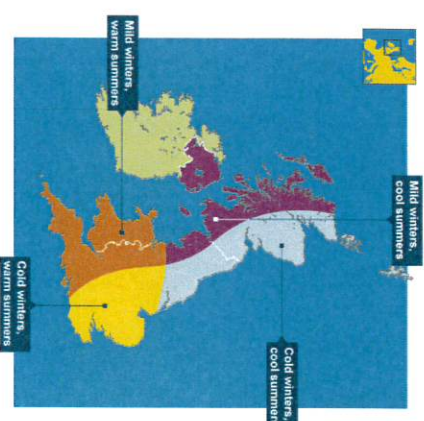


1. Meteorology	1. The study of the weather.
2. Precipitation	2. Water in any form falls to earth (rain, snow, sleet and hail).
3. Microclimate	3. The climate of a small area.
4. Convectonal Rainfall	4. Rain that is produced when air rises after being warmed by a ground.
5. Frontal rainfall	5. When warm air has to rise over cold air in a depression.
6. Anticyclone	6. A weather system with high pressure at its centre.
7. Depression	7. A weather system with low pressure at its centre.
8. Relief rainfall	8. Rain caused by air being forced to rise over hills and mountains.
9. Hurricane	9. A violent wind that has a circular movement, especially in the West Atlantic Ocean
10. Monsoons	10. A seasonal shift in the prevailing wind direction, that usually brings with it a different kind of weather.

1. What is Climate?
2. What is Weather?
3. What is the link between Weather and Climate?
4. Does Extreme Weather happen in the UK?
5. What are Weather Hazards?
6. How is Weather measured?
7. How did Hurricane Katrina cause so much damage?

Reasons for temperature differences across Britain.

- Wind direction** – This is where the air comes from; a North wind will be colder, a West wind will be wether.
- Ocean currents** - In winter a warm ocean current coming across the Atlantic from the Caribbean, called the North Atlantic Drift, warms west of the UK.
- Latitude** – The further north or south from the equator, the cooler the temperatures will be because of the decreased intensity of the sun's rays. Therefore the north of the UK is cooler than the south.
- Altitude** – The height above sea level will affect temperatures due to the lower air pressure and fewer air molecules. Temperatures decrease by about 1 °C for every 100m in height.



Measuring and Recording the Weather

Weather Type	Instrument used	Measured in...
1 Temperature	A thermometer	°C
2 Precipitation	A rain gauge	Mm or cm
3 Air Pressure	A barometer	mb
4 Wind Speed	An anemometer	Mph
5 Wind Direction	A wind vane	Compass directions
6 Cloud Cover	Eyes	Oktas (sixteenths)
7 Hurricane	A rain gauge A barometer An anemometer	Saffir-Simpson Scale

Websites

<https://www.metoffice.gov.uk/>

<http://www.bbc.co.uk/bitesize/ks3/geography>

Extended Learning Opportunity

Compare the UK with another country.

Think about why different Biomes occur and why they are where they are in the world.

Why is there a need to measure weather? Who does it help?

Weather is the state of the atmosphere around us. It can change from hour to hour. An example of the weather are rain in the morning and sunshine in the afternoon.

Climate is the average weather in a place, over a long period of time. Climate is a measure of the average rainfall and temperature. Examples would be a desert climate, a tropical climate and a temperate climate (such as the UK).

What is an ecosystem?

1. An **ecosystem** is a natural system made up of plants, animals and the environment.
 2. They contain Abiotic and Biotic components
 3. **Abiotic** – Non-Living e.g. climate, water temperature, soil and light
 4. **Biotic** – Living – plants, mammals, fish, fungi
- Ecosystems can be identified at different scales:
- A **local small-scale ecosystem** can be a pond, hedgerow or woodland.
 - A **global small-scale ecosystem** can be a tropical rainforest or deciduous woodland. These global ecosystems are called biomes.

Impacts of change on an ecosystem

1. **Natural changes**
 - Climate change, weather events e.g. drought,
 - Droughts can be devastating to ponds and lakes
 - They could dry up in places. Plants will dry out and die. Fish, starved of oxygen, might not survive.
2. **Human changes**
 - Agricultural fertiliser, draining of ponds, deforestation, water pollution
 - Avington Park – restoration, 2014 → desilting and redefining lake, creating new waterside habitats

The distribution of global ecosystems

Large-scale scale ecosystems are known as global ecosystems or biomes. Global ecosystems form broad belts across the world from west to east. This is because the climate and the characteristics of ecosystems are determined by global atmospheric circulation.

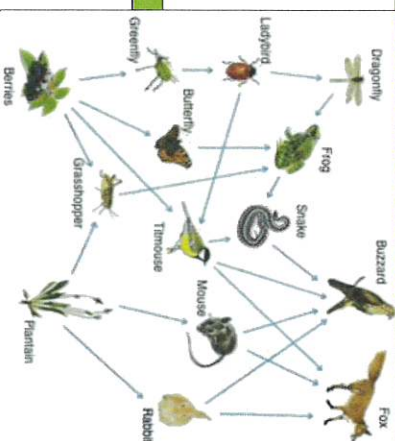
Variations in these east to west belts of vegetation are due to factors such as:

- Ocean currents, winds and the distribution of land and sea

Global ecosystems

1. **Tropical rainforest**- found near the Equator. The climate is hot and humid and many different species can be found here.
2. **Desert**-found near the Tropics of Cancer and Capricorn. Conditions here are very hot and dry. Plants and animals are specially adapted to survive in the harsh conditions.
3. **Polar**- Arctic and Antarctic, north and south pole, very low temperature and dry conditions. Temperature can fall below -50°C.
4. **Deciduous and coniferous forests**- roughly 50-60° north of the Equator. Deciduous trees shed their leaves in winter. Coniferous trees are cone-bearing evergreens. The UK's natural vegetation is deciduous forest.
5. **Temperate grassland**- found in Hungary, South Africa, Argentina and the USA. Consists of grass and trees that thrive in a temperate continental climate of moderate rainfall and mild conditions.
6. **Mediterranean**-roughly 40-45° north of the Equator. Hot, sunny and dry summers with mild winters. Other part of the world have similar climate, California (USA), South Africa and part of Australia
7. **Tropical grassland (savanna)**- between 15-30° north and south of the Equator, wet and dry seasons. Often with wild fires and and violent thunderstorms.
8. **Tundra**- found near the North and South poles. Very few plants and animals can survive here.

Example of a Food Web



A fresh water pond ecosystem



Global ecosystems-map

