Global Warming

Global warming refers to the increase in the temperature of the Earth's surface, atmosphere, and oceans over time. Globally, the average temperature today is about 1°C (1.8°F) higher (in some parts of the world it is higher than this, and in some places it is lower) than it was in the year 1750. This was just before the Industrial Revolution took off and people started burning a lot of coal. It is said that by 2100 temperatures could be between 2°C (3.6°F) and 4°C (7.2°F) higher than they were before 1750.

What causes global warming?

1. Burning Fossil Fuels – burning gasoline to fuel vehicles and natural gas to keep houses warm contribute to global warming. However, the heat from the burning itself only causes a tiny rise in temperature. The gases released into the atmosphere during this process act like an invisible 'blanket', trapping heat from the sun and warming the Earth. This is known as the "Greenhouse Effect".
2. Farming – the gas produced by cow's digestion contributes to global warming as cows release a lot of methane (a greenhouse gas) into the atmosphere.
3. Deforestation – forests can absorb huge amounts of carbon dioxide and releasing oxygen back into it. In fact, the Amazon rainforest is so good at its job that it acts like an air conditioner for our planet and limits climate change. However, since so many forests are being cut down to make wood, palm oil, etc., they are not able to do their job properly.

The Earth has experienced many tropical climates and ice ages over the billions of years that it's been in existence, so why is now so different? Over the last 150 years human activity has meant we are releasing a huge amount of harmful gas into the Earth's atmosphere, and records show that the global temperatures are rising more rapidly since this time.

The effects of the change in temperatures can be seen in ways, the most easily through the melting of ice caps around the world. This is causing sea levels to rise. Ice on land (Greenland) is melting into the sea. Water also expands in size as it gets warmer, which causes further rises.

The Greenhouse Effect

Coal-burning power plants, car exhausts, factory smokestacks, and other manmade waste gas vents give off about 23 billion tons of carbon dioxide (CO_2) and other greenhouse gases into the Earth's atmosphere each year. The amount of CO_2 in the air is about 31% more than it was around 1750. About three-quarters of the CO_2 that people have put in the air during the past 20 years are due to burning fossil fuel like coal or oil. The rest mostly comes from changes in how land is used, like cutting down trees.

What are the consequences of global warming?

- Sea levels will rise causing coastal areas to flood
- Weather will become more extreme and unpredictable
- Deserts may increase in size
- Colder areas will warm up faster than warm areas
- Farming may not produce as much food

How does global warming affect wildlife?

- Polar animals are at a huge risk. It is believed that Arctic sea ice is melting at a rate of 9% per decade. Polar bears depend on sea ice to hunt, raise their young, and rest.
- Orangutans living in rainforests in Indonesia are under threat as their habitat is cut down and droughts are causing more bushfires.
- Sea turtles are threatened by rising sea levels as they depend on nesting beaches to lay their eggs. The temperature of the nest also determines if the eggs are male or female, which means that rising temperatures are causing more females to be born, threatening future populations.

What can be done to slow down global warming?

People in government and the Intergovernmental Panel on Climate Change (IPCC) are talking about global warming. But governments, companies, and other people do not agree on what to do about it. Some things that could reduce warming are to burn fewer fossil fuels, grow more trees, eat less meat, and put some carbon dioxide back in the ground. Shading the Earth from some sunlight (geoengineering) could also reduce warming but it is not fully understood how it might change weather in other ways. The Kyoto Protocol and Paris Agreement try to reduce pollution from the burning of fossil fuels.