





THE GREENHOUSE EFFECT

The sun's rays pass through the atmosphere to the earth. When they reach the earth's surface they are reflected and go through the atmosphere to space. However! When the sun's rays are reflected from the earth, GREENHOUSE GASES can trap the heat in the atmosphere.

Without these gases the earth would be very cold – about minus 18 degrees Celsius.

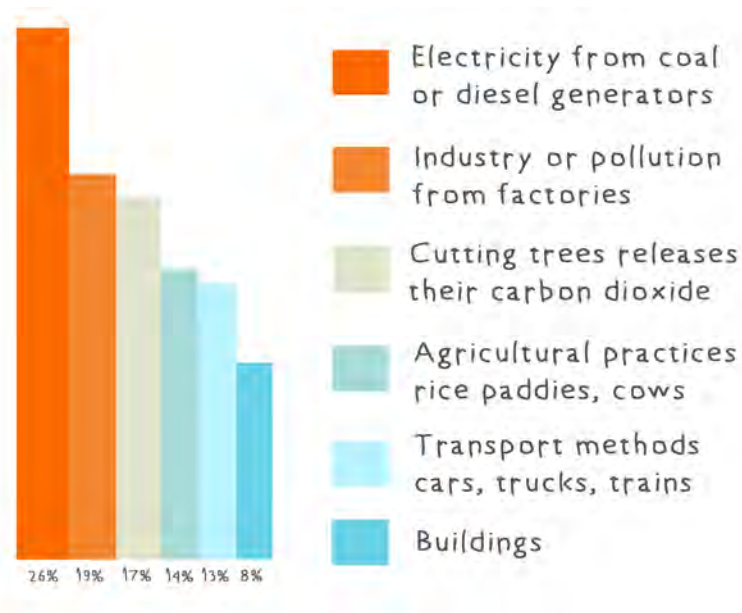
We call this process THE GREENHOUSE EFFECT because it is similar to what happens in a greenhouse. In the atmosphere these greenhouse gases act like a big blanket around the earth, trapping more and more heat from the sun.



CAUSES

HUMAN ACTIVITIES contribute to having more greenhouse gases in the atmosphere.

What do you think the biggest causes are?



The major greenhouse gases are:

1. - Carbon dioxide
2. - Methane
3. - Nitrous oxide
4. - Fluorinated gases
5. - Water vapour








GLOBAL WARMING

We know greenhouse gases are building up in the atmosphere. More heat in the atmosphere causes the planet to warm up. We call this GLOBAL WARMING.

Since 1880, global temperature has increased by almost one degree Celsius in total. How much this continues to rise depends on how many greenhouse gases there will be in the atmosphere.

Temperatures could rise by almost 5 degrees Celsius by the year 2100 (IPCC, AR5). However, countries around the world agreed to try to keep this below 2 degrees.

That may not sound like a lot, but what happens when your body temperature is two degree warmer than its usual temperature? You would immediately fall sick and get a fever.





THE WATER CYCLE

The earth has a limited amount of water. It keeps going around in what we call the "Water Cycle":

1. The sun heats water in rivers, lakes or the ocean. Water **EVAPORATES** becoming water vapour.
2. The vapour rises into the air. When it reaches the colder atmosphere it **CONDENSES** to form clouds.
3. As more water vapour collects in the clouds, the clouds become heavier. When they can't hold the water vapour, water falls back from the clouds back to Earth as **PRECIPITATION** - such as rain, hail or snow.
4. The precipitation **COLLECTS** in the oceans, lakes or rivers, or may end up on land.

We know that changes in the water cycle are increasing the risks of floods and droughts (climaterealityproject).

1. Higher temperatures due to global warming are increasing evaporation.
2. Warmer air can hold more water vapour. This can result in more intense rainstorms.
3. Intense rainstorms are more likely to lead to **FLOODING**.
4. Also, increased temperatures increase the likelihood of **DROUGHT**.

Global warming is effecting weather patterns around the world. This is what we call **CLIMATE CHANGE**. Climate Change is exacerbating a wide range of weather related hazards and impacts.