

Weather Knowledge Organiser

Weather & Climate

Weather: describes the **current condition** of the atmosphere.

e.g. the weather today in London is sunny and warm.

Climate: means the **average weather** conditions in a particular location.

e.g. Ghana has a tropical climate

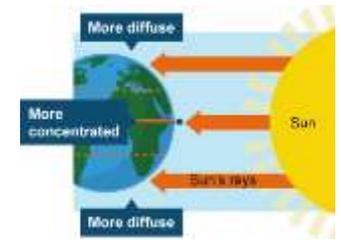
Why is weather important?

Weather affects us in many ways. It affects what we do and what we wear, how we travel and even our moods.

- Farming
- Transport
- Clothing
- Tourism
- Health
- Sport
- Industry
- Work/jobs
- Water supply

Factors affecting climate

Latitude - Locations that are further north receive less concentrated energy from the Sun. The equator lies directly underneath the Sun and so countries that fall on the equator receive the strongest solar energy.

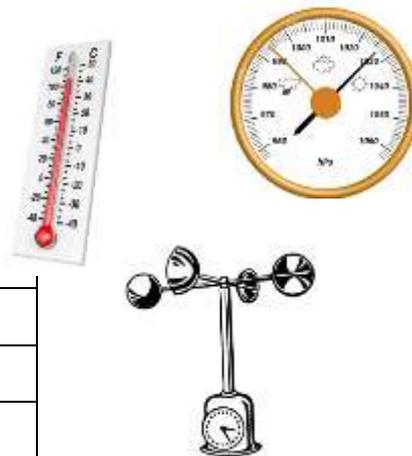


Air masses - A large body of air with similar characteristics is called an air mass. The temperature of the air and the amount of rainfall partly depend on where the air has come from. Looking at where the air has come from helps to explain the characteristics of the weather.

Measuring weather

Meteorologists measure weather conditions in different places and use this information to report and make forecasts about future weather conditions. This is useful because people can be warned about hazardous weather conditions such as storms and floods.

Instrument	What does it measure
Rain gauge	Amount of rainfall
Thermometer	Temperature
Barometer	Air pressure
Anemometer	Wind speed
Wind vane	Wind direction
Sunshine recorder	Amount of sun



Altitude - Temperatures decrease with altitude. There is a 1°C drop in temperature for every increase of 100 m in height. This is because the air is less dense in higher altitudes.

Distance from the sea - Coastal areas are most affected by the sea. The sea takes longer to heat up and cool down than land. So, in the winter the sea keeps coastal areas warm and in summer, it cools them down.

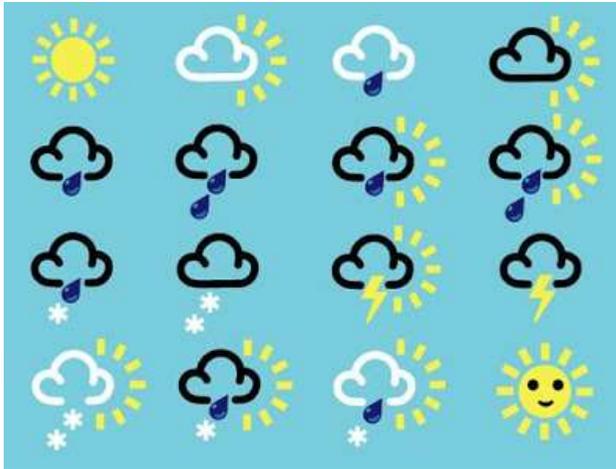
Ocean currents - The effect that **ocean currents** have on the temperature depends on whether the ocean current is hot or cold. Britain is on the same latitude as Siberia and parts of Russia, yet it does not suffer the same long, harsh winters. Britain's mild climate is partly due to the Gulf Stream, a large Atlantic Ocean current of warm water from the Gulf of Mexico.



Weather Knowledge Organiser

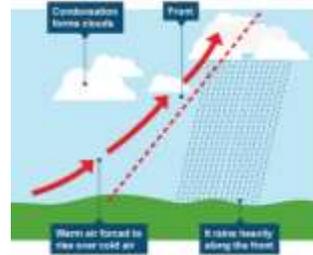
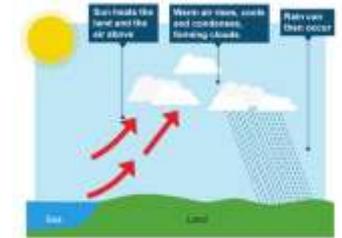
Weather symbols

Weather forecasts use symbols to show what the weather is like in certain areas across the country.



Types of rain

Convictional 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 continues, clouds will form & rain will fall.



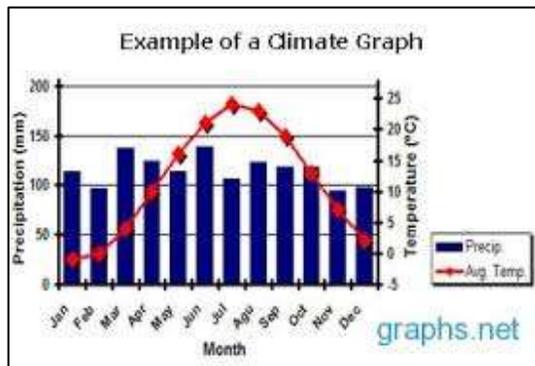
Frontal rain - When a cold polar air mass meets a warm tropical air mass they do not mix - they form fronts. The colder air mass is heavier than the warmer air mass, therefore the lighter, warmer air rises over the top of the heavier, colder air. As the warm air is forced to rise it cools. Also, the warm air is in contact with the cold air along the fronts, and this also cools. Condensation occurs and clouds form. Rain occurs along the front.



Relief rainfall - Prevailing winds bring warm, moist air to the western British Isles. Air is forced to rise over high areas. As air rises, it cools and condenses. Clouds form and it rains. Air descends on the other side of the mountains. This air is dry and a rain shadow is created this side of the mountains.

Climate graphs

Climate graphs show the average **temperature** and **precipitation** (rainfall) in a place/country over a year.



Temperature = line graph

Precipitation = bar graph

Global warming

Global warming – the gradual increase in the Earth's average temperature

Causes	Effects
<ul style="list-style-type: none"> • Transport – fossil fuel-based fuels e.g. cars, planes • Landfill – decomposing rubbish • Deforestation – reduces carbon absorbed by trees • Burning fossil fuels – for energy and in factories • Agriculture – cattle and use of nitrogen-based fertilisers 	<ul style="list-style-type: none"> • Melting glaciers & ice sheets • Sea level rise • Increased tropical storms, flooding & drought • Extinction of species • Climate refugees • Coral bleaching • Decrease in fresh water supplies • Desertification