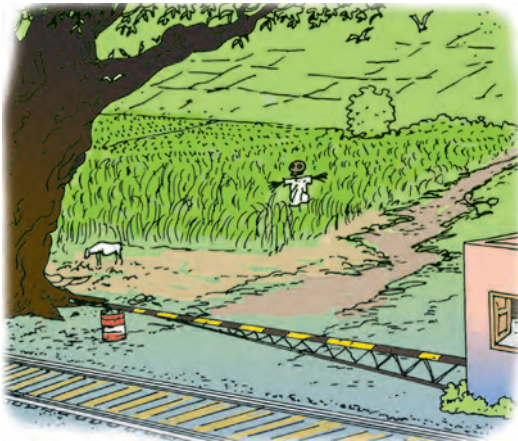
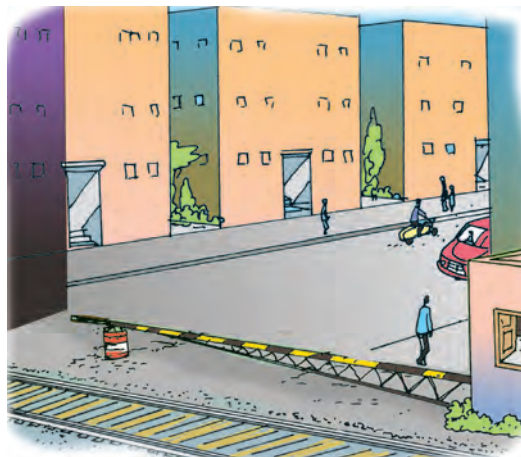


24. Are we endangering our environment ?



Twenty years ago



Today

- Twenty years ago, there were open fields around the city. Today there are new colonies there. There was a big spreading tree near the railway gate. Different kinds of birds and insects lived happily in the tree.
- Where have those birds and insects gone today?



City



Village

- What similarities do you find between a city, a village and a forest?
- What differences do you find between them?



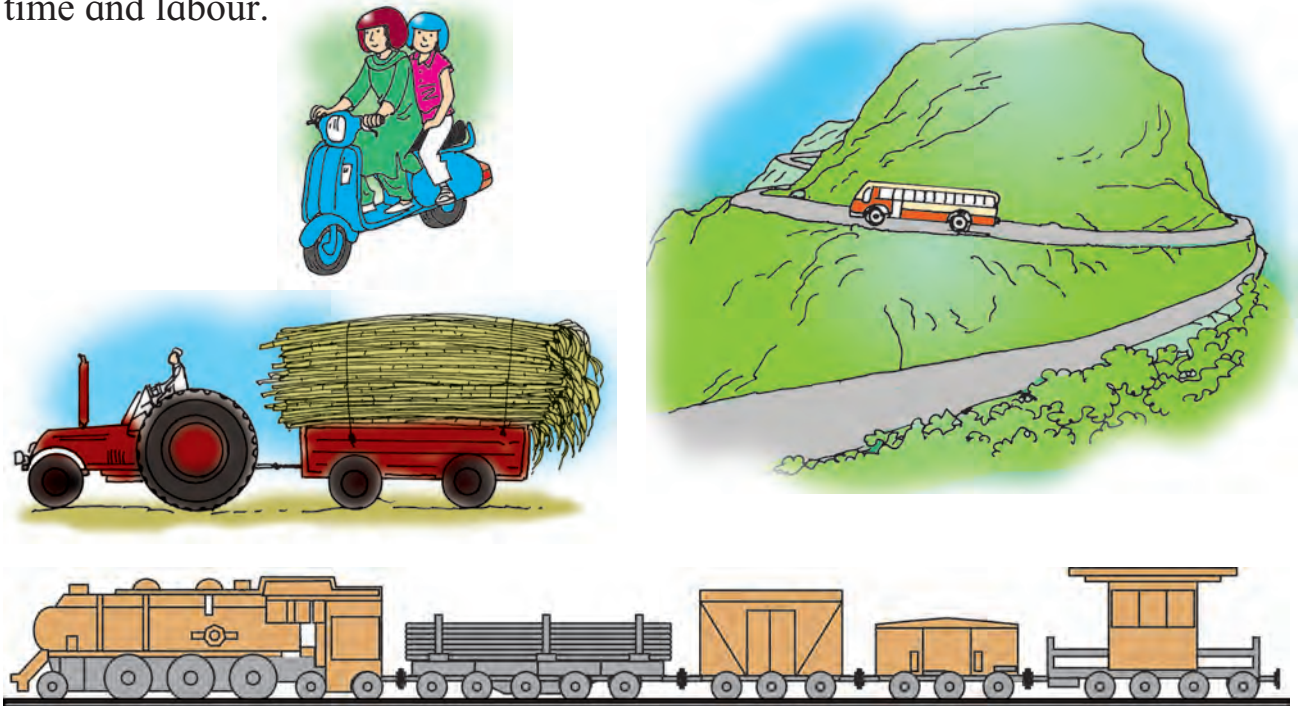
Forest

The progress made by human beings

Man is more intelligent than all other animals. He makes use of his intelligence to make his life more comfortable. All living things make use of what they find in their environment. But only man can carefully study the things in the environment. He produces new things from materials in the environment. Let us see how!

This is a story of about 150 years ago. Researchers found out how to use mineral oil. Man now had a new and useful fuel to use. He then invented some vehicles that would run on this new fuel. These include the motor-car, bus, truck and scooter. They also developed railway engines that would run on coal.

Previously, if one had to travel to another town, one had to walk or ride horseback or on a bullock cart. Various animals were used to carry burdens or to draw the carts. Now, we go by bus or railway trains. That helps to save both time and labour.



We take up various schemes to make our life easier and prosperous. We build dams to satisfy our need for water. We build roads and railways for transportation. Factories are set up to manufacture all the things we need. We build houses so that everyone can have a shelter of their own.

The things we need to do all this have to be obtained from the environment. We get them from places like forests, farms and mines. Water is used in the factories and then the waste water is let into rivers. All this has an effect on the environment. If the environment is harmed, it has harmful effects on all living things. And man is no exception.

Growth of the population



Find out.

- A census was done in 1951. What was the population of our country then?
- A census was done in 2011. What was the population of our country then?

In the last sixty years the population of our country has tripled. It is still growing. So, the demand for all those things that we need to take from the environment has increased many times over.

People could not get employment in villages. So they began to leave and to go to the cities in search of work. Cities became crowded. The population in the cities grew beyond limits. Cities began to experience a shortage of water. There were not enough houses for everybody. So people could not find a place to stay. There used to be open spaces and fields around the cities. New colonies came up there. And to build these new houses and colonies, the trees there had to be cut down.

In cities, one has to travel long distances to get to work. So people in cities began to buy vehicles that run on fuels. In all big cities, these vehicles spew smoke as they are driven around. The smoke mixes with the city air. As a result, people began to have breathing problems. Instances of asthma and other lung disorders began to increase.

Trees have been banished from cities. So, birds do not find places to build their nests. They also find the smoke in the city air troublesome. They are no longer sure of getting water when they are thirsty. So there are fewer and fewer birds in cities now. The number of butterflies and other insects is also falling.

Because of the increasing population, the drainage system in cities fails sometimes. Then water collects in the midst of living areas. Mosquitoes grow in it. They spread diseases like malaria, dengue, filaria, chikungunya.

Do you see how the increase in the population spoils the life we lead in cities?



Ground water is drying up.

Water is an important need of all living things. We use water for keeping ourselves and our houses clean, for cooking, farming, industry and construction.

As the rainy season ends, the water in rivers decreases. Water in wells too recedes. Their water barely lasts up to the month of March the following year. Later in summer, many villages face a serious scarcity of water.



Do you know ?

People settle only where water is available from one source or the other.



Dam



Hand-pump

The population keeps growing. The rainfall, however, remains the same. So, there is a shortage of water. Much of rainwater flows away unused. So we began to build dams to store rainwater and use it later.

Some people began to use borewells rather than draw-wells and to use hand-pumps to lift water. Then, pumps that worked mechanically on diesel or electricity were invented. Now the use of such pumps has become widespread.

The population has so greatly increased that now every summer we face severe water scarcity.

Another problem that the population growth caused was that of availability of food. The food produced in the country began to fall short of the needs of the growing population. So, our scientists developed improved methods of farming. Previously, farmers would grow only one crop in the year. Now, they can take

two or even three crops every year. As a result, food production increased but, so did the demand for water for agriculture.



Use your brain power !

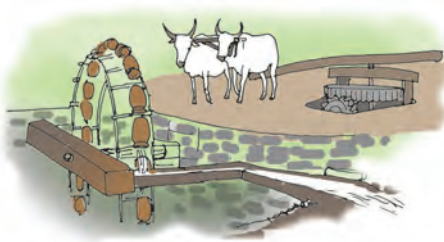
Previously, water was needed for farming only during the rainy season. Now it is needed for eight months in the year. Where three crops are taken, it is required all year round. It only rains during the rainy season. Then, from where do we get the water for farming and for all our other needs?

We experience a scarcity of water soon after the rains. Then from where do we get water for the fields in summer and the winter?

Rainwater that has seeped into the soil can be used in this situation. Water found in wells and borewells is nothing but rainwater that has seeped into the ground.

Let us learn about some traditional methods of drawing water from wells.

In the Konkan region, there are groves of coconut, betelnut and bananas. They are watered using the waterwheel to lift water from the wells. A horizontal beam is placed over the mouth of the well. It supports a large wooden wheel which turns around. This wheel is called the '*rahat*'. Several pots (*gadga*) are fixed on the wheel. When the wheel turns, the chain of pots turns with it. One by one, they dip into the water in the well and get filled as they come up. As the wheel turns, each pot turns over and the water gets poured into a channel. From there, it is taken to the groves. The waterwheel is turned with the help of a bullock or a male buffalo. Such waterwheels or '*rahat-gadga*' are still in use in some places in the Konkan region.



Rahat-gadga



Mot

In other parts of Maharashtra, a *mot* was in use for lifting well water. A *mot* is a large leather bag. It is lowered into the water at the end of a rope. When it is full, it is lifted out of the well. The water is used for the fields. Bullocks move to and fro on a ramp to help lower the bag and lift it. The *mot* is used in very few places, now.

Nowadays, fields are watered using diesel or electric pumps. These mechanical pumps can lift many times more water than the *mots* ever could. Besides, because more than one crop is taken every year, the pumps are used to lift water even after the rainy season. As a result, the water stored underground is getting used up rapidly.



What we have learnt –

- Vehicles like motor-cars, buses and scooters that run on mineral oil were invented. So, too, were railway trains. It made travelling easier.
- We build dams, roads and railways. We set up factories and build houses. We release waste water from factories into rivers. This causes harm to the environment as well as to the living things in it.
- As the population keeps growing, the demand for things we get from the environment also grows in leaps and bounds. Cities became crowded as people left their villages in search for work. Trees were cut down to build new houses. The number of vehicles increased. Their smoke began to cause breathing disorders.
- As trees are felled, birds do not find nesting places. There is smoke too. As a result, the numbers of birds, butterflies and other insects in cities are falling.
- The greater the population, the greater is the demand for foodgrain. Farmers now take multiple crops. The demand for water, too, increases.
- Previously, in Konkan, the waterwheel was used to draw well water while the *mot* was used elsewhere in Maharashtra. Now, pumps are used for the purpose in most places. So groundwater gets used up rapidly.



Always remember –

While taking things we need from the environment, we must take care not to harm the environment.



Exercises

(A) What's the solution ?

Your uncle who lives in Buldhana has an old scooter. It gives out a lot of smoke when it is started.

(B) Make a list

Make a list of vehicles that run on petrol or diesel.

(C) Think and tell.

1. Waste water from a factory is let into a river. What harmful effects does it have on the people in the neighbourhood?
2. How did the discovery of electricity make human life more comfortable?

(D) Answer the following questions.

1. Which are the different vehicles that man has invented?
2. What has to be done to set up new colonies?
3. Which diseases do mosquitoes spread?
4. How has taking more than one crop in a year affected groundwater?

(E) Fill in the blanks.

1. In summer, there is a of water in many villages and cities.
2. A bullock or a male buffalo is used to turn the
3. is more intelligent than all other animals.
4. A *mot* is a large leather
5. People leave their villages for the cities in search of

(F) Find out.

Obtain information about the following :

1. Using diesel and petrol sparingly
2. Saving water

Write down the information you obtain and share it with your classmates.

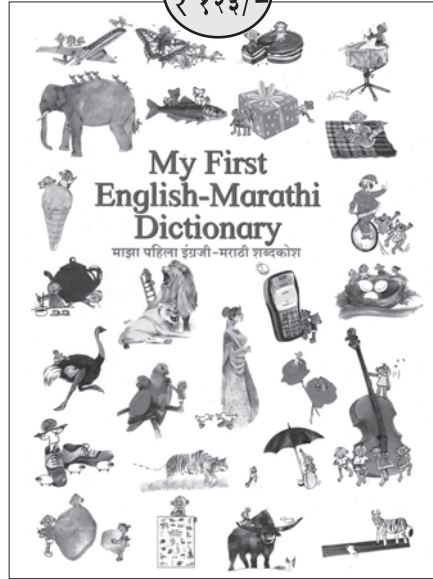


Activities



- Go for a walk in your surroundings and observe the changes that have taken place there.
- Make a model of a waterwheel.

- विज्ञानावर आधारित इयत्ता १ ली ते ८ वी साठी संदर्भ साहित्य.
- English Dictionary : Fulfil with Illustrations and Explanation.
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