

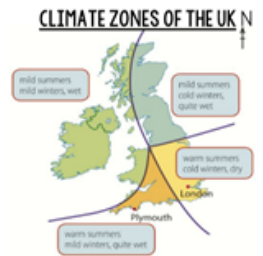
Year 8— Topic 1—How does weather affects us?

Keywords

- Climate - describes average weather conditions over longer periods and over large areas
- Weather - describes the day-to-day conditions of the atmosphere
- Latitude – imaginary lines that go around the Earth i.e. Equator
- Continentality - is a climate condition in which it takes less energy to heat a location
- Maritime - relating to or bordering on the sea
- Sustainability - is the practice of using natural resources responsibly today, so they are available for future generations tomorrow
- Heatwave - an extended period of hot weather relative to the expected conditions of the area at that time of year
- Drought - period of time when an area or region experiences below-normal precipitation
- low pressure - a region where the atmospheric pressure is lower than that of surrounding locations
- high pressure - a region where the atmospheric pressure is higher than that of surrounding locations
- Tropical storm - very powerful low-pressure weather system.
- climate change - the long-term alteration of temperature and typical weather patterns in a place
- depression - an area of low pressure which moves from west to east in the northern hemisphere
- anticyclones - weather phenomenon defined as a large-scale circulation of winds around a central region of high atmospheric pressure
- Microclimate - A microclimate is a climate on a very small scale and differs from the climate of the surrounding area.
- Convective rainfall - type of rainfall is created by the sun heating the land and air. The air then condenses and causes rain
- frontal rainfall - type of rainfall is created by air cooling as it goes over a highland area
- Short term – responses that occur in the hours and days after an event
- long term - responses that occur in the months or even years after an event
- management – How human try to control or respond to an event
- response – How humans try to manage and help after an event

Factors that affect climate

- Altitude—How high is it above sea level
- Latitude—Distance from the equator
- Distance from sea
- Ocean currents



Weather	Definition	Measurements
Precipitation	How much water is falling from the sky	Rain Gauge
Temperature	How hot or cold it is	Thermometer
Wind direction	What direction is the wind coming from	Wind Vane
Wind speed	How fast is the wind blowing	Anemometer

Microclimate	Meaning	How will it affect the local climate?
Aspect	direction a place faces	Places which face south are warmer than places which face north.
Buildings	Whether there are buildings in the local area and how tall they are.	Buildings absorb heat so they can make nearby places warmer. They can also speed up the wind.
Surface colour	Surface is a dark colour (like tarmac) or a light colour (like grass)	Darker colour surfaces absorb more heat so warmer. Lighter colours reflect heat so cooler.
Shelter	Whether a place has protection from the wind.	Sheltered places have lower wind speeds and tend to be slightly warmer than unsheltered spots.
Physical features	Whether there are natural features such as woods, lakes or hills nearby.	Wooded areas tend to be cooler and less windy, areas near lakes tend to be cooler and hill-top locations are windier and colder than valleys.

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Tropical Storms!

Tropical Storms are a climatic hazard which forms over tropical or subtropical waters.

Formation of Tropical Storms

1	The sun's rays heats large areas of ocean in the summer. This causes warm, moist air to rise over the particular spots
2	Once the temperature is 27°, the rising warm moist air leads to a low pressure. This eventually turns into a thunderstorm. This causes air to be sucked in from the trade winds.
3	With trade winds blowing in the opposite direction and the rotation of earth involved (Coriolis effect), the thunderstorm will eventually start to spin.
4	When the storm begins to spin faster than 74mph, a tropical storm (such as a hurricane) is officially born.
5	With the tropical storm growing in power, more cool air sinks in the centre of the storm, creating calm, clear condition called the eye of the storm.
6	When the tropical storm hit land, it loses its energy source (the warm ocean) and it begins to lose strength. Eventually it will 'blow itself out'.

Case Study: Typhoon Haiyan 2013

Causes

Started as a tropical depression on 2nd November 2013 and gained strength. Became a Category 5 "super typhoon".

Effects	Management
<ul style="list-style-type: none"> •Almost 4,000 deaths. •130,000 homes destroyed •Water and sewerage systems destroyed •caused diseases. •Emotional grief for lost ones. 	<ul style="list-style-type: none"> •The UN raised £190m in aid. •USA & UK sent helicopter carrier ships deliver aid remote areas. •Education on typhoon preparedness.

What is the Beast from the East

The 'Beast from the East' was the phrase used to describe the cold and wintry conditions that the UK experienced from the 24th February 2018 to the 4th March 2018.

The wintry conditions were brought to the UK from Europe. Cold air was drawn over from Europe bringing with it snow, ice, hail and cold conditions.

The term 'Beast from the East' has been used before, and the UK has often experienced European wintry conditions

UK heat wave 2022

To be classed as a heatwave, temperatures in the region must remain at 26oC for three days in a row.

There have been 3 factors that has caused the heatwave

- 1.The jet stream which brings strong winds across the Atlantic with moisture in it
2. Less evaporation and rainfall.
- 3.strong winds brought up hot air from southern Spain

What is Climate Change?

Climate change is a large-scale, long-term shift in the planet's weather patterns or average temperatures. Earth has had tropical climates and ice ages many times in its 4.5 billion years.

Global impacts of climate change

The impact of rising temperatures is affecting the world socially, economically and environmentally in several potential problematic ways.

Extreme Weather	Climate is causing more unpredictable and severe weather events. This includes more frequent and powerful tropical storms; more extreme heatwaves and lasting droughts. E.g. Typhoon Haiyan 2013
Rising sea levels	Sea levels have risen by 20 cm since 1901. due to thermal expansion, melting glaciers and ice caps. Some coastal countries are now disappearing such as the Maldives in the Indian Ocean.
Food supply	Warmer temperatures and changing rainfall will make it harder to produce a reliable source of food to sustain a rising global population. E.g. In 2011, Russia banned crop exports after a decline in yield.
Plants and Animals	About a quarter of animals and plants on Earth could become extinct. With warmer temperatures and changing rainfall environments will no longer be able to provide for the world's fragile ecosystems.
Water Supply	People need freshwater to drink but with 1 billion people predicted to not have excess to enough water by 2025 due to climate change, this might cause several social, economic and environmental problems. E.g. fishing, irrigation and sanitation.