

# Climate change

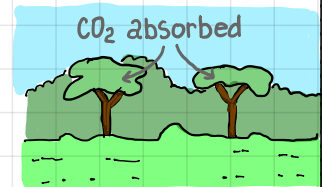
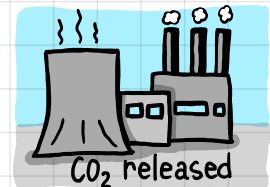
## Greenhouse gases

The three main greenhouse gases are carbon dioxide, water and methane. The amount of water vapour in the atmosphere varies and depends on the temperature of the air.

The **amounts** of carbon dioxide and methane have been **increasing** and this is due to **human activity**.

## Increase in carbon dioxide

Carbon dioxide is increasing due to the **burning** of **fossil fuels** (e.g. coal, oil and natural gas) for transport and electricity. The carbon dioxide released into the atmosphere would normally be reabsorbed by trees (e.g. tropical rainforests). However over the years, large scale **deforestation** has occurred. Deforestation occurs when large areas of forests are burned to provide land for grazing animals. The burning of the forests also releases large amounts of carbon dioxide into the atmosphere.



## Increase in methane

**Methane** is released in agriculture, mainly by growing **rice** in flooded paddy fields. Methane is also released by **cows** farting. Over the years there has been a large increase in intensive farming of cattle.

## Consequence of increasing greenhouse gases

The result of **increasing** levels of **carbon dioxide** and **methane** in the atmosphere means that more long wave radiation is being absorbed by the atmosphere resulting in **increasing** global **temperatures**.

## Summary

Burning of fossil fuels - increase in carbon dioxide levels in atmosphere.  
Deforestation - reduced absorption of carbon dioxide by photosynthesis.  
Burning of forests - increase in carbon dioxide levels in the atmosphere.  
Increase in growing rice - increase in methane levels in atmosphere.  
Intensive livestock production - increase in methane levels in the atmosphere.

# Climate change...

## Possible effects of climate change

Rising temperatures will increase melting of polar ice sheets and glaciers. This will lead to increased sea levels. If sea levels rise there will be an increase in flooding of low lying areas.

Climate change could lead to more severe weather e.g. more storms and unseasonal weather patterns.

Increasing temperatures could change the distribution of animals such as insects. This could affect the distribution of insect borne diseases such as malaria. The behaviour of Polar bears has already been affected. Polar bears hunt on ice floes. As the ice floes decrease Polar bears have started to approach human settlements hunting for food.

## Peer reviewed data

Data collected by scientists have linked increasing carbon dioxide levels with increasing global temperatures. Many scientists believe that the rise in greenhouse gases is linked directly to human activity. The data collected by scientists is reviewed by other scientists who can then decide if the conclusions are valid. This process is called peer review and it allows scientists to refute claims made using poor data or influenced by bias.

## Communication of ideas

Climate change is a complex interaction of factors. It makes it difficult model. As a result there are often stories in the media that are simplified or in some cases biased to a particular view. Sometimes people will base speculation on limited evidence.

It is important that scientists clearly communicate their ideas to the public.

## Climate change uncertainties

There are still uncertainties around our understanding of climate change. It is difficult to predict with certainty by how much the temperature of the atmosphere will increase. Scientists will use simulations to give a best case model, a medium case model and a worst case model. Unfortunately the data from these cases can often be picked out and lead to incorrect reporting in the media.