

NATURAL SCIENCES AND TECH GRADE 6

WEEK 5 OF LOCKDOWN PROGRAMME

TOPIC 8: MIXTURES AND WATER RESOURCES

UNIT 1: WATER POLLUTION...Page 92

1. Clean water is water that is free of pollutants.
2. Pollutants are substances (or objects) that do not naturally belong in the water and are harmful to us and to the environment.

VISIT Water pollution (video) goo.gl/07xDe

Causes of Water Pollution

Pollutants may be any of the following:

1. **Insoluble pollutants:** These are things that do not dissolve in the water but make it dirty, such as oil, garbage and toilet waste (sewage).
2. **Soluble pollutants:** These are chemicals such as soaps and fertilisers and poisons, such as insecticides and acids.
3. **Living germs (bacteria)** from toilet waste that can cause people or animals to get sick.

A. Water Pollution by insoluble substances

1. Insoluble substances and materials that cause water pollution include **oil, plastics, tyres, tins, glass and toilet waste.**
2. **Oil spills** from ships **pollute** the **seas** and harm **sea life.** The **birds** cannot fly, spread their wings to dry and **can die** from cold and starvation.



A bird covered with oil



Dead birds covered with oil

3. **Plastic waste**, such as **plastic bags, bottles and fishing line**, kills many animals every year. **Turtles** die after eating plastic bags which they mistake for jellyfish. Animals like **seals and penguins** get tangled up in fishing line, which can cause them to have injuries or they could drown.



A turtle eating plastic



A seal entangled with plastic

4. People pollute water when they use rivers and streams as a toilet or put their solid toilets waste (**faeces**), into the water.
5. Certain **bacteria and germs** that break down solid toilet waste can make **people very sick** if people drink the polluted water.

B. Water pollution by soluble substances

1. Substances such as **soaps, fertilisers, insecticides, acids and poisonous chemicals** dissolve in the water surfaces and pollute them.
2. **Fertilisers and soaps lower the oxygen** levels in water. Organisms like **green algae** increase in the water and use up the oxygen in water, therefore less oxygen is available for other water organism. Many water organisms the **die from lack of oxygen**.



Pollutants in soapy water



Fertilisers in water cause an increase in green algae

3. Metals and dissolved **chemicals**, like **acids** from factories, can **pollute rivers and lakes**. Mining waste and paint contain **lead**. Lead is **poisonous** to living organisms and can **damage the brain and kidneys**.



4. Farmers spray **insecticides** on their crops to control and kill insects. These poisons wash into rivers and dams when it rains. **Humans, birds and other animals can be poisoned** if they eat fish, frogs or other species from the polluted water.

C. Water pollution by living germs

1. People who do not have proper toilets in their homes pollute rivers and streams when they put **toilet waste** into the water.
2. Bacteria in this polluted water can cause cholera and diarrhoea.
3. People with diarrhoea have a runny tummy and very watery faeces.
4. People with cholera have severe diarrhoea, vomiting and dehydration. Globally, more than 100 000 people die from cholera every year.

TASKS TO BE COMPLETED

1. Write down keywords and meanings from Topics 8 and 9.
Begin with No. 1 - fertilisers, Page 92...end with No. 16 – constraint, page 107
2. Activity 1..Page 91
Answers only, but write in full sentences.
3. Activity 2...Page 95
Answers only, but write in full sentences.
4. Study **KEYWORDS** from **1. Particles** to **20. Filter paper** to prepare for a keyword test next Thursday.