



TOPIC- Changes in Our Environment

SUB- TOPIC: Environmental Pollution

NAME _____ CLASS/SEC - V _____ DATE- 23/11/2020 to 27/11/2020

LEARNING OUTCOMES:

Each child will be able to:-

- Define **LAND POLLUTION**.
- List at least 3 causes of Land Pollution.
- State at least 2 effects of land pollution on biotic and abiotic components of the environment.
- Suggest at least 2 preventive measures to control land pollution.

In our last lesson we have learnt extensively about the causes, effects and preventive measures for air and water pollution.

Now let us find out some facts about **LAND POLLUTION**.

LAND POLLUTION is the addition of pollutants such as garbage, fertilizers, pesticides and plastic wastes to land.

CAUSES and EFFECTS OF LAND POLLUTION

- 1. Mixing and dumping of solid wastes, both household and industrial, in the soil causes **land** or **soil** pollution.**

Huge amount of solid wastes generated in big cities ,often dumped in landfill sites on the outskirts of our cities have become a big problem.

The solid wastes that we generate, as you are already familiar with, can be classified into 2 kinds:-

BIODEGRADABLE and

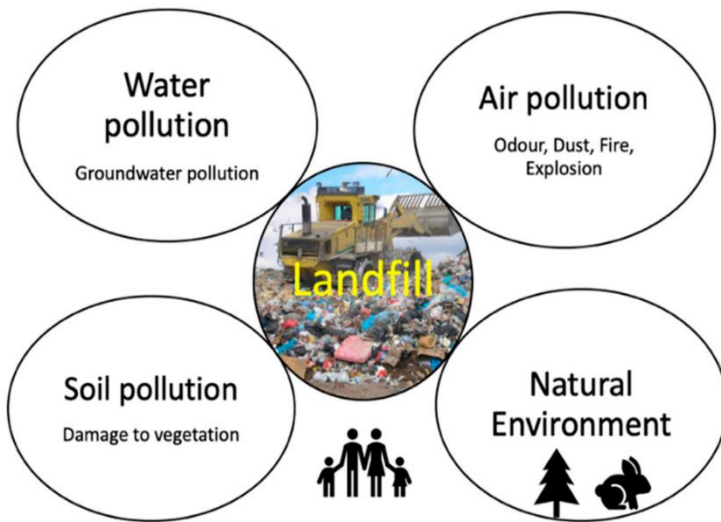
NON-BIODEGRADABLE



Biodegradable wastes consist of organic matter originating from plant or animal matter that can be easily decomposed or decayed, and ultimately gets mixed with the soil as humus; eg. dry leaves and dung, and agricultural wastes or stubble etc.

Nonbiodegradable wastes, on the other hand, are mostly plastic bags, glass bottles, cloth, tyres, metal containers and paper etc.

They do not get destroyed easily and remain in soil for a long time and pollute it.



These dumping grounds serve as breeding grounds of insects and germs that spread diseases.



Landfills emit landfill gas that consists mostly of methane and carbon dioxide, with small amounts of inflammable organic compounds from the bacterial decomposition of organic materials. Methane and carbon dioxide are both greenhouse gases, and methane is toxic and explosive in large concentrations.

Thus, we see that these landfills can damage the whole Environment and contribute to global warming.



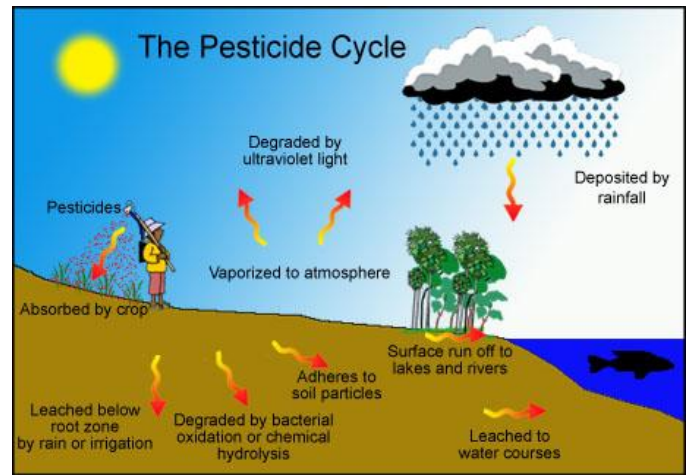
2. Soil contains useful bacteria that are killed by **harmful chemicals in fertilizers and pesticides**, that are sprayed by the farmers, for the protection of their crops.

-These chemicals alter the mineral composition of soil and affect the soil fertility.

-Toxic chemicals present in polluted soil, enter fruits and vegetables grown in such soil. When we eat these fruits and vegetables, toxic materials enter our body and may cause a lot of harm.

- Pesticides also pollute the groundwater and cause a lot of damage to our environment .

-Excessive use of chemical fertilizers and pesticides affects the soil and aquatic organisms as well .



3. Deforestation also causes soil erosion and results in soil degradation, often changing the fertile agricultural lands into barren fields.



LET US NOW TRY TO FIND THE SOLUTIONS TO THESE PROBLEMS...



WAYS TO PREVENT LAND POLLUTION

➤ The greatest prevention to land pollution is in the three 'R's' ...

Reduce Waste, Reuse things and Recycle things.



Methods to control Soil Pollution



We can use the three 'R' rule to minimize the amount of waste that ends up in landfills.



➤ People should be educated and made aware of the harmful effects of littering.

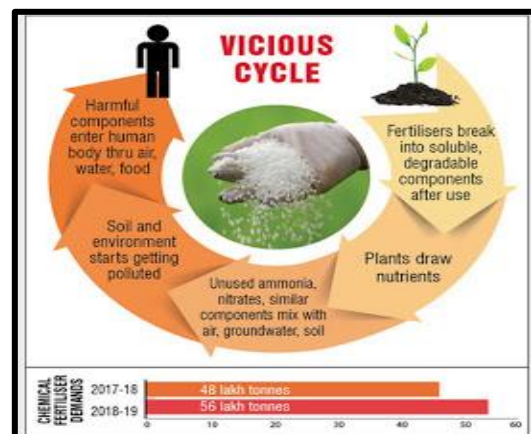
➤ Discuss with friends and family and talk about it.



- Personal litter should be disposed properly.
- We can Separate or segregate household wastes at home for recycling. More than half of our household waste could be recycled or re-used but once it is mixed up, it becomes more difficult to separate different components for recycling. This is also true for waste we generate at school or hospitals.



- Reduce toxic materials. Don't use chemical fertilizers or pesticides.



Chemical fertilizers are manufactured from recycled waste products which may contain large concentrations of hazardous chemicals, including zinc, lead, cadmium, chromium and even arsenic. These chemicals may result in harmful effects to human health or even death.

- Buy biodegradable products.



- Buy organic foods that are grown without pesticides. Look out for fertilizer or pesticide free products when you go to the

market.



- Buy products that have little packaging.



- Re-use any items that you can. Items like clothing, bottles, wrapping paper and shopping bags can be used over and over again, rather than buying new things.



CREATE BEST OUT OF WASTE

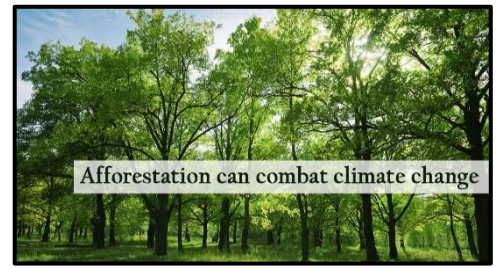
Get new ideas for reusing waste material by looking at the following videos:

<https://youtu.be/bTe2rc9RZ1U>

https://youtu.be/hLgl_D28bQs

CREATE ONE DECORATIVE ARTICLE USING ANY KIND OF WASTE LYING AROUND, FOR YOUR HOME OR FOR GIFTING.

➤ Improve fertility of the land. Conserve the soil by **AFFORESTATION**.



➤ After the three 'R's, remember to turn the rest of the garbage into **COMPOST**.



Organic waste can be easily turned into Manure.

ACTIVITY TIME

COMPOSTING- A WAY OF MANAGING WASTE



Do you know that this waste can be converted into nutrient rich soil?

Yes!! It is possible through composting.



What is composting???

When kitchen waste such as vegetable peels, tea/green tea bags, apple cores, eggshells, stale bread, and even paper plates, changes into soil like material. ie compost is called composting.

WHAT IS COMPOST?

Compost is organic material that can be added to soil to help plants grow.

Now let's learn how to make compost at home.

THINGS YOU NEED:

- Empty 2L plastic bottle (if that's not available then you can use of any size.)
- Dry mud
- Plant waste- dry leaves, twigs, dry grass, wet tea leaves etc
- Spray bottle
- Scissors
- Safety pin/ Push pin

STEPS TO FOLLOW:

- Rinse your bottle.
- Cut the neck of the bottle using scissors. (To be done under adult supervision.)
- Now using safety pins make a few holes at the bottom of the bottle.
- Add the dry mud, plant waste and shredded paper into it.
- Now sprinkle some water into it and then add some kitchen waste like banana peel, vegetable waste etc.
- Lastly, keep it at a place where there is good sunlight.
- Don't forget to stir the content of the bottle daily.

Now wait for a few days to see the waste changing into soil like thing

THINK AND SHARE!!!

Your experience.

Is the compost produced useful for the plants? if yes, then how?

If all the families of the world adopt this practice, then how can it be a gift to OUR MOTHER EARTH?

LET'S REVISE

(TO BE DONE IN THE NOTEBOOK)

Q 1. Choose the correct option:-

- a) Landfill sites are responsible for:
i) air pollution ii) water pollution iii) soil pollution iv) all of the above
- b) Old clothes should be:
i) discarded ii) reused iii) recycled iv) reduced
- c) Using excess of Chemical fertilizers can cause:
i) pollution of soil ii) pollution of groundwater
iii) contamination of fruits and vegetables iv) all of the above
- d) Most dangerous non- biodegradable wastes are:
i) metals ii) rubber iii) silk iv) plastic

Q 2. Complete the following statements:-

- a) Garbage piles in landfill sites can be controlled by following the _____.
- b) Recycling of wastes can be possible only if we _____ our wastes at home, schools or hospitals.
- c) The largest campaign (programme) started by our government for proper disposal of wastes is _____.
- d) Dry leaves, vegetable peels, cow dung etc. can be used for producing _____.

Q 3. Take two plants in two different pots. Name them A and B. Water one plant with clean and pure water and the other with polluted water for a few days. Observe them carefully and note down your observations.

- a) Which plant seems to be healthier? _____
- b) The second plant does not grow properly. Why? _____
- c) After your experiment is over, try to revive the unhealthy plant. How will you do it? _____