

LAND POLLUTION



The growth of the world's population has led to a growing demand for goods and services. Technological improvements and increasing knowledge have resulted in the proliferation of new factories and chemical plants which cater for the ceaseless wants of a large population. Wastes from production plants and households are becoming problematic with respect to disposal. The land is sometimes seen as the only receptacle for wastes produced by factories and families.

SOLID WASTE

Pollution from disposing of garbage is a global problem. Households generate solid wastes which include paper, plastics, tyres, bottles, cans, glass, old motor vehicles and appliances. These usually are discarded on the roadside, beach fronts and vacant plots of land.



A discarded old vehicle at the roadside

TOXIC WASTE

Some industries produce toxic waste which is disposed of on the land. Oil production and consumption result in large areas of land being rendered useless due to petrochemical pollutants. Other industrial activities produce a variety of toxic wastes. These include lead from battery manufacture, the production of paints, and the use of mercury and cyanide in certain mining activities and electroplating.



Waste from oil

CONSEQUENCES

- Toxic waste is poisonous and affects human health in a variety of ways. Lead disposed of in soil where people live, work and grow crops may eventually enter the body leading to lead poisoning. This affects the central nervous system and causes mental retardation in young children. Both adults and children suffer from nausea, and brain and kidney damage from high levels of lead poisoning which may result in death.

Wallerfield, Trinidad - 1993.

Truckloads of lead slag from a battery-manufacturing plant were used to cover potholes in the road.

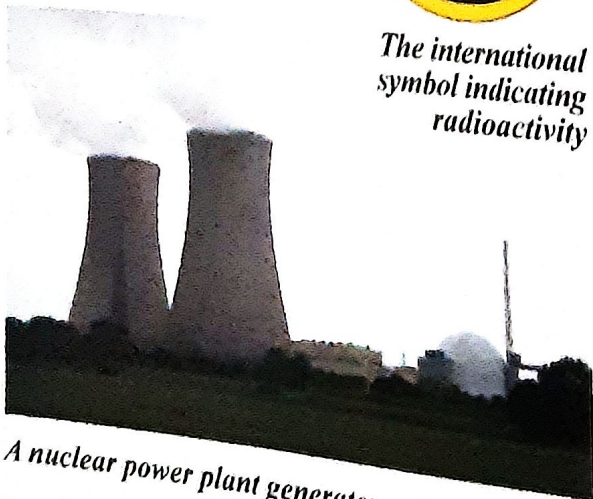
Several residents used the material to pave their yards. Consequently, they suffered from lead poisoning resulting in the death of an infant.

RADIOACTIVE WASTE

Radioactive waste is generated from nuclear power plants and the use of nuclear weapons. Several countries throughout the world use nuclear reactors to generate electricity.



The international symbol indicating radioactivity



A nuclear power plant generates radioactive waste.



A boy with lead poisoning

- Oil spills on land destroy vegetation. The land becomes unproductive and uninhabitable.
- Nuclear power plants and nuclear weapons generate radioactive waste. When improperly disposed of, it enters the human body directly through contact with the earth or indirectly through the food chain. Small amounts of exposure to radiation causes nausea, vomiting and loss of appetite. Severe exposure results in the destruction of white and red blood cells, rendering the individual incapable of resisting infection. Severe and prolonged

exposure leads to cancer and mutation of the genes resulting in the birth of deformed children from parents who are so affected.



A deformed calf born from a cow which was affected by radiation

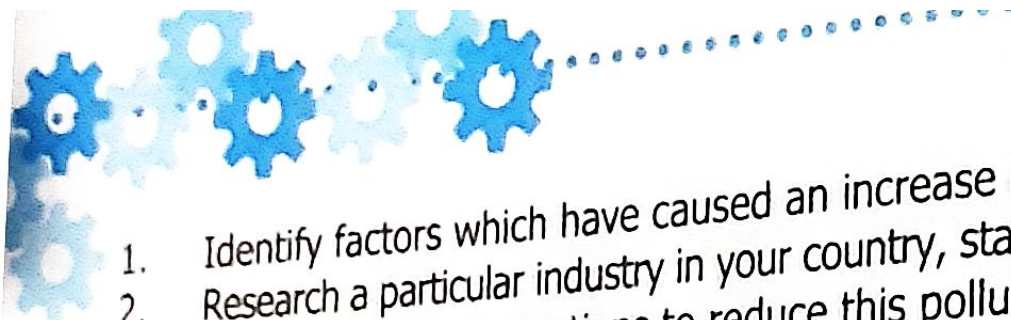
- Solid wastes such as cans, bottles, tyres, etc., which are improperly disposed of are unsightly and unhygienic. They attract flies and mosquitoes which spread diseases such as malaria, yellow fever and gastro-enteritis.

SOLUTIONS



- Governments must select suitable sites for the disposal of toxic wastes. These sites must be far from human habitation and appropriately fortified to prevent pollution of adjacent soil and ground water.
- Legislation with severe penalties must be passed to regulate the disposal of solid waste.
- Used automotive oil, batteries, glass, paper, cans etc., can be collected at a central location for recycling.
- Householders can be educated on ways of reusing articles such as plastic containers and cans.
- Consumers should use shopping bags made of biodegradable materials instead of plastics.



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1. Identify factors which have caused an increase in land pollution.
 2. Research a particular industry in your country, stating the various ways in which its activities cause land pollution. Offer suggestions to reduce this pollution.
 3. How is solid waste disposed of in your country? Comment on its effectiveness.
 4. Identify the various ways in which householders can reduce solid waste.
 5. "The problem of solid and toxic waste disposal is insurmountable." Discuss.
 6. Research the consequences of the bombing of Hiroshima and Nagasaki during World War II.

NOISE POLLUTION



Noise pollution is any undesirable sound which disturbs the peace and tranquillity of human beings. Sound is measured in decibels (dB). Prolonged exposure to noise levels above 80 decibels damages the eardrums, resulting in deafness.

- Transportation equipment – aeroplanes, trucks, motorcycles and trains.
- Public address systems.
- Factories and manufacturing plants.
- Musical equipment, speakers and sound systems, radio and television.
- Explosives – firecrackers, dynamite etc.; guns
- Barking dogs

SOURCES OF NOISE POLLUTION

- Construction machinery – tractors, cranes and backhoes

CONSEQUENCES

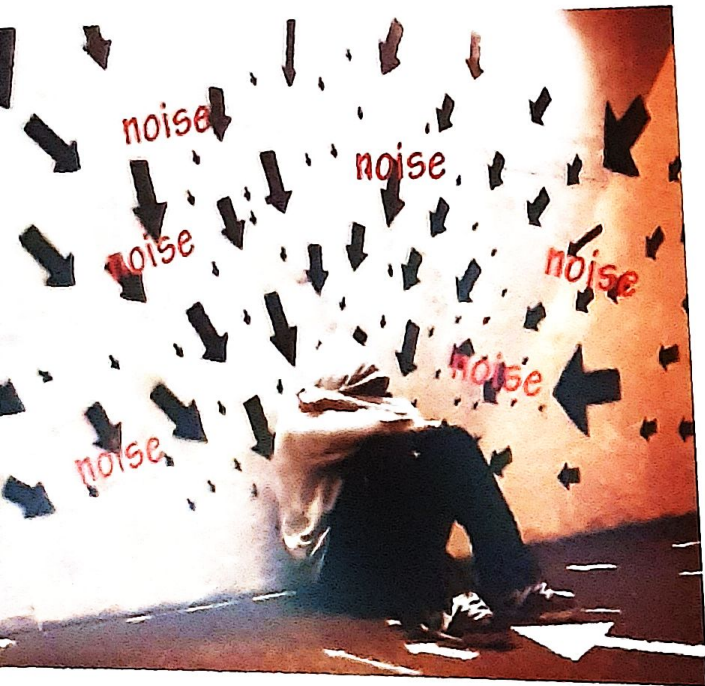
Prolonged exposure to noise levels above 80 decibels causes deafness.

Loud noise disturbs peaceful sleep resulting in restlessness and tiredness.

It causes emotional disturbance and stress, resulting in anger and anxiety.

Productivity at work is hampered.

Physiological effects results in indigestion, rise in blood pressure, nervousness and hypertension.



Noise can affect a person physically.

SOLUTIONS

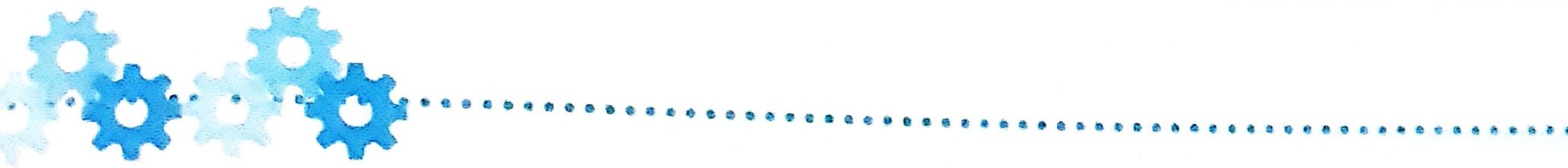
- Wearing of earplugs at construction sites where jackhammers, and cutting and grinding equipment are constantly in use
- Legislation to prohibit noise levels over 80 decibels in residential areas
- Education on the effects of noise pollution
- More efficient silencers on vehicles



A worker wearing earmuffs to protect himself from the noise of the jackhammer



*The noise from the engine of a motorcycle is unbearable without a silencer.
Inset: Close-up of the silencer*



1. Define noise pollution.
2. Identify the sources of noise pollution in your community.
3. Write a letter to the editor of a newspaper convincing him/her that there should be legislation against noise pollution.
4. Propose an action plan to the Minister of the Environment to reduce noise pollution.