

# Acid Rain



# What is acid rain?

Rainwater has a pH of about 5.6, which means that it is naturally slightly acidic.

This natural acidity is due to carbon dioxide in the air dissolving into the rain, forming a weak acid called carbonic acid.

Rainwater with a lower pH than normal is called **acid rain**.

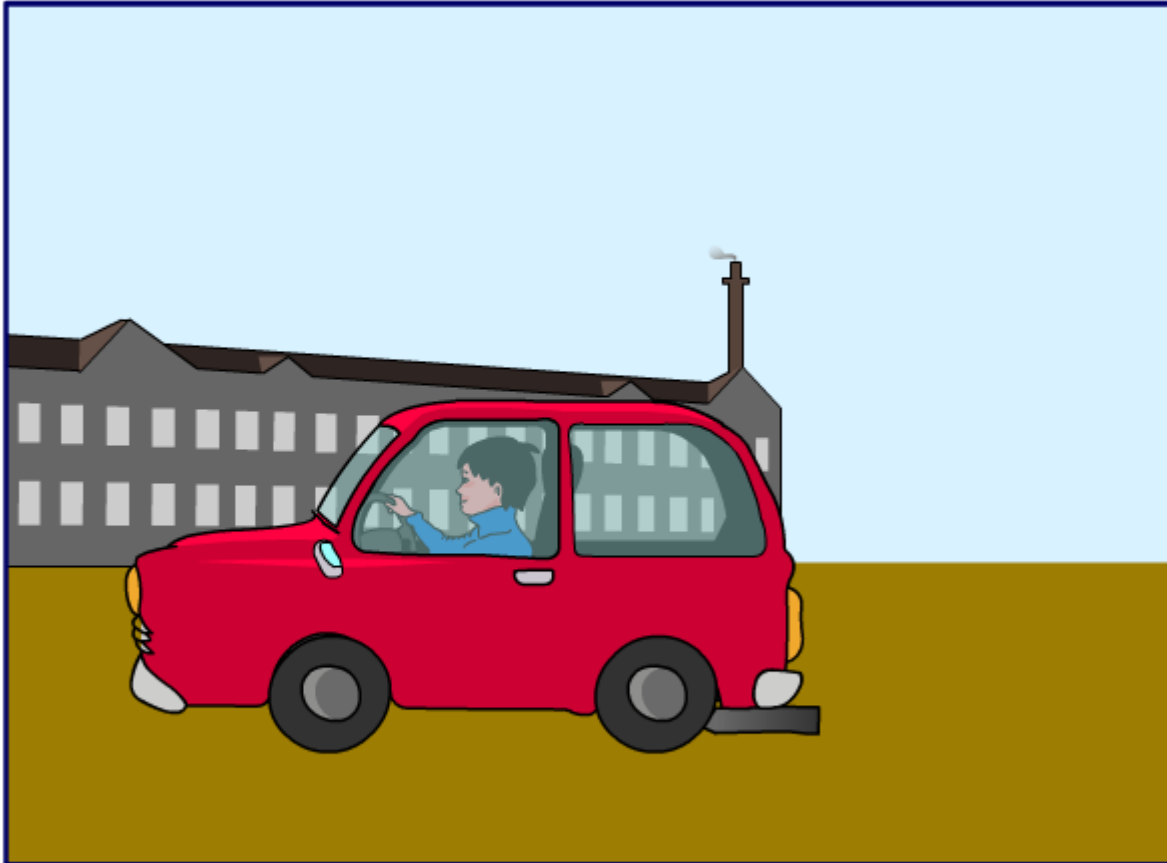
Burning of fossil fuels in power stations and cars forms pollutants such as **sulfur dioxide** and **nitrogen oxides**.

These gases dissolve in rainwater to make sulfuric acid and nitric acid, which are strong acids, so also form acid rain.

Why is acid rain a serious environmental problem?



## What is acid rain?



Acid rain can cause a lot of damage to the environment.

Click "**play**" to find out about the causes and effects of acid rain.



Acid rain has many damaging effects on the environment:

- The acids in acid rain speed up the chemical weathering of rocks and buildings.
- Rivers, lakes and streams become more acidic so that animals and plants cannot live in them.
- Soil that becomes more acidic has fewer nutrients so trees and other plants cannot grow. Acid rain also damages trees by breaking down the waxy coating of leaves.



What can be done to reduce acid rain and its effects?

Governments are working to reduce the emissions of the acidic pollutants produced by burning fossil fuels.

- Sulfur dioxide is formed when coal containing sulfur is burned in power stations. This acidic pollutant can be removed from the gases before they are released into the atmosphere.
- Nitrogen oxides are formed when gasoline burns in a car's engine. Exhaust systems can be fitted with a catalytic converter which turns harmful gases into harmless gases.

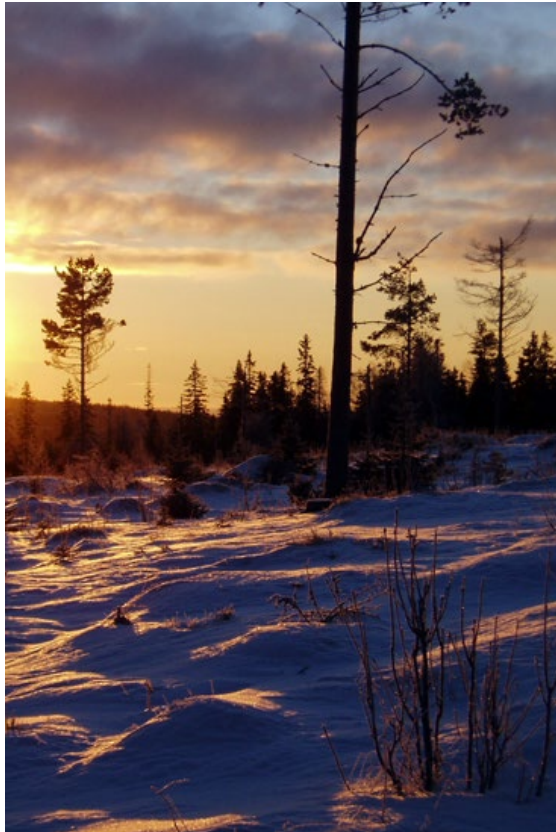


How do these changes help to reduce acid rain?



# Acid rain – a global problem

Forests in Canada have suffered greatly from the damaging effects of acid rain.



However, scientists have shown that the acid rain that falls in Canada is not all produced there. Some of the acidic pollutants are more likely to be from U.S. factories and power stations.

This happens because air pollution can be carried high up into the sky, where it is pushed by strong winds towards other countries.

Is it right that a country can directly cause pollution in another?



## Should countries be made to contain their pollution?

The following people have all been asked if they think that countries should make more of an effort to contain the pollution that they produce, and prevent it from spreading.

Click on each person to find out their opinion.



Is it our responsibility to limit damage caused by acid rain?



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