GCSE Knowledge Organiser: The Challenge of Natural Hazards — Weather Hazards continued (Paper 1)

Air Masses bring different weather to the UK.. Jet streams can also become stuck, bringing the same weather for long periods e.g. a heatwave.

Evidence for increased extreme weather:

1) More frequent extreme weather events e.g. blizzards

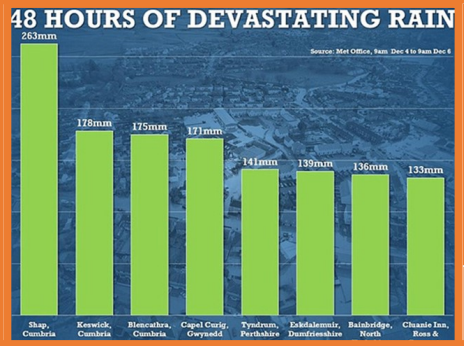
2) Higher number of extreme rainfall days.

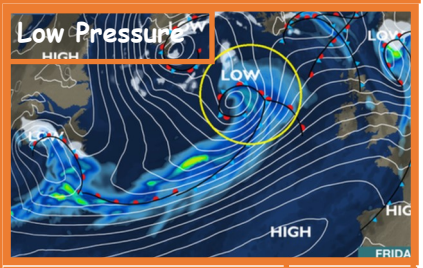
3) Increasing mean annual temperature.

Key Terms:

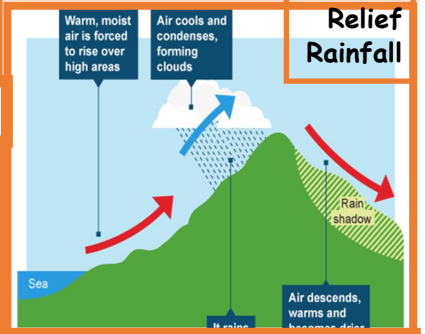
Extreme Weather: This is when a weather event is significantly different from the average or usual weather pattern, and is especially severe or unseasonal.
This may take place over one day or a period of time.

Case Study: Storm Desmond 2015





Causes of Storm Desmond 2015



Impacts:

Social: 5200 flooded homes, 1 man died and 50,000 people without power.

Environmental: Water flowed in Malham Cove for the first time in living memory and thousands of tonnes of sediment were deposited on floodplains across the region.

Economic: businesses lost income due to closure and up to £2.3 billion damage was caused.

Responses:

More than 100 flood warnings were issued.

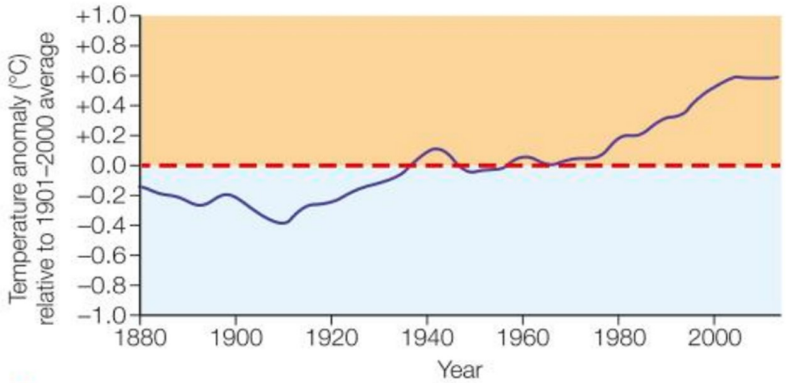
200 military personnel were mobilised in an emergency response, including Chinook helicopters.

50 high volume pumps were moved to the north-west.

The Royal Engineers were deployed to help the emergency response., assessing 'at risk buildings'.

Satellite monitoring, urban planning, computer modelling, flood defences and preparation are all flood responses.

GCSE Knowledge Organiser: Climate Change (Paper 1)



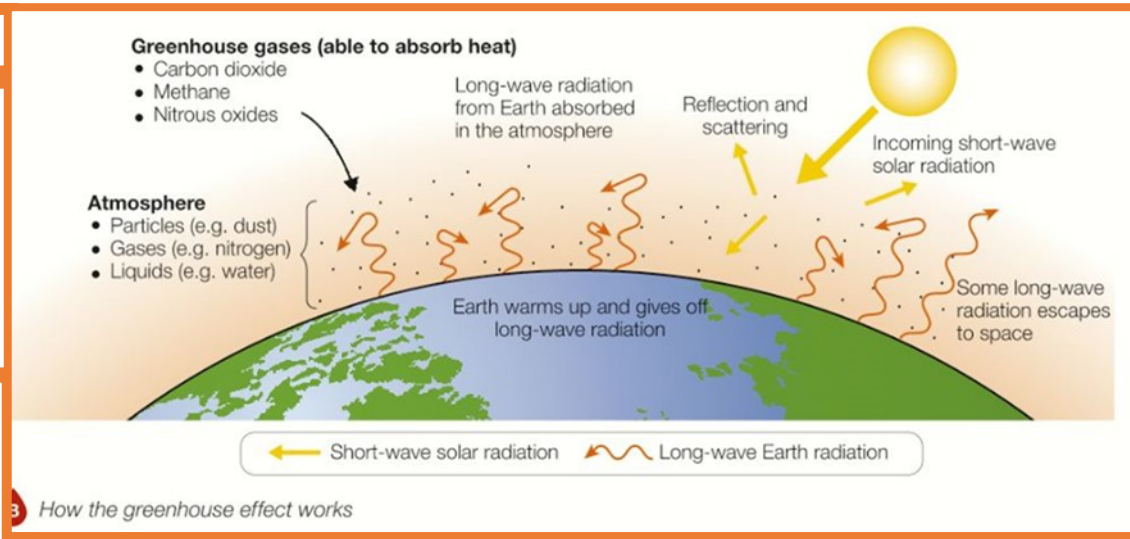
2010-2019 was the hottest decade on record.

2016 was the hottest year on record.

Collecting Evidence for Climate Change:

- Arctic Ice Retreat
- Ice Cores
- Rising Sea Levels
- Old paintings/ photos
- Tree Rings

A further source of evidence is rising sea level. This occurs because of melting glaciers and sea ice releasing water into seas and oceans, increasing the quantity. Warmer water can also expand, increasing volume and seeming to rise. Sea level has risen by 19cm over 100 years.

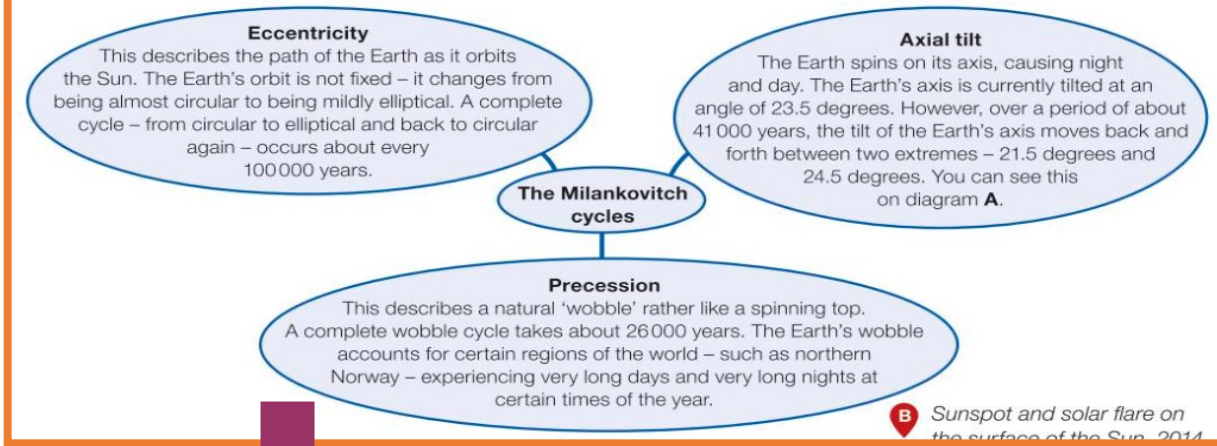


B How the greenhouse effect works

Effects of Climate Change:

- Sea level rise
- Melting ice caps
- Diseases like malaria spread as cooler places get warmer
- Species extinction as adaptation cannot happen fast enough
- Reduced crop yields

Physical Causes of Climate Change:



B Sunspot and solar flare on the surface of the Sun, 2014

Solar Activity

Every 11 years, sunspots alternate from maximum to minimum heat, causing a change in output. This period is called a sunspot cycle.

Volcanic Eruptions

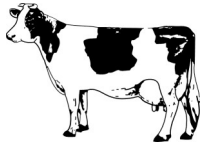
Ash which is emitted during an eruption can block out the sun's energy, reducing temperatures. Sulphur particles can also reflect radiation, causing a longer-term fall in temperature.

Human Causes of Climate Change:

Agriculture

Large amounts of **cattle** (cows) bred for beef release methane on an unnatural scale. This adds to greenhouse gases and increases climate change.

Rice is the second most widely grown crop on the planet (after wheat). As it grows, it produces methane which is a greenhouse gas, therefore increasing atmospheric concentration and climate change.



Deforestation

Cutting down trees removes a carbon sink from the environment. It also releases carbon dioxide into the atmosphere as the trees are often burned once they have been cut down.

Burning Fossil Fuels

Coal, oil and natural gas all release carbon dioxide when burned, increasing greenhouse gases.

Responses

Mitigation: Reducing the severity of climate change.

- Alternative energy e.g. solar.
- Replanting Trees
- International Agreements e.g. Paris

Adaptation: Responding to changes and adjusting in order to survive.

- Changing agricultural systems.
- Managing water supplies
- Reducing risk from sea level rise e.g. flood defence