

CLIMATE CHANGE FACTSHEET



(‘Climate Change/Last Chance’, photo by Nagy István, accessed via Flickr.com Creative Commons)

What is Climate Change?

Weather patterns, when measured over a long period of time, are referred to as a ‘climate’. Having one or two rainy days together isn’t a ‘climate’; this is simply a period of rainy weather. Climate refers to the likelihood of particular types of weather appearing in particular parts of the world most of the time, in largely predictable patterns. For example, the UK and Ireland have a ‘temperate’ climate, which means we tend to have distinct differences between our seasons, warm summers and cold winters, but no true extremes of temperature. Other parts of the world exhibit different sorts of climate. For instance, the poles (the North Pole and the South Pole) stay mostly under ice all year round, with temperatures so low that they are rarely, if ever, experienced in temperate parts of the world. Climate is studied and observed by scientists over long periods of time and patterns can often be seen in the data, but that doesn’t mean it never changes; it has done so in the past, and it is doing so in the present. Climate change, then, refers to variations in climate which take place over an extended time period (many thousands of years, in some cases), and it can have many causes. These include volcanic activity and tectonic disturbance, solar radiation variation, and the normal side-effects of human, animal and plant activity.

What is Global Warming?

Global warming refers to climate change which is caused by the activities of humans, particularly the emissions caused by heavy industry and transportation, which rely on the burning of fossil fuels (coal, oil, natural gas). All biological activity on earth creates emissions of one sort or another; human activity in the past couple of centuries, however, has seen a sudden, sharp increase in output of gases such as carbon dioxide and methane into the earth’s atmosphere, which has given rise to the ‘greenhouse gas effect’ – in other words, it has upset the natural balance of gases in the atmosphere which govern the earth’s temperature, which has started a cycle of warming that is hard to stop.

What Does Global Warming Do?

Global warming – as its name suggests – raises the earth’s temperature. Even a slight change in temperature can have huge effects. Warming temperatures can mean increased levels of melting at the earth’s icy poles which can lead to raised sea levels, as well as interference with weather patterns and an increase in instances of extreme weather such as hurricanes,

tornadoes, floods, droughts and increased snowfall. It may also lead to increased desertification in drier areas of the world. In terms of how it will affect humans, we may see a threat to food security (the certainty that crops will be harvested at the expected times) and a threat to habitat (the places on earth where we live).

What Can We Do About It?

Being aware of global warming is the first thing we can do. Science overwhelmingly presents us with evidence that it is happening, but some critics say that it is not, and that all the effects we are already seeing can be explained through other means. Until convincing proof is provided that the science is flawed, it would be safer to believe the science.

Reducing carbon output is a step we can take, as a species: planting more trees, reducing our usage of fossil fuels, reducing our reliance on plastic and plastic products, using more renewable resources and recycling as much as we can.

Geoengineering is another suggested response to global warming. Geoengineering means the deliberate manipulation of the environment to create particular results. Doing things like placing substances into the atmosphere to reflect the sun's energy (heat and light) away from the earth or finding ways to remove the carbon from the earth's atmosphere are examples of geoengineering.

Activities:

How many ways to help the fight against global warming can you think of? These can be large things or things we can all do in our own homes.

Imagine you are a creature who has always lived in an icy, cold environment. What sort of things would you eat? What sort of fur/coat would you have? How many predators would you have? How big would you be? Think of a name for your creature, and draw a picture of it.

Now imagine your creature's environment begins to change – the ice begins to melt, and the world you are used to starts to warm up. What might happen to the things (the other animals, perhaps) that you eat? What sort of effect would it have on your coat of fur? Would it change the predators who hunt you? How do you think your creature would feel?

Now, imagine you are a person like Igimaq from *The Eye of the North*. How would climate change – including the ways in which it is described in the book – affect you, your way of life, and your community?