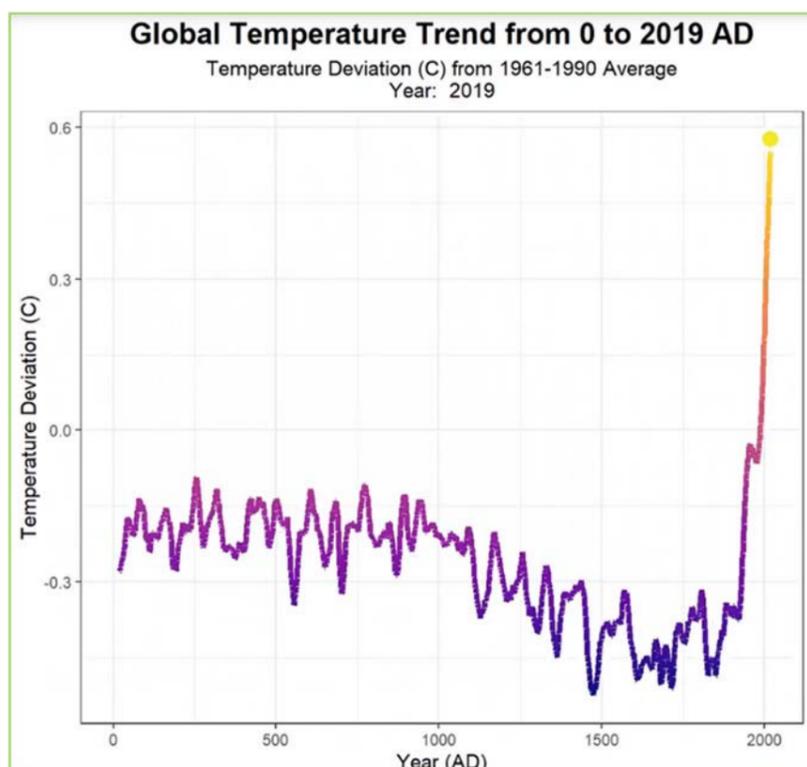
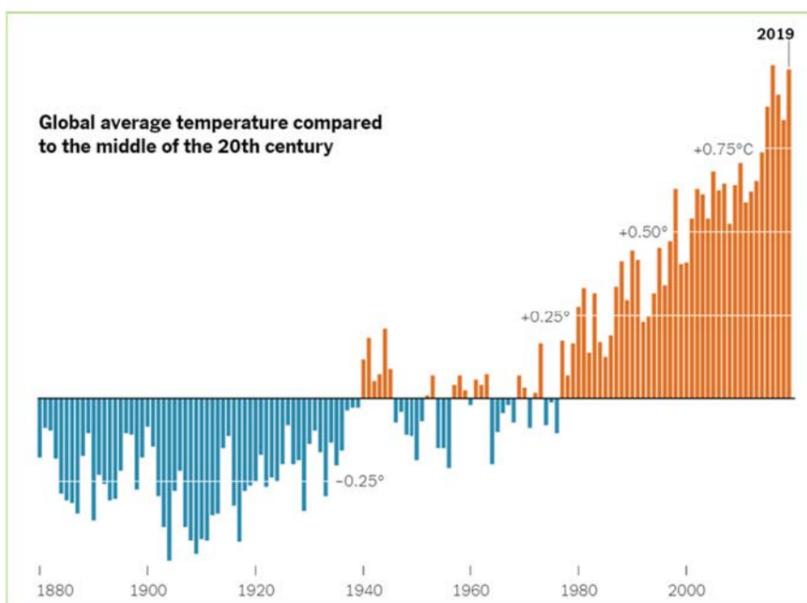


How do we know our climate has changed?

Average global temperatures have increased by **1° c since 1880**. The world's ice sheets and glaciers are melting e.g. Arctic sea ice has decreased by **10% over the last 30 years**. Average global sea level has risen by **10-20cm in the last 100 years**.

The Earth's climate has changed many times over its 4.5 billion years. Oxygen trapped in ice cores tell scientists what the global temperature was thousands of years ago.



Key Terms

Adaptation	Actions taken to adjust to natural events such as climate change, to reduce potential damage, limit the impacts, take advantage of opportunities, or cope with the consequences.
Climate Change	A long-term change in the earth's climate, especially a change due to an increase in the average atmospheric temperature.
Environmental Racism	This refers to how people of colour and members of low-socioeconomic backgrounds are burdened with disproportionate numbers of environmental hazards, both intentionally and unintentionally.
Extreme Weather	Extreme weather is when a weather event is significantly different from the average or usual weather pattern. This may take place over one day or a period of time.
Glacial Period	An interval of time (thousands of years) within an ice age that is marked by colder temperatures and glacier advances. Interglacial periods, on the other hand, are periods of warmer climate between glacial periods.
International Agreements	A formal understanding or commitment between two or more countries.
Mitigation	Action taken to reduce or eliminate the long-term risk to human life and property from natural hazards, such as building earthquake-proof buildings or making international agreements about carbon reduction targets.
Orbital Changes	Changes in the pathway of the Earth around the Sun.
Quaternary Period	The period of geological time from about 2.6 million years ago to the present. It is characterized by the appearance and development of humans and includes the Pleistocene and Holocene Epochs.

How can humans mitigate against climate change?

Carbon capture involves new technology designed to reduce climate change.	Planting trees increases the amount of carbon that is absorbed from the atmosphere.
International agreements aim to cut emissions by signing deals and by setting targets.	Renewable energy replaces fossil fuels with clean/natural sources of energy that doesn't contribute to greenhouse gasses.

What causes climate change?

Natural	Human
Climate change is caused naturally by long-term changes to the Earth's orbit around the sun. Sometimes it is closer and therefore the Earth's atmosphere is warmer. The sun also emits sun spots, which are large concentrations of energy, when it emits a lot of these, it heat's up the Earth. Finally, super volcanic eruptions cause huge amounts of ash to be emitted, these actually reflect the Sun's energy and causes the Earth to cool.	Since the industrial revolution humans have been burning fossil fuels for energy. These fuels (gas, coal and oil) emit greenhouse gases (e.g. CO2). This makes the Earth's atmosphere thicker, and therefore traps the heat from the sun and causes the atmosphere to increase. Humans are burning fossil fuels on a large scale for heating, manufacturing and transport.

How is the UK responding to climate change?

The UK was the first country in the world to create a legally-binding commitment to cut greenhouse gas emissions. This was called the **Climate Change Act of 2008**. The UK aim to achieve "**net zero**" greenhouse has emissions. This is where any greenhouse gases emitted by 2050 are balanced by removing and absorbing the same amount of carbon from the atmosphere.

The UK is one of the world's greatest contributors to global warming over time. In fact, the **richest 1% of the world's population are responsible for 2 x the carbon pollution from the world's poorest 31. billion**, from 1990 to 2015.

How can humans adapt to climate change?

Managing water supplies will help reduce the water use and make more available for essential purposes.	Building sea walls allows the world's cities to be better protected from sea level rise and gives more.
Increasing the amount of drought resistant crops so farmers use less water but can still produce a good yield to feed people.	Changing building design like incorporating air conditioning and painting buildings white to reflect the heat.