

Geography Knowledge Map: Year 9: Weather and Weather Hazards

- Weather** = the state of the atmosphere around us. Is it warm? Is it wet? Is it windy? This can change very quickly, hour to hour.
- Climate** = the average weather in a place. It tells what the weather is usually like there. This changes very slowly, over many decades too centuries.

The **Sun** is responsible for all of our weather.

- 1.
2. The sun heats up the Earth – but unevenly
3. Earth heats up the air, which rises
4. Rising air leads to wind, because air from a colder place flows in to replace it.
5. The sun's heat also causes water to evaporate, producing water vapour.
6. When the air rises it cools. So the water vapour condenses, giving clouds of water droplets. Droplets join to make larger drops, which fall as rain (or snow, sleet or hail)

All rain is created in the same way.

1. The Sun warms the water in the oceans, rivers and lakes.
2. Some water evaporates to form an invisible gas called water vapour. It goes into the air.
3. When the air rises, it cools. So the water vapour condenses to form clouds of water droplets.
4. Droplets join together to form bigger droplets. When these are heavy enough they fall as rain.

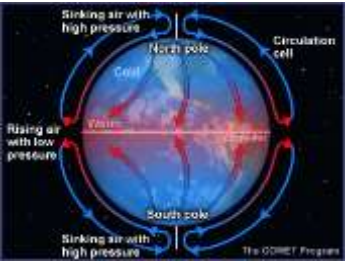
There are 3 types of rain.

1. Convictional
2. Relief
3. Frontal

Some parts of the Earth are hot. (Equator)
Some parts of the Earth are cold. (Poles)
This causes air to move around. Warm air always moves from a warmer place to a colder one. So the cold air is pushed towards the warmer place.

Air masses – Huge blocks of air moving around the Earth.

The UK is impacted upon by 4 different air masses, originating in 4 different parts of the Earth, each bringing with it different weather conditions.



Climate varies across the British Isles.



- SE – Warm Summers, Cold Winters
- SW – Warm Summers, Mild Winters
- NW – Cool Summers, Mild Winters
- NE – Cool Summers, Cold Winters

There are 4 key factors that influence climate.

- Latitude.
- Earth's tilt
- Distance from the coast.
- Altitude

There are 5 common weather hazards the UK faces...

- Thunderstorms
- Prolonged rainfall
- Drought and extreme heat
- Heavy snow and extreme cold
- Strong winds.

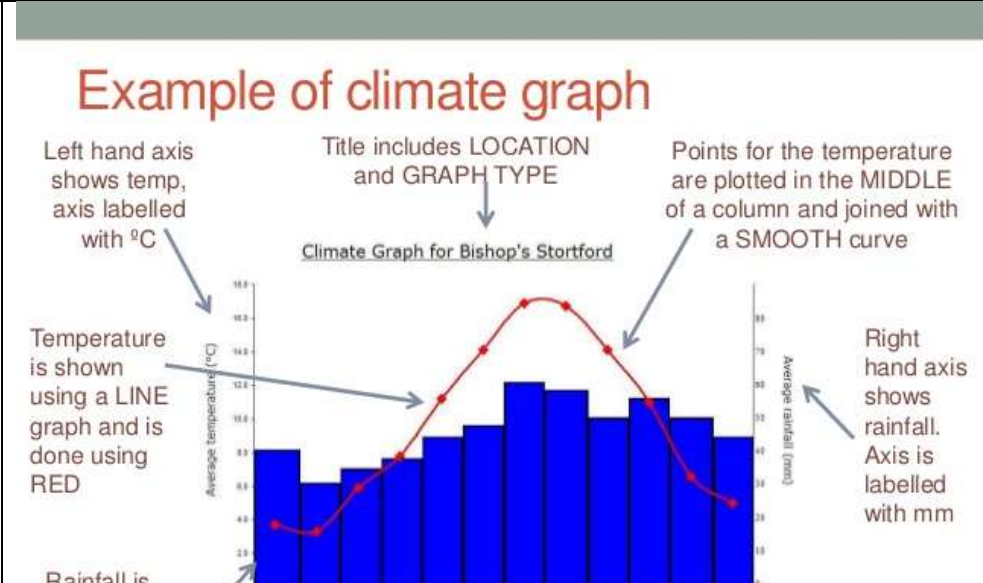
Impacts of the Somerset Levels floods.

- Over 600 homes were flooded.
- Local people evacuated to temporary accommodation for several months
- Over 140 000 hectares of agricultural land was flooded for between 3 and 4 weeks.
- Over 1000 livestock evacuated.
- Floodwaters were heavily contaminated with sewage, oil and chemicals.
- Stagnant water that had sat for several months had to be reoxygenated before being pumped back into rivers.

A hurricane is formed over water, getting their energy from warm water. While tornados are formed over land, getting their energy from the mixing of warm and cold air.

- Hurricanes = Atlantic Ocean/Caribbean Sea
- Tropical Cyclones = Indian Ocean
- Typhoons = Pacific Ocean

Hurricanes/cyclones and typhoons all form over warm oceans. The temperature of the water in the oceans has to be at least 27 °C. Tornados form over land. When the ground is heated, it causes the air above to warm up and rise. It meets sinking cold air in the atmosphere. This difference in temperature between the 2 types of air creates a difference in pressure and allows the air to spin, creating our tornado.



Impacts of hurricane Katrina

- Hundreds died.
- Thousands of people homeless.
- Polluted water.
- Roads collapsed.
- Houses and other structures were destroyed.

