



MODULE 3A

Environmental Science

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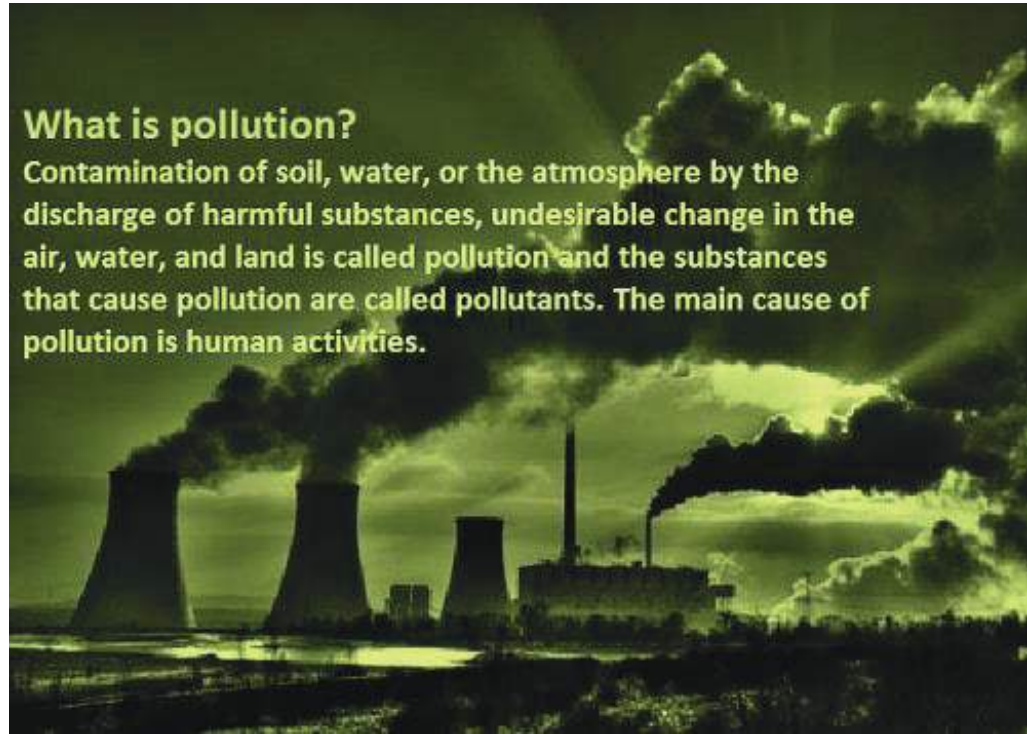
Course Content(s)

- ❖ Environmental Pollution & Their Effect(s)
- ❖ Water Pollution
- ❖ Land Pollution
- ❖ Noise Pollution
- ❖ Air Pollution
- ❖ Public Health aspect(s)
- ❖ Solid waste management

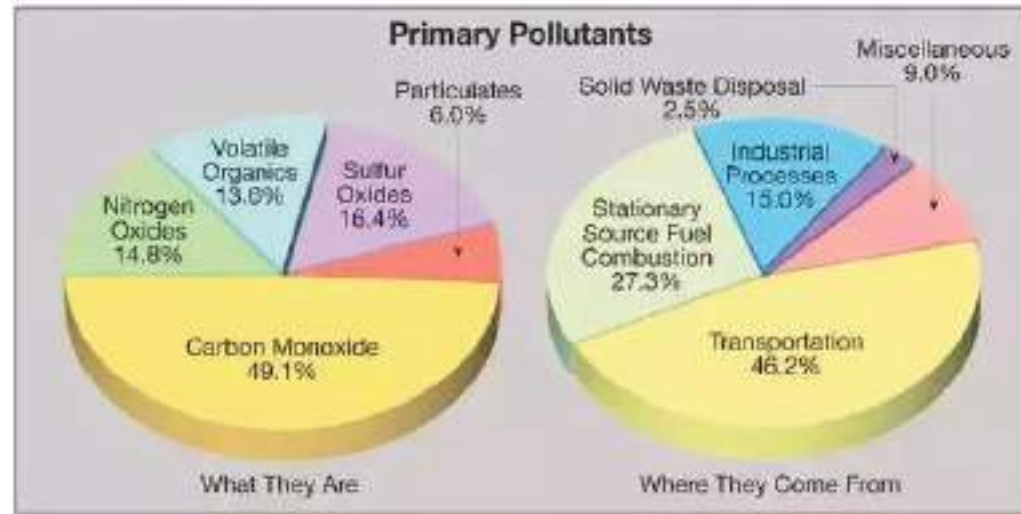


What is pollution?

Contamination of soil, water, or the atmosphere by the discharge of harmful substances, undesirable change in the air, water, and land is called **pollution** and the substances that cause pollution are called **pollutants**. The main cause of pollution is human activities.



Common Pollutant(s)



What Are The Type Of Pollution





What is air pollution?

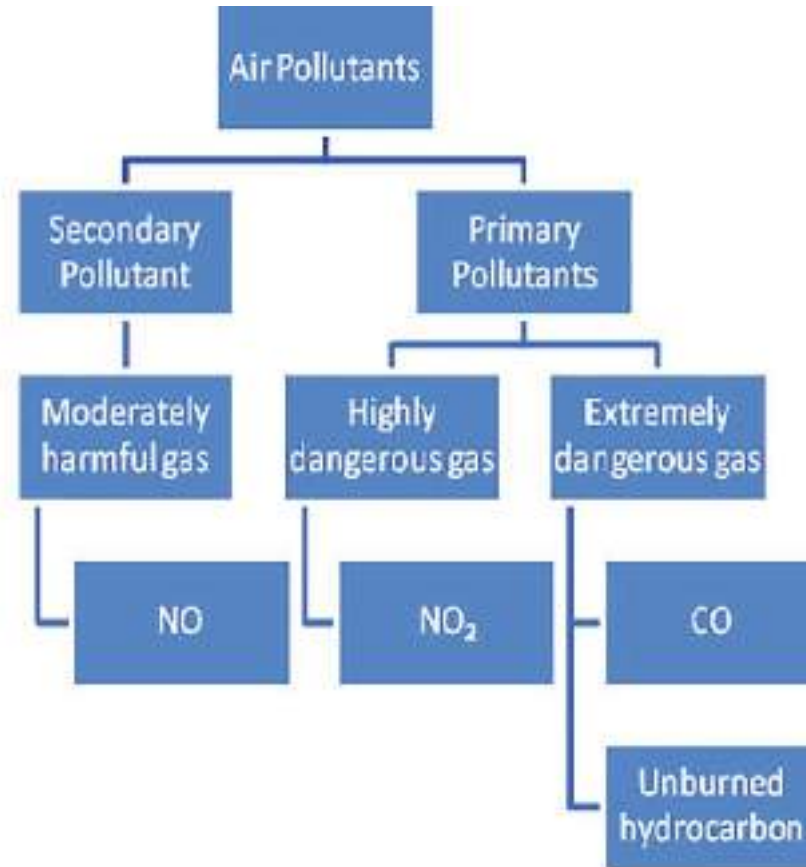
Air pollution is made up of different types of chemicals and gases. It occurs in our atmosphere.



Common Air Pollutants



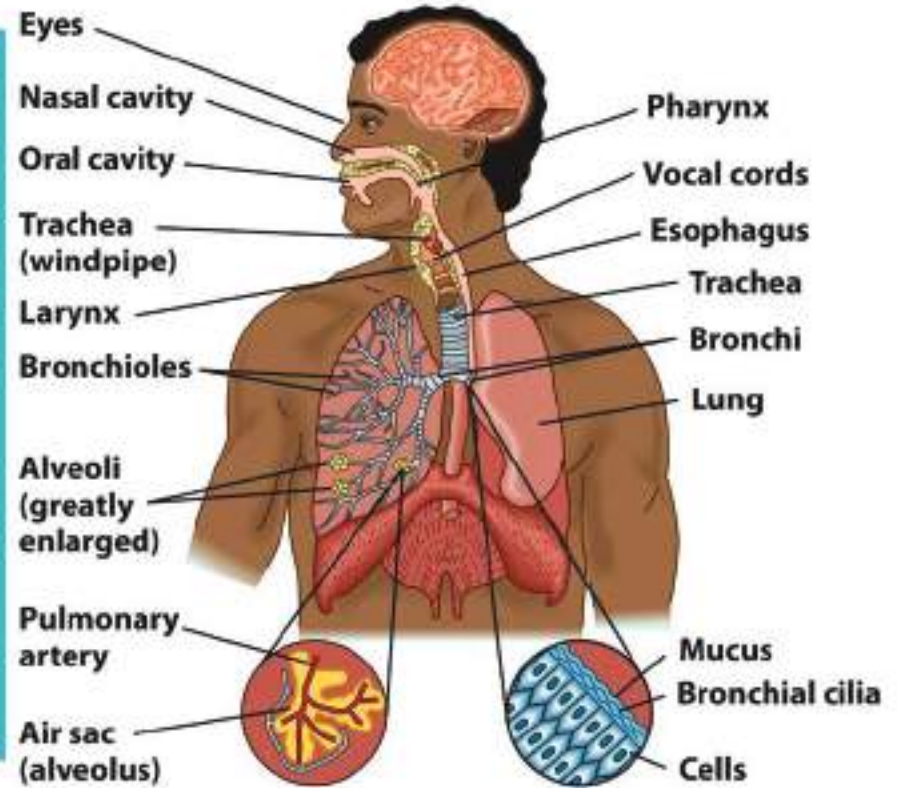
Summary of Air Pollutants



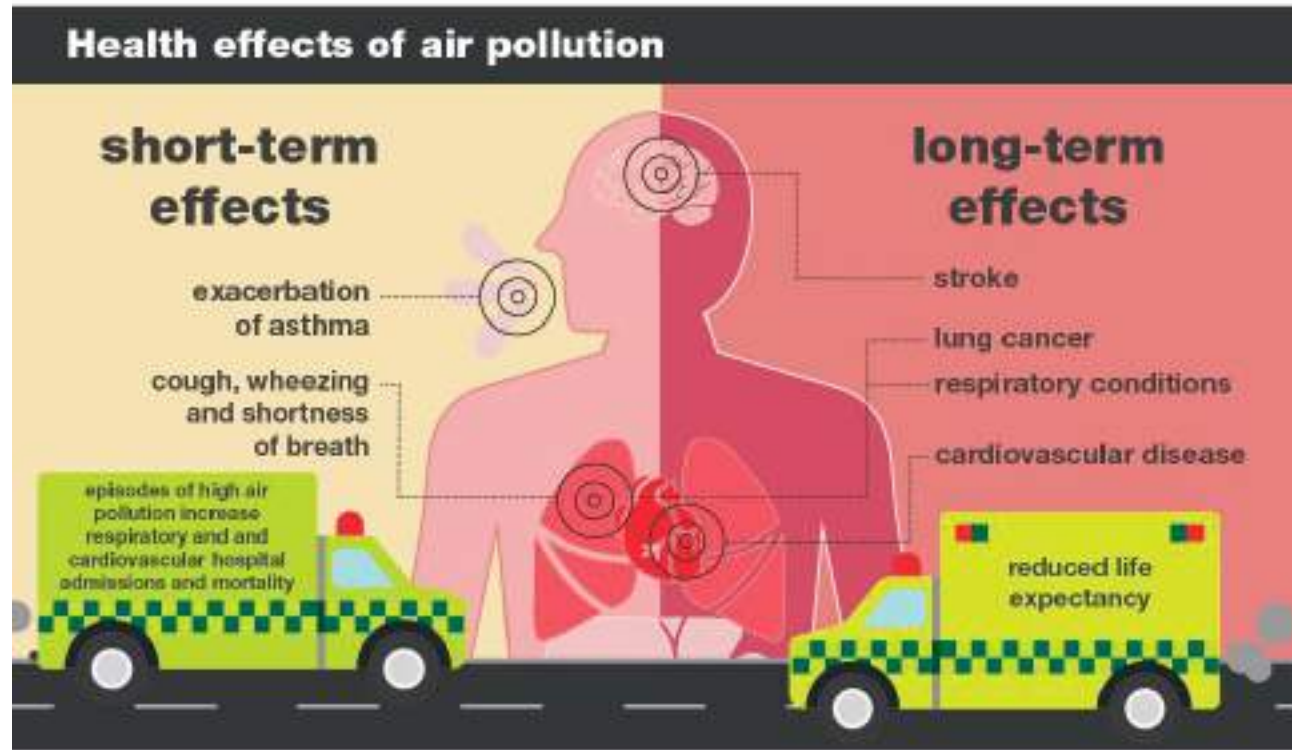
Effects of Air Pollution on Human Health



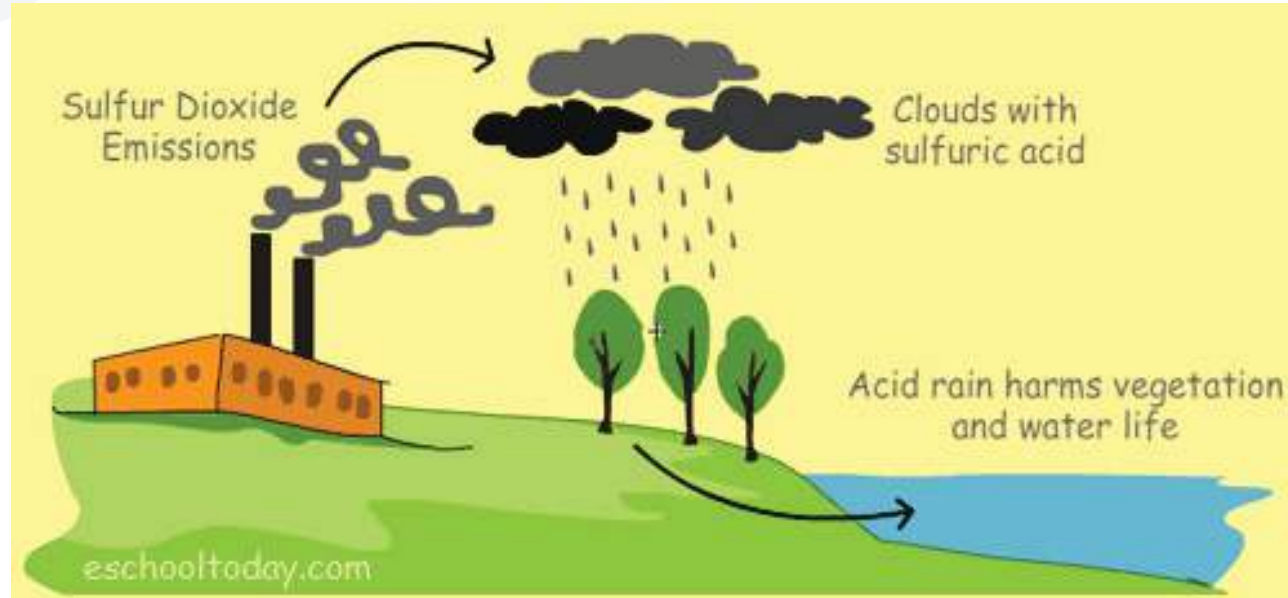
Effects of Air Pollution



Effects of Air Pollution on Human Health

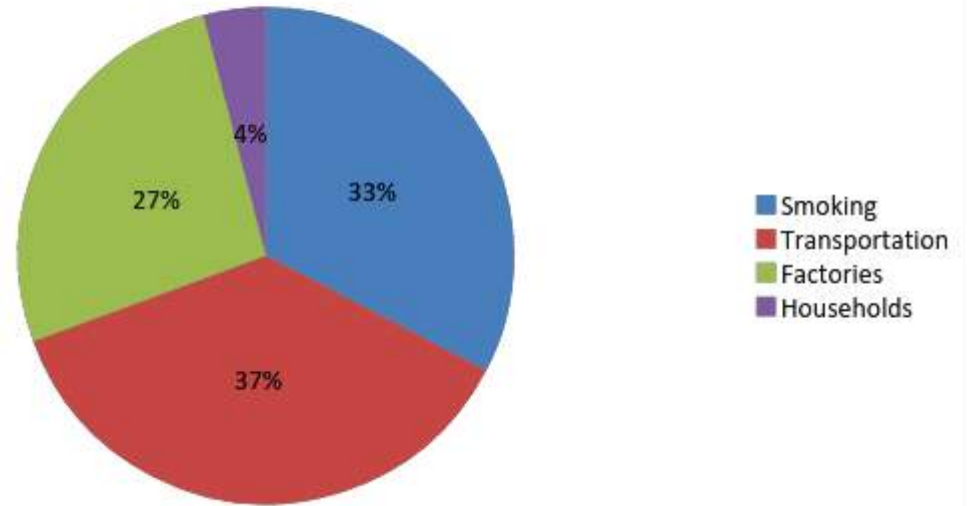


Effects of Air Pollution on Environment





What are the main sources of air pollution?



Air Pollution Control



teachoo.com

Air Pollution can be reduced by



Planting more trees



Using Electric Vehicles



Using Environment
Friendly vehicles



Using alternate sources
of energy



Using public transport

WATER POLLUTION



What is water pollution?

Any chemical, biological, or physical change in water quality that has a harmful effect on living organisms or makes water unsuitable for desired usage.



Cause of Water Pollution



SOURCES AND EFFECTS OF WATER POLLUTION



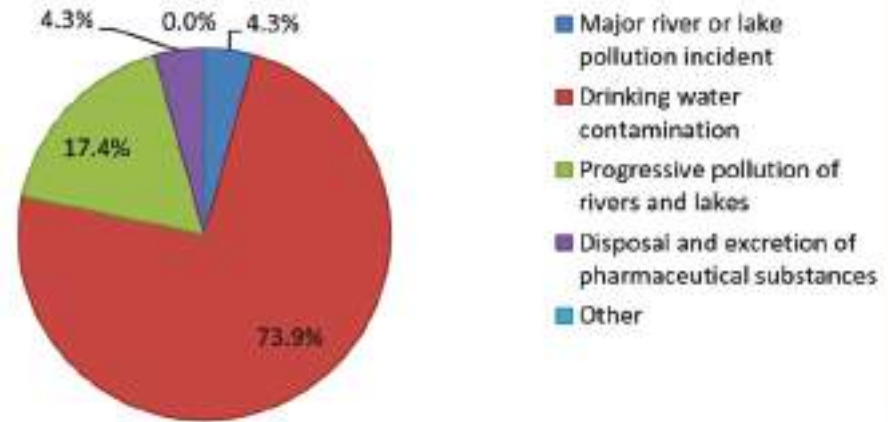
- 1) Sewage and domestic waste
- 2) Industrial wastes and effluents
- 3) Insecticides and pesticides
- 4) Detergents and fertilizers
- 5) Siltation
- 6) Thermal pollution
- 7) Radioactive materials



WATER POLLUTION



Risks to health from water pollution



WATER POLLUTION



EFFECTS OF WATER POLLUTION

- Virtually all types of water pollution are harmful to the health of humans and animals. **Water pollution may not damage our health immediately but can be harmful after long term exposure.** Different forms of pollutants affect the health of animals in different ways:
- Heavy metals from industrial processes can accumulate in nearby lakes and rivers. These are toxic to marine life such as fish and shellfish, and subsequently to the humans who eat them.
- Industrial waste often contains many toxic compounds that damage the health of aquatic animals and those who eat them. Some of the toxins in industrial waste may only have a mild effect whereas other can be fatal. They can **cause immune suppression, acute poisoning.**
- Microbial pollutants from sewage often result in infectious diseases that infect aquatic life and terrestrial life through drinking water. Microbial water pollution is a major problem in the developing world, with diseases such as **cholera and typhoid fever** being the primary cause of infant mortality.

WATER POLLUTION & Human Disease



Diarrhea



Vomiting



Typhoid



Diphtheria



Hepatitis



Kidney Damage



Nerve Disorders



Skin Lesions



PREVENTION OF WATER POLLUTION



How Trees Prevent Water Pollution

Trees improve water quality by capturing rainfall and gradually releasing it so that it contributes less flow and pollutants downstream.

Tree roots and leaf litter promote slow absorption of water back into the ground

Precipitation

Tree canopy intercepts raindrops, prevents erosion

Precipitation Throughfall

Reduced volume of water runoff reduces erosion and pollutants downstream

Infiltration

Groundwater Recharge

The Nature Conservancy
Washington

PREVENTION OF WATER POLLUTION



Preventing Water Pollution

- Protect wetland and riparian habitat
- Use less chemicals, energy, and manufactured products that contain plastic or metal
- Minimize the use of agricultural chemicals (inorganic fertilizer, pesticide, soil stabilizers, etc)
- Develop effective storm water runoff systems
- Develop and enforce strict safety requirements for oil drilling and transport
- Minimize runoff from all sources
- Treat contaminated water prior to release into the environment (waste water treatment)

LAND POLLUTION



For detail Land pollution follow the link below and take note as you wish! Thank you !

<https://www.environmentalpollutioncenters.org/soil/>

LAND POLLUTION

POLLUTION ON THE LAND

What is Land Pollution?

Land pollution, in other words, means degradation or destruction of earth's surface and soil, directly or indirectly as a result of human activities

Causes

1. Deforestation and soil erosion
2. Agricultural activities:
3. Mining activities
4. Overcrowded landfills:
5. Industrialization
6. Construction activities

Effects

1. Soil pollution
2. Change in climate patterns
3. Environmental impact
4. Effect on human health
5. Distraction for tourist

Solutions

1. Make people aware about the concept of Reduce, Recycle and Reuse
2. Reduce the use of pesticides and herbicides in agricultural practices
3. Avoid buying packages, foods as they will lead to garbage and end up in landfill sites
4. Ensure that you do not litter on the ground and do proper disposal of garbage in your homes, schools or offices
5. Do Organic gardening and eat organic food that will be grown without the use of pesticides
6. Create recycling groups with your neighbors

NOISE/SOUND POLLUTION



Noise pollution, also known as environmental noise or sound pollution, is the propagation of noise with ranging impacts on the activity of human or animal life, most of them harmful to a degree. The source of outdoor noise worldwide is mainly caused by machines, transport, and propagation systems.

DECIBEL SCALE



For detail noise pollution please refer the link below you may find the best note here. Thank you !!

<https://www.environmentalpollutioncenters.org/noise-pollution/>

NOISE/SOUND POLLUTION

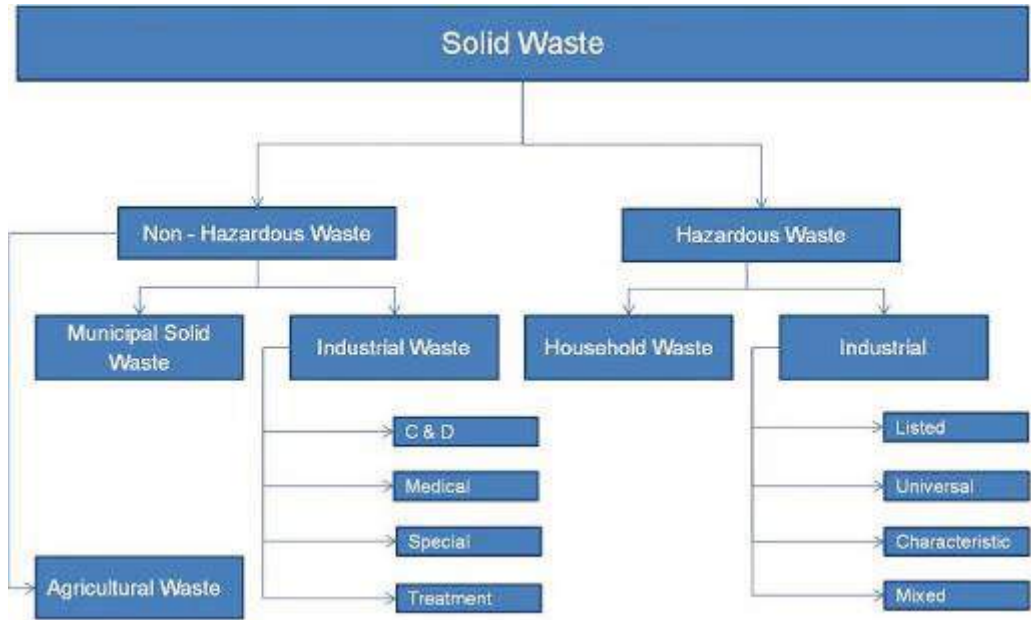


Sound is measured in units called decibels (dB). Sounds of less than 75 decibels, even after a lengthy exposure, are unlikely to cause hearing loss. However extended or repeated exposure to sounds at or above 85 decibels (approximately the level of a vacuum cleaner) can cause hearing loss.

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SOLID WASTE MANAGEMENT



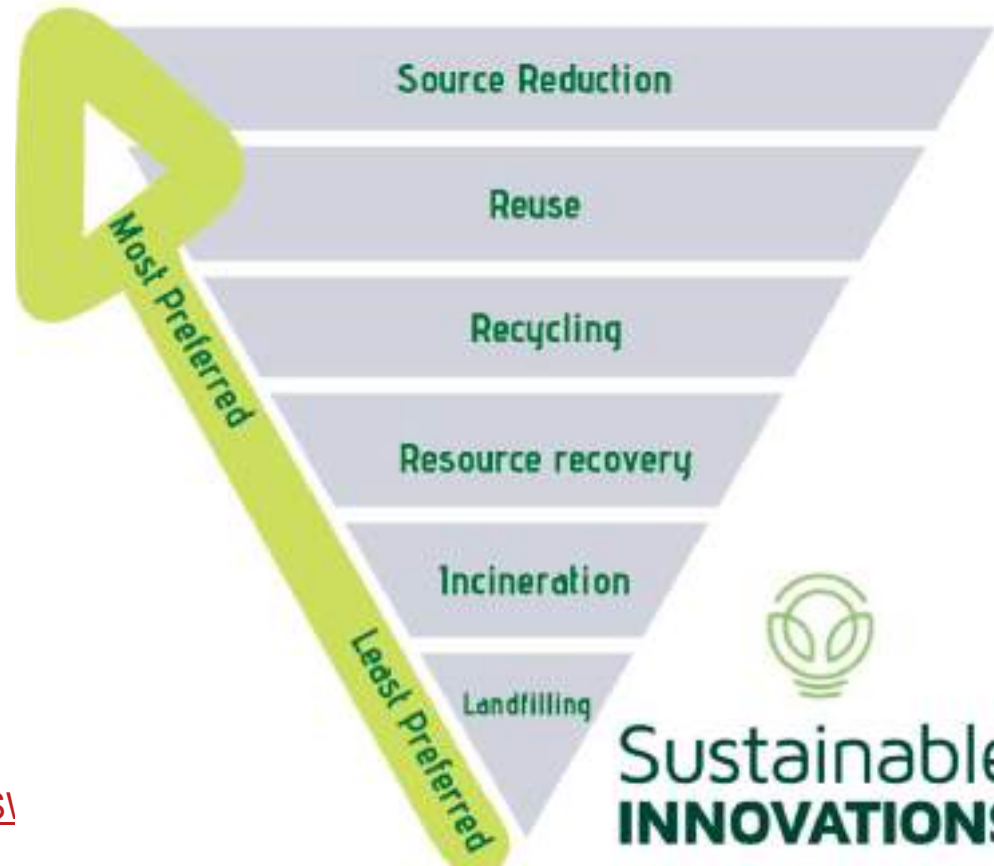
[Follow the you tube video for a nice lesson on SWM](https://youtu.be/nL354fxAfBk)
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SOLID WASTE MANAGEMENT



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WASTE PYRAMID



SOLID WASTE MANAGEMENT



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