opened should also be limited.
- Iron all the necessary clothes whenever possible at one time.
- Use firewood-hearths that do not waste heat.
- After cooking, switch off the cooker or put out the hearth (firewood hearth).
- When using the gas cooker, use specific utensils suitable for the task.
- When using vehicles, attending to several tasks according to a plan during a single journey for the economical use of fuel.

Different types of energy sources and occasions where they are used

01. Write the instances where energy sources shown in figure 3.8 are used.
02. Name the energy sources used in your home.
03. Mention two occasions of energy wastage when they are used.

Economical use of energy sources

The light we get from a bulb of 60W is provided by a CFL bulb of 11W produced according to the accurate standard. We can save the power of 245W if we use five CFL bulbs of 11W instead of using five 60W bulbs.



Figure 3.9
Compact Florescent Lamp (CFL bulb)

The light we get from a bulb of 100W can be obtained from a LED bulb of 9W produced according to the accurate standard.



Figure 3.10
Light Emitting Diode (LED bulb)

The efficient firewood hearth helps to cook fast, easily and safely with the use of less firewood.

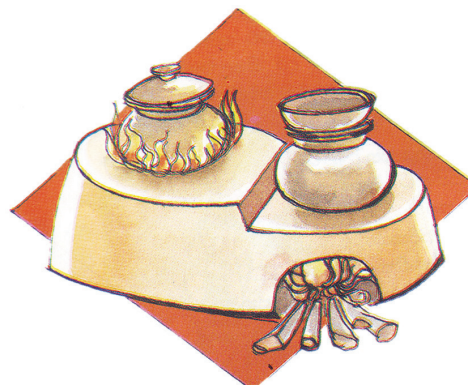


Figure 3.11
An efficient firewood hearth

Bio-gas is known as an important alternative source of power which is used for energy needs. Figure 3.12 indicates a bio-gas unit prepared for domestic consumption of energy with a systematic management of waste material. The kitchen waste, plants like *salvinia*, *monochoria*, *gliricidia* which are found in the immediate surroundings of your home and small pieces of hay, liquid cow dung can be used for this purpose.

The efficient firewood hearth is used to cook meals quickly. You can get electricity needed for your home from this bio-gas unit. The waste that is removed from time to time too can be used as a rich manure for the vegetable plots in the home garden.



Figure 3.12
A bio-gas unit and its benefits

You can fulfil the energy needs of your house by obtaining solar power through solar cells which absorb solar energy. Although it costs a higher expenditure, solar power does not cause environmental damages when compared to the other energy sources.



Figure 3.13
Solar cells

Activities

1. Read the following statements. Mark the correct statements with a tick (✓) and the wrong statements with a cross (x) in the relevant box.

- | | |
|---|--------------------------|
| 01. Bio-gas can be generated using waste material. | <input type="checkbox"/> |
| 02. Although we can obtain light to our houses from bio-gas, we cannot use it for cooking. | <input type="checkbox"/> |
| 03. It is not suitable to put the waste matter removed from the bio-gas unit into the vegetable plots in the home garden. | <input type="checkbox"/> |
| 04. Using one switch to light many bulbs is a way of conserving electricity. | <input type="checkbox"/> |
| 05. Using Fluorescent Lamps (CFL) is a way to reduce the electricity bill. | <input type="checkbox"/> |
| 06. We can get petrol, diesel, as well as gas from crude oil. | <input type="checkbox"/> |

2. Name the alternative energy sources that can be used to provide power for electric bulbs, TV and the hearth.
3. Mention three ways that can be adopted by you and your family members to save electricity in your home.

Assignment

Time	3.30 pm – 6.00 pm					6.00 pm – 9.00 pm					9.00 pm – 10.00 pm				
	Number of lighted electric bulbs	Duration for which the TV set was switched on	Period during which the electric iron was used	Duration for which the electric fan was used	Period during which the equipment were used for preparation of food	Number of lighted electric bulbs	Duration for which the TV set was switched on	Period during which the electric iron was used	Duration for which the electric fan was used	Period during which the equipment were used for preparation of food	Number of lighted electric bulbs	Duration for which the TV set was switched on	Period during which the electric iron was used	Duration for which the electric fan was used	Period during which the equipment were used for preparation of food
Day															
Monday															
Tuesday															
Wednesday															
Thursday															
Friday															
Saturday															
Sunday															

Use the table above and note down the occasions of using electricity in your home in the above table. Use the data collected and answer the following questions.

1. What is the electric appliance that is used most in your home?
2. Write the names of electrical appliances used for the longest period of time according to the order.
3. According to your note, what are the other factors you can present about the use of electrical appliances ?

4. What are the other types of energy sources used in your home?
5. What are your suggestions to save electricity at home?

Disposal of Waste Materials

Many things are disposed from our homes as well as from the immediate surroundings of home and school. These discarded things are called waste materials. These waste materials can be grouped as domestic, agricultural and industrial wastes according to their origin. Usually, we collect this waste material in a certain place in the home garden or put them into a pit or add them into a heap of garbage. Yet, the disposal of non-decaying waste materials in this manner is harmful to the environment. The disposal of waste material has become a problem in the urban environment due to over population and limited space. The improper disposal of waste material causes pollution of air, water and land in the immediate surroundings of your home. Therefore, we have to pay attention to prevent the damages that occur with these activities. For this,

- Reuse - Reusing the items that can be used again and again.
Example - Textbooks, Packing boxes (like ice-cream containers), glass bottles etc.
- Recycling - Recycling the non - degradable materials like polythene and plastics. An extra income can be earned by collecting them, sorting and handing them over to recycling centres or collecting centres and goods are produced from them.
- Redusing - Minimizing the use of non- degradable items.
Example- Polythene packing, plastic items etc...
- Making different items using discarded waste material.
Coconut shells – spoons and curios
Electric bulbs – lamps
Pieces of cloth – door mats, cushion covers
- Preparation of a bio-gas unit / compost pit using kitchen waste, agro waste and dried leaves.

- Reduction of food waste by preparing the food in sufficient quantities and to cater to the appetite. It also helps to maintain the family budget in a better way.
- Proper disposal of waste materials.



Figure 3.14
Proper disposal of waste materials

Activities

1. Prepare a list of waste materials disposed from the immediate surroundings of your home. Categorize them according to the following table.

Domestic waste	Agro- waste	Industrial waste

2. Group them as degradable and non-degradable waste materials.

3. Mention the ways of earning an extra income by using them.
4. Suggest the actions that can be taken to minimize the amount of waste materials collected in the environment.

Assignment

Prepare a compost pit collecting the degradable waste material discarded from home and home garden and make use of the manure for house plants.

Glossary

• Mineral resources	- மினரல் ஸார்ஸஸ்	- கனிய வளங்கள்
• Conservation	- கன்ஸர்வேஷன்	- பேணிக் பாதுகாத்தல்
• Drought	- டிரை	- வரட்சி
• Floods	- ஫்லூட்	- வெள்ளப்பெருக்குகள்
• Soil erosion	- சோல் லாஸ்ட்	- மண்ணரிப்பு
• Air pollution	- ஏர் ப்லூஷன்	- வளிமாசடைதல்
• Acid rains	- அசிட் ரைன்	- அமிலமழை
• Energy	- எர்ஜி	- சக்தி
• Communication	- கம்யூனிகேஷன்	- தொடர்பாடல்
• Solar power	- சோலர் பவர்	- சூரியசக்தி
• Solar cells	- சோலர் செல்ஸ்	- சூரிய கலங்கள்
• Energy sources	- எர்ஜி சோர்ஸஸ்	- சக்தி மூலாதாரங்கள்
• Bio Gas Unit	- பைோ கேஸ் யூன்ட்	- உயிரியல் வாயுப் பகுதி
• Recycling	- ரைசைக்லிங்	- மீள் சுழற்சி
• Agricultural lands	- அகிரிகல்டுரல் லாண்ட்ஸ்	- விவசாய நிலங்கள்
• Water consumption	- வாட்டர் கன்ஸம்ப்ஷன்	- நீரின் நுகர்வு
• Sustainability	- சஸ்டைனபிலிட்டி	- நிலைபேண்
• Forest cover	- ஫ார்ஸ்ட் கவர்	- காட்டுப்போர்வை
• Alternative energy	- அல்டர்னேட்டிவ் எர்ஜி	- பதிலீட்டு சக்தி
• Compact Fluorescent Light	- கம்பாக்ட் ஫்லூரெஸ்கன்ட் லைட்	- பனன் - கச்சிதமான ஒளியுள்ள மின்குமிழ்
• Light Emitting Diode	- லைட் எமிட்டிங் டைட்	- ஒளிரும் வெப்ப மின்னணுக்கருவி