Water Pollution & DO

What happens when pollution gets into our waterways?

Keys Terms:
Bioindicators, disolved oxygen (DO), macroinvertebrate

canalrivertrust.org.uk/stem

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Objectives

- Learn about different kinds of water pollution.

- Explore the impact of water pollution on ecosystems.

- Understand how the types of organisms found in a sample of water can be an indication of water quality.

What is water pollution?

- Water pollution is the process by which a body of water becomes contaminated, usually as a result of human activity.
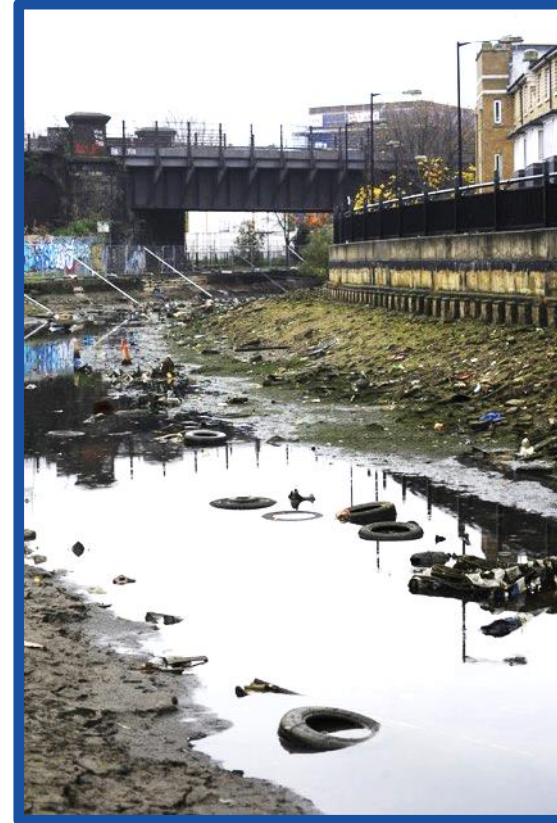
Can you name some different types of pollution that might affect rivers and canals?

Types of water pollution

- Fertilisers and pesticides

- Industrial waste and sewage

- Oil leaks and spills

- Dumping waste and littering

Water pollution harms wildlife and reduces the quality and level of oxygen in water.

What sort of pollution could have occurred here at the Regents Canal?

Dissolved oxygen in water

How do you think oxygen gets into water in first place?

- Diffusion from the atmosphere.

- Aeration of the water as it tumbles over rocks and waterfalls.

- As a product of photosynthesis.

Dissolved oxygen in water

Why does pollution reduce oxygen levels?

- If sewage gets into canals and rivers, micro-organisms and bacteria decompose it. They rapidly increase in number and use up the oxygen for aerobic respiration.

- Extra nutrients in water can stimulate algae growth. This blocks light from reaching the plants below. The plants die and the bacteria in the water increases.

Algae bloom

Measuring dissolved oxygen (DO)

- The amount of DO in water gives us a good indication of water quality.

- We can use a DO meter to test the levels of oxygen.

- Another good way to investigate water quality is to look at the types of organisms we find there.

- Some organisms can tolerate low oxygen levels, others need high oxygen levels to survive.

Dissolved Oxygen

High

Low
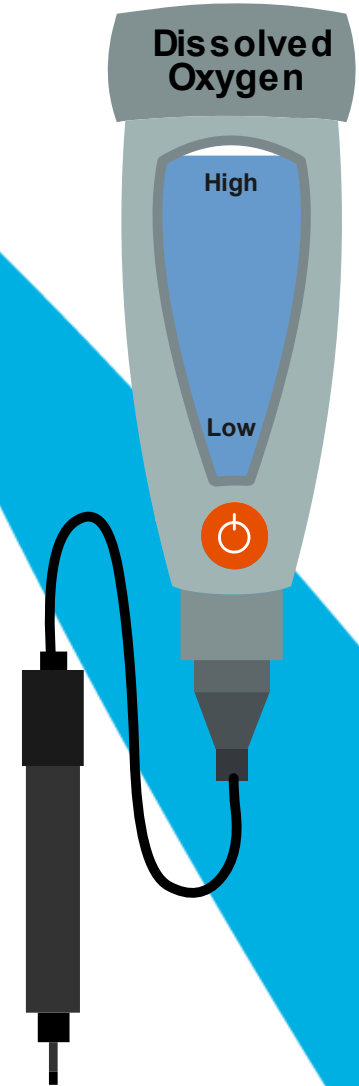
Bioindicators

- Macroinvertebrates can be good bioindicators.

- They are large enough to be seen without a microscope.

- They are an essential part of the food chain and can indicate general levels of biodiversity.

- Greater diversity of macroinvertebrate species indicates better water health.

Riffle beetle larvae

Water boatman

Whirligig beetle

Midge pupa

Tolerance

- Different species of macroinvertebrates have varying sensitivities to water quality.

Stonefly and Mayfly larvae are not tolerant to pollution. They only survive in water with good oxygen levels.

Sludge worms and pond snails are pollution tolerant. They feed on decaying matter and survive in water with low oxygen levels.