

Points to be studied

- 17.1 Garbage (Waste material)
- 17.2 Types of garbage
 - Biodegradable waste
 - Non-biodegradable waste
- 17.3 Methods of disposal of garbage
 - Composting
 - Vermicomposting
 - Land filling
- 17.4 Reuse and Recycle

17.1 Garbage (Waste material)

From your home to school, market, park, on way to the farm and its surroundings you must have seen various types of garbage lying around. Look at the figure 17.1 given below. From where is this garbage received? Let's learn.

Polythene bag, pebbles, disposal bottles and plant leaves, rotten food items cause garbage. Garbage is the result of natural and social activities of humans.



Fig. 17.1: Garbage (unusable things)

Activity - 1

You might have observed garbage outside the houses, schools and in market. Look at it carefully and make a list, write it down in the following table:

Table 17.1: Garbage and types of garbage

S.N.	Domestic garbage	Community garbage
1	Vegetable peels	plastic bag
2	Paper	paper bag
3	Leftover food
4

We throw away unnecessary and useless material as a consequence of our daily routine. This useless(unnecessary) material is called Garbage.

Activity - 2

You must have noticed different types of garbage like polythene, fruits and vegetable peels, leftover food, pieces of glass, wrecked plastic and metal containers, scrap paper, dirty water, human excreta, empty drug bottles, plastic bags, syringes, gloves, bandages, expired medicines, old newspapers, damaged goods, leaves of plants, disposable cups, plates, glasses etc. Write down this kind of useless material in following table 17.2:

Table 17.2 Garbage found on various places

S.N.	Kitchen Garbage	Hospital Garbage	Garbage at public places
1			
2			
3			

On the basis of above table we can find out the garbage of different places.

17.2 Types of Garbage (Waste) materials:

You must have observed various types of garbage materials. There are some materials that can be re-used while others cannot be re-used. On this basis we can divide the waste materials into two parts:

- (1) Biodegradable waste Material
- (2) Non-biodegradable waste Material



- (1) **Biodegradable waste Materials:** The waste material which is decomposed by the bacteria. The substances such as leaves of plants, fruit and vegetable peelings, meat, waste paper, cloth, excreta, cow dung etc. decompose fast and get mixed with soil and are known as **Biodegradable waste Materials**.
- (2) **Non-biodegradable waste Materials:** The waste material which is not decomposed by micro-organisms & thus not mix with soil, pollute the surroundings such as paint, glass, pieces of metal, plastic goods etc, are called **Non-biodegradable waste materials**.



Fig. 17.2: Biodegradable waste



Fig. 17.3: Non biodegradable waste

The time of decomposition of each material is different. Some material decomposes within 10 days, some within 4-5 months and some take 500 years to decompose. Different types of plastic take millions of years to decompose.

On the basis of states different waste materials can be subdivided into solid, liquid and gas as follows:

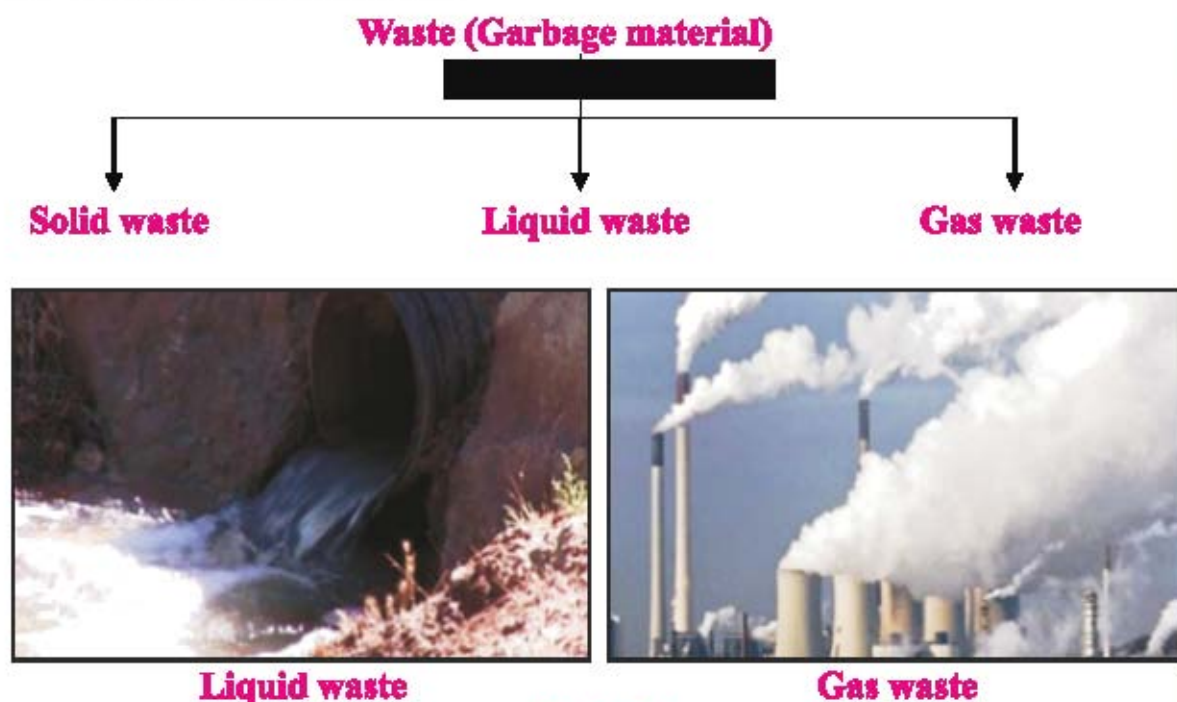


Fig. 17.4

Activity 3

Look at the open drain near your home, street, school, road side. Look at the flowing (unwanted) water and other materials in it.

You'll see the solid waste as plastic, glass pieces, fruit and vegetable peels etc, fluid (liquid) waste like as polluted water, oil, paint, sewage etc. in it. Similarly smoke from vehicles, chimney of industrial plants and factories are gaseous wastes.

who is responsible for various types of waste increasing on the earth? Definitely we are responsible for it. At present, our love and attachment towards the environment has diminished. Instead of using naturally available products we have started excessive use of man-made things which is destroying the natural beauty of the environment, as well as polluting it. We observe garbage and polythene scattered everywhere which has given rise to many grave problems. One of the reasons of untimely death of cattle is due to eating polythene bags along with garbage. Polythene traps the outlets of drains and blocks them and water tends to spread all over these places in the city. During



rainy season, due to this blockage of drains putrified materials spread over the public places causing obnoxious stink. This is harmful for our health because such a place becomes the dwelling of mosquitoes and harmful micro-organisms.

Let's know about the methods of disposal of waste and reuse.

17.3 Methods of disposal of Waste (garbage) material:

What happens when plants wither?

Where does the sewage of your home go?

What happens to the plastic waste throw away?

Dustbins are placed by Municipal council, Zila Parishad at various places.

Where is this waste carried and what is done of this waste?

The disposal of this waste (garbage) is done by various methods, some of which are as follows-

(1) Compost:

Waste is collected and **Biodegradable** and **Non-Biodegradable** waste is separated. From Biodegradable waste materials like fruits and vegetables peels, excreta-dung, plant leaves, grass, rotten material etc., manure is prepared. This type of material is put into a pit. Pits are made in a shade. Then these pits are covered by soil such that it remains moist and airy. After few months this material is decomposed by bacteria and converted into compost which can be used in fields. It is called as **Compost**. The Cow and buffalo dung used in **Gobar gas** plant gets converted into compost after some time fuel gases are derived from it.



Fig. 17.5 Gobar gas plant



Fig. 17.6 Vermicomposting

(2) Vermicomposting:

Red earthworm is specifically added to the waste. These earthworms feed on organic matter. The excreta of earthworm is high quality compost and is called vermicompost and the process is called vermicomposting.

(3) Disposal of solid waste substances:

Solid waste substances are collected in a pit outside the city or town and then covered with a layer of soil. Solid waste degrades after some time. This process is called land filling.

Activity -4

What do you do to stored useless things in your home? You may have noticed that we sell them to ragman. Go to the junk shop and observe those things. What he does with unusable things?

Ragman separates different types of things from unusable things.

He separates Iron, copper, aluminum, newspaper, cardboard, note book, book, Electric wire, plastic materials.

Where or to whom does junk dealer sell these things?

You'll see that junk dealer separates different types of unusable materials from the and sends them to related factories for recycling. Because of recycling we get these material back as different usable products. In this way the conversion of unusable things into usable things is called recycling. The disposal of solid waste occurs by this method.

17.4 Disposal of non biodegradable waste:

Pieces of plastic, glass pieces, disposable cup, iron, aluminum and copper utensils are included in non-biodegradable waste. The decomposition of these substances is very slow in nature.

Three methods- 3 R(reduce, reuse, recycle) are used to dispose these unnecessary waste materials. These are-

- (1) **Reduce** : Reducing the quantity of unusable substances, such as broken tin box, plastic bottle, broken pot etc can be utilized in domestic purposes like growing flowers and vegetables into them. By separating such material from garbage we can reduce the quantity of unusable material.
- (2) **Reuse** : Separate such things from unusable things that can be reused. Unusable products like as batteries, metal utensils, iron scrape, broken tins, glass bottles, jute contents etc can be used for other domestic purposes.



- (3) **Recycle:** Plastic and glass waste material is separated from unusable material and send to factories for recycling and usable materials are synthesized from them. During recycling coloring agents are added to these. Specifically such material is used to make bags, packing rags, containers to preserve food stuff.

Waste Management:

The process of systematical disposal of waste is called waste management.

You manage household waste keeping three separate containers. Collect biodegradable waste like leaves, fruits and vegetables, fruits and vegetable peels, waste food material etc. in a green container. Collect non-biodegradable waste material such as plastic materials, pieces of glass and ceramic pots in second blue bin and collect toxic drugs, wastage drugs, battery, cell, useless medicines, paint, oil-syringe, cosmetics in third black container. Have you managed waste like this? What benefits do you have from it? Discuss this with your family and share these benefits of waste management to other students.

You might have noticed in village / town / city /slums, that there is no provision of clean and safe toilets. People defecate in open. Sewage is scattered here and there or flows around the settlements.

Now a days, under the Swachh Bharat Abhiyan hygienic toilets are being laid down in schools, villages and public places like markets and along the side of roads.

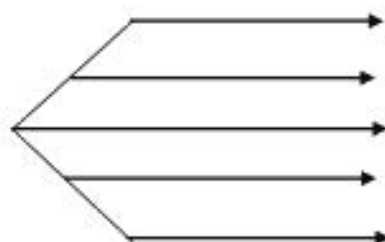
- Have you ever thought why is this being done? Why are they needed?
- What is the harm of open defecation?
- You might have seen people defecating in open near railway stations, bus stands around in slums and fields. Open defecation causes dirt and foul smell to spread which pollutes the environment with swarms of flies and mosquitoes.
- What is the impact on health of individuals who reside there? Students discuss with the teacher.

17.5 Effect of Garbage (waste) on health

If we deal with garbage disposal systematically than we can keep our home, street, neighborhood, schools and public places clean. As a result we would be safe from being infected by diseases like asthma, dengue, viral fever,

diarrhea, malaria, jaundice, etc. "Healthy body, harbors healthy mind". By doing so, we may contribute to make India clean, healthy and beautiful country and also efficiently discharge our duty. We should try to reuse unusable materials. Always collect garbage in dustbins and stop people who throw garbage all around and persuade them to throw garbage in dustbins.

Multiple
problem
through
polythene



Environmental Pollution
Cause of death of Cattle
Danger to fertility of soil
Hurdle in drainage system
Prevention of rain water from absorbing the soil



Fig 17.7 : Dust bin

Keep your village and city clean.



What Have You Learnt

- Humans throw unusable things during their daily routine. Such material is called garbage. i.e., the substance is called waste.
- Waste (waste) is of two types - Biodegradable and non biodegradable waste.
- Waste (garbage) can be divided into solid, liquid and gas.
- Disposal of waste can be done by various methods like composting vermicomposting, land filling, biogas.
- Due to Garbage and sewage, magnificence of the environment is being destroyed as well as the problem of pollution is being created.
- Many diseases thrive wherever there is non -systematic disposal of Garbage (waste).
- Toilets should be built under Clean India Campaign and Swachh Bharat Abhiyan.

□□□

Exercises

Choose the most appropriate option -

- Which of the following has long disposal period?
 (a) Banana peelings (b) piece of wood
 (c) Plastic bag (d) paper bag ()
- What happens when Wastes (garbage) is thrown in open
 (a) Soil pollution (b) water pollution
 (c) Air pollution (d) all above ()

Fill in the blanks -

- Biodegradable waste with the help of bacteria are in less time.
- During our daily routine we throw unusable material. These unused materials are
- Waste materials can be divided into solid and
- Unnecessary products made up of plastic do not for a longer periods.

Short answer type questions -

1. How can waste paper be made reusable?
2. Enumerate the harm caused to environment by plastic/polythene.
3. How does garbage affect our health?
4. What are benefits of collecting domestic garbage in separate bins?
5. Which types of waste materials can be disposed off by recycle method?

Long answer type questions -

1. How will you manage household waste? Explain in detail.
2. What is the difference between biodegradable and non biodegradable waste material? Explain by examples?
3. What are the methods of disposal of the non- biodegradable waste? Explain.
4. What are the methods of disposal of biodegradable waste? Explain.

Activity:

Prepare a research project on the impact of plastic bags on animal health.

Prepare a research project on the impact of plastic bags on water absorbing capacity of soil



Road Safety

Different Signs along the sides of highways:

You must have seen the different road signs beside the road when you might have travelled by car or bus. Different signs are displayed at various locations. Have you ever tried to find out the meaning of these signs? Let us know about these signs.

At the time of travelling by road, it is of utmost importance to follow these signs. Signs displayed beside the roads are of three types:

1. **Mandatory Signs:-** These signs are displayed inside a circle. These signs are mainly displayed on main roads or road junctions. Some of the important signs are :-

No Entry



No way both directions



U-turn prohibited



Heavy vehicles prohibited



Speed limit for that place



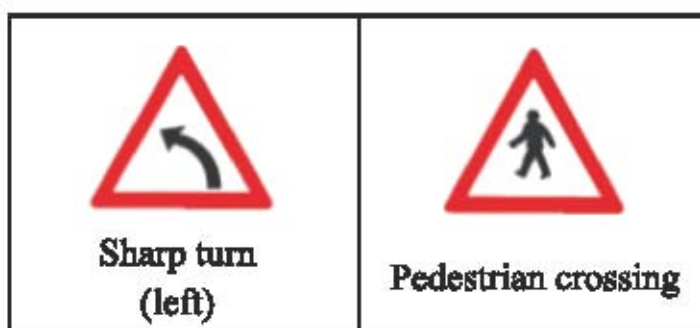
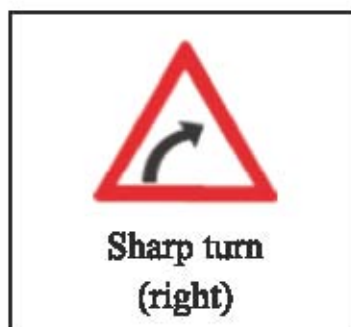
Horns Prohibited



One way



2. **Cautionary Signs:** - These signs are enclosed inside a triangle which represents further road conditions. Some of the important signs are:-



3. **Informatory Signs:** These signs are enclosed inside a square / rectangle. These represent further divisions / diversions on the road and the distance and direction of different cities / places from that information board and some signs display different facilities available on the highway. Some of the major signs are as follows:

This sign means that Jaipur is 426 kms ahead , Delhi is 673 kms ahead and Nathdwara is 50 kms ahead from that place.

Example -

Jaipur	426 Kms
Nathdwara	50 Kms
Delhi	673 Kms



Public telephone



Hospital



Service station

