Garbage In, Garbage Out

Learning Objectives

1. **There are two types of wastes – biodegradable and non-biodegradable.**
2. **Biodegradable wastes should be recycled.**
3. **Paper can be reused and recycled.**
4. **Metal and glass can be recycled into new products.**
5. **Plastics are bad for the environment.**

Every single day tons of garbage is collected from houses, offices, schools and other organizations. Many things that we use in our day-to-day life can be reused, like you can write on both sides of paper and thus save many trees. Instead of using disposable plastic bags, you can use cloth bags and save a lot of energy, and also contribute to reducing the amount of garbage. Recycling other materials and then reusing them is a good way to save a lot of landfill space. The process of recycling is a continuous loop that works when collected materials from garbage are turned into products. Then these products are bought and used again. By buying the products made from recycled materials, you will be supporting the industry that manufactures these products, and thus the loop of recycling goes on.

It's fun to buy new electronic gadgets, games, and devices. It's necessary to buy upgraded computers and phones every couple of years to keep up with advancing technology. It's cheaper to buy new devices than fix broken ones.

It's easier to use disposables such as plastic cups or razors or cameras. We must take appropriate actions to manage our production and waste now.

GARBAGE DISPOSAL

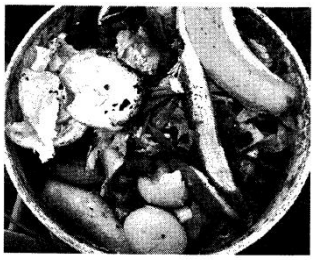
A large, low-lying area used to dispose garbage is known as a dump. A garbage dump is also used as landfill. Garbage collectors collect waste and then dispose it at garbage disposals. Garbage dumps have **flies, cockroaches and mosquitoes,** and later turn into breeding grounds for micro-organisms that may cause diseases. That is why these garbage dumps are usually located on the outskirts of a city. When garbage mixes with soil, it takes a longer time to decay. The soil becomes loose and a building cannot be constructed on such a land fill. Moreover, it takes 20 to 30 years for the soil to get ready for construction.

Types of Waste

There are two types of wastes that we generate depending on their source.

Biodegradable wastes are those that can be decayed easily. The process of decaying is known as composting. Useful garbage components are fruit and vegetable waste, plant and animal waste, tea leaves, coffee grounds and paper.

These useful components of garbage are converted into manure in the soil.



Biodegradable

Non- Biodegradable wastes include polythene bags, plastics, glass, metals and aluminium foils. These take longer to decay. When these wastes decay, they release harmful gases that damage the environment. To avoid the adverse impact, these garbage items are sent for recycling.

For example, when leaves burn, they release harmful gases and causes air pollution. Moreover, they lead to asthma and lung diseases. That is why leaves should be buried so as to convert them into manure.

Non- biodegradable

The type of litter we generate and the approximate time it takes to degenerate	
Type of litter	Approximate time it takes to degenerate the litter
Organic waste such as vegetable and fruit peels, leftover foodstuff, etc.	a week or two.
Paper	10-30 days
Cotton cloth	2-5 months
Wood	10-15years
Woolen items	1 year
Tin, aluminium, and other metal items such as cans	100-500 years
Plastic bags	one million years?
Glass bottles	undetermined

As a global society, our hierarchy for dealing with waste material must be:

(i) reducing, (ii) reusing, (iii) recycling, and (iv) appropriate final disposal.

Reduction of waste generated at the source ought to be of primary concern. It should be followed by reusing goods and recycling what cannot be reused.

Finally, when all other options are deemed impossible, the remainder of waste maybe incinerated or put in landfills

Recycling bio-degradable wastes: Biodegradable waste can be recycled bythe method of composting. This is the oldest form of disposal. It is a natural process that recycles the nutrients in the waste to give manure or compost. The manure is rich in nutrients and is very good for growing plants. This method is clean, cheap and safe. It reduces the amount of disposable garbage.

VERMICOMPOSTING

The process of preparing **compost with the help of red worms** is called vermin composting. The red worm is a type of earthworm that lives in the soil rich in organic matter, which is a combination **of nitrogen-rich and carbon-rich material** with plenty of moisture and microbes.

Method of Vermi compositing

A vermin composting pit is made with a wooden box or big cement rings.

A mesh is spread at the bottom of the pit.

Vegetable waste, fruit waste, waste paper hich is not shiny or coated with plastic, is spread over the mesh.

Water is sprinkled to create moisture so that the red worms can live.

A vermiform posting pit takes nearly two to four weeks to completely convert waste into manure.

Waste material that is rich in oils, salt, meat and vinegar stops the growth of red worms. These red worms have a special structure called gizzards with which they grind food material. A red worm eats food equal to its weighte very day. Red worms do not survive in too hot or too cold conditions.

Vermicomposting

Recycling

Articles made from waste

It is important to reuse things than discarding them as waste. Many nice article scan be made out of waste.

Industries use recycled or waste paper to regenerate paper. Paper that is suitable for recycling is called "scrap paper". You can recycle old newspapers, magazines, notebooks and used envelopes.

Do You Know

One of the recycling fact according to the EPA, is that making paper from recycled materials can result in 74% less air pollution and 35% less water pollution, rather than making paper from wood pulp.

Recycling one ton of paper saves around 17 trees, 463 gallons of oil, 6)953 gallons of water and 3 cubic yards of landfill space.

An average British family throwaway paper, which is worth 6 trees in their household garbage can a year

Steps involved in recycling paper

- Tear paper into small pieces.
- Soak these pieces in water for a day.
- Make a thick paste and spread it on a net or sieve.
- Let water drain off completely.
- Use an old cloth or newspaper to remove the extra water from the paste and dry it.
- Use this paste to get beautiful patterns.

Disadvantages of using of polythene bags

Plastics are generally very resistant to environmental effects (sunshine, rain, frost, etc.), which is an advantage from the point of view of the consumer, but is a great detriment from the point of view of environment. Plastic bags and boxes remain intact for a long time in landfills. These plastics can also be burned, but this can create pollution and poisonous gases. Wastes of many kinds is and will continue to increase all around the world due to increasing consumerism, population size, wealth, and production. The materials are getting more and more complex, and more resistant to natural breakdown. To eliminate the waste is getting more difficult and expensive, and the storage of this increasing amount of waste is practically impossible.

Do You Know

US citizens use 4 million plastic bottle every hour! However) only 25% of these plastic bottles are used for plastic recycling.

Did you know that) over 46,000 pieces of plastic debris float on every square mile of the ocean?

Every year) a person gets through 90 drink cans, 70 food cans and 107 bottles and 45 kg of plastic.

Plastic waste is sorted out according to its type of plastic and then recycled.

Around 80% of energy gets saved when plastic is created from waste plastic) rather than the raw materials,

We use many plastic items such as tooth brush, combs, containers, bottles, shoes, toys, wires, frames and bags every day. Certain parts of vehicles like cars and buses, and electronic goods like radios, televisions and refrigerators, are all made of plastic. All these are useful to us in many ways, but using plastic is very harmful in terms of health and as well as the environment.

Plastics are not suitable for storing cooked food because they emit harmful chemicals when they are exposed to high temperatures. Using plastics causes health problems such as **heart disease, diabetes and reproductively function.** Harmful gases are emitted from burning plastics, which cause cancer and they kill living beings.

That is why plastics should be disposed in the right way.

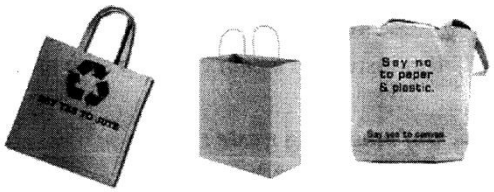
Plastics that do not contain the chemical, **BPA,** are usually licensed for storing food items.

Plastics thrown casually get into drains and sewages, often blocking the way and causing **water-logging.** A major cause of the floods in Mumbai, India, in August 2005 was the choking of the drainage system by plastic waste. So polythene bags should not be used for garbage disposal.

Measures taken to prevent from the dangerous effects of plastics

Adopt healthy practices such as:

- Reduce, reuse and recycle plastics.
- Carry jute or cloth bags for shopping
- Do not store food items in plastic bags.
- Do not bum plastic items.
- Recycle plastics so that new plastic items can be made.



- Waste that does not decompose should be put in blue dustbins, while waste that decomposes easily should be put in green dustbins.

Do You Know

Did you know that recycling aluminum can save up to 95% of energy which is required to make aluminum from bauxite ore?
Tin cans are 99% steel, with a thin layer of tin added to prevent the tins from corroding.

Glass Recycling

- One of the most interesting thing about glass is that glass can be recycled again and again. As it never wears out. Most glass bottles and jars that we use contain at least 1/4of the recycled material.
- Did you know that, the energy saved by recycling just one bottle can light a hundred watt light bulb for four hours!

Other Facts on Recycling

- The first municipal dump was formed in ancient Athens in 400 B.C.
- Every year we dispose around 24 million tons of leaves and grass clippings, which can be used by converting to compost to conserve landfill space.
- Use and throw bags are a waste of trees (paper bags) or fossil fuels (plastic bags). Not just that, they also contribute to water pollution during their production. Reusable cloth or paper bags are a better alternative to single use bags.
- The recycling symbol was designed by Gary Dean Anderson in the year1970.
- Plant waste like potato, orange, banana peels and grass cutting, leftover food, can quickly fill up the garbage can. This kind of waste can be easily used to make compost, which is a very good fertilizer for plants.
- Did you know that, up to 80% of an average car is recyclable?
- Taking a shower, instead of a bath can help save around 50 gallons of water!

Remember the 4R's of managing waste:

- Refuse things that increase garbage
- Reduce garbage by consuming less and throwing less
- Reuse wherever possible
- Recycle

Keywords

Landfill: Low lying open area used to dispose off the garbage of a town or city.
Biodegradable waste: Waste that will decay and mix with the soil.
Non-biodegradable waste: Waste that will not decay and mix with the soil.
Vermicomposting: A method of composting where compost is made from biodegradable waste with the help of red worms.