

Year 7 Geography - Weather and Climate Knowledge Organiser

Key Terms

Weather - The day to day conditions of the atmosphere. Example: wind, rain, snow.

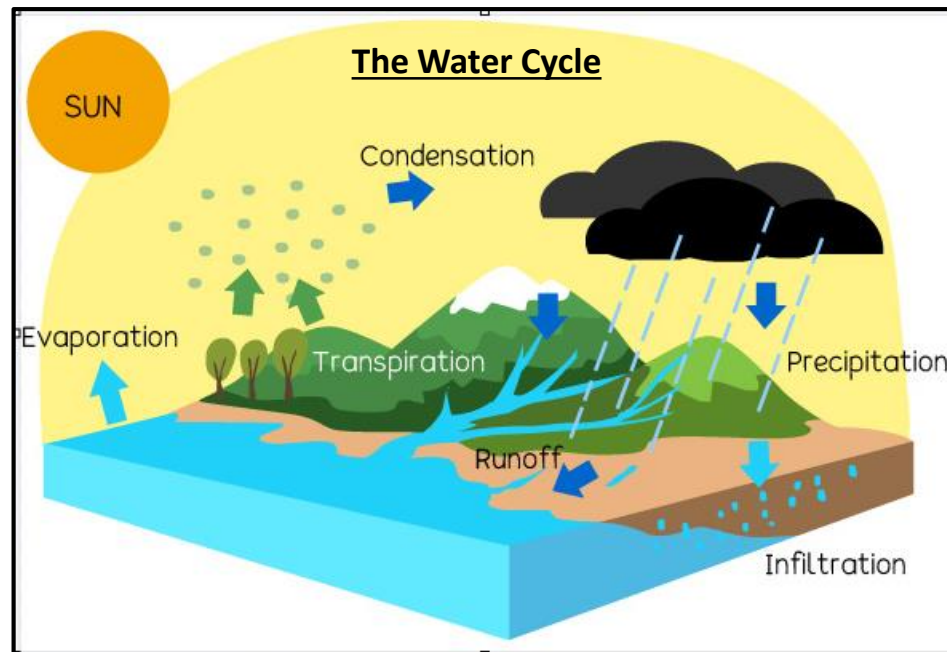
Climate - The changes of the atmospheric conditions on a long term scale. They are the average conditions over a number of years .Example: you go Spain in summer because you expect it to be hot.

Precipitation - Any moisture that falls to earth. Example: rain, snow, sleet, hail etc.

Meteorology - The scientific study of weather. Meteorologists are scientists that study the weather.

Forecast – this is when meteorologists use data, maps and satellite to predict what the weather will be like

Microclimate – How the climate in an area can change due to different factors. For example tarmac stores the suns energy making it warmer. Buildings can cast shade making the area underneath cooler.



Describing the Weather

The map shows weather in England to be mostly cloudy with sunny spells. With temperatures ranging from 6 – 9 degrees Celsius.

In Scotland heavy rain is forecast and northerly winds blowing at 14 – 17 mph.

Wales will be mostly cloudy with dark clouds to the west. The temperature will be between 9-10 degrees Celsius.



Light rain shower (day)	Drizzle	Light rain
Heavy rain shower (night)	Heavy rain shower (day)	Heavy rain

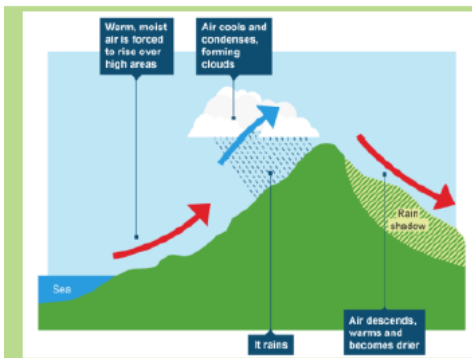
Describing the Water Cycle

- Energy from the Sun heats the surface of the Earth and water **evaporates** from the sea/lakes. The air rises as it is less dense.
- **Condensation** occurs when water vapour is turned back into water droplets as it cools down forming clouds.
- **Precipitation** occurs as water droplets get bigger and heavier then they begin to fall as rain, snow and sleet, etc.
- When the water falls back to earth...
- Some gets **intercepted** by plants and trees which in turn can evaporate and go back into the sky. This is known as **transpiration**.
- Some water will land on the ground and run across the surface to rivers or lakes.
- Some will soak into the ground and become ground water this is known as **infiltration**.

Measuring the Weather

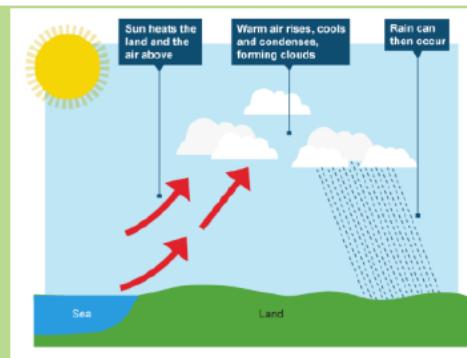
Temperature	Temperature is a degree of hotness or coldness that can be measured using a thermometer.
Wind Direction & Wind Speed	Wind direction is reported by the direction from which it originates. Wind speed is measured in km/h. Measured using an Anemometer
Rain Gauge	A device for collecting and measuring the amount of rain which falls
Barometer	An instrument measuring atmospheric pressure, used especially in forecasting the weather
Oktas Scale	An okta is a unit of measurement used to describe the amount of cloud cover at any given location such as a weather station. Sky conditions are estimated in terms of how many eighths of the sky are covered in cloud.

Types of Rainfall



Relief Rainfall

Prevailing winds bring warm, moist air to western Britain. Air is forced to rise over high areas. Air cools and condenses. Clouds form and it rains. Air descends on the other side of the mountains. It warms up and therefore becomes drier.



Convectional rainfall

When the land warms up, it heats the air above it. This causes the air to expand and rise. As the air rises it cools and condenses. If this process continues then rain will fall. This type of rainfall is very common in tropical areas but also in areas such as South East England during warm sunny spells.

What affects climate?

Altitude	The higher you are above sea level, the colder it is. The temperature falls by about 1°C every 100 meters. This is why sometimes there is snow on top of Ben Nevis up until late spring.
Prevailing wind	Prevailing wind is the most common wind direction. If the prevailing wind direction is over water (sea/ocean), it brings rain. If the prevailing wind direction is over land, it brings dry air. In the UK, the prevailing wind is from the SW, over the Atlantic Ocean = moist (wet) air which is why we have lots of rain.
Latitude	Latitude means how far a place is from the equator. Far from the equator (e.g. poles) it is very cold. This is because the sun's energy travels further and is diffused by the angle it hits the poles. At the equator it is very hot. This is because there is direct sunlight which shines directly onto a small area = hot.

UK Extreme Weather: Heatwave 2022

Cause	The jet stream (the high altitude east to west winds) stayed further north over Iceland the UK allowing a high pressure system to move up from the tropics bringing prolonged hot and dry weather to the UK.
Effect	<ul style="list-style-type: none"> • Lots of sales of parasols and paddling pools. • Campsites fully booked and more people holidaying in the UK instead of going abroad. • Some animals died in the heat. Especially after being locked in hot cars. • Supermarkets ran out of BBQ foods due to a high meat demand.
Response	<ul style="list-style-type: none"> • People educated and reminded to stay hydrated. Free water was given out in some areas. • Hosepipe bans in place to preserve water. • Paramedics deployed in public areas to help ill people.