

Weather vs Climate

Weather: The day-to-day conditions of the atmosphere (e.g. rain, sun, wind).

Climate: The average weather conditions over a long period (usually 30 years).

How Can Weather Affect Us?

- Influences our clothing, transport, farming, energy use, and health.
- Extreme weather (storms, floods, heatwaves) can cause damage and disruption.

Measuring the Weather

Thermometer: Measures temperature.

Barometer: Measures air pressure.

Anemometer: Measures wind speed.

Rain gauge: Measures rainfall.

Wind vane: Shows wind direction.

Sunshine recorder: Measures hours of sunshine.

Why Does It Rain?

Relief Rainfall: Moist air rises over hills/mountains and cools.

Frontal Rainfall: Warm and cold air masses meet, forcing warm air to rise.

Convictional Rainfall: Sun heats the ground, causing warm air to rise and cool.

Air Pressure and Air Masses

Air Pressure: Weight of the air pressing down on the earth's surface.

High Pressure (Anticyclone): Dry, settled weather.

Low Pressure (Depression): Wet, windy, and unsettled weather.

Air Masses: Large bodies of air with uniform temperature and moisture (e.g. Polar, Tropical).

Anticyclones

- Bring clear skies, light winds, and little rainfall.

Summer: hot and dry

Winter: cold and frosty

Depressions

- Areas of low pressure that bring cloudy skies, rain, and strong winds.
- Common in the UK, especially in winter.

Microclimates

- Small areas with different climate conditions from the surrounding region.
- Influenced by buildings, trees, water, and shade (e.g. school playground, city park).

Why Is It Warmer at the Equator?

- The sun's energy is more concentrated near the Equator.
- The Earth is curved, so higher latitudes receive sunlight at an angle.

World Climate Zones

Tropical: Hot and wet (e.g. rainforest).

Desert: Hot and dry (e.g. Sahara).

Temperate: Mild with seasons (e.g. UK).

Polar: Very cold all year (e.g. Antarctica).

Mediterranean: Warm, dry summers and mild, wet winters.

Mountain/Highland: Cooler temperatures at altitude.

Climate and Landscape

Deserts: Dry, sparse vegetation, sand dunes.

Rainforests: Dense vegetation, thick canopy.

Tundra: Frozen ground, limited plant life.

- Climate affects soil type, erosion, vegetation, and landforms.

Life on the Tropic of Capricorn

Countries: Australia, Brazil, South Africa.

Climate: Often hot and dry – can lead to drought.

Adaptations: Water storage, farming techniques, housing styles.

Life in the Arctic Circle

Countries: Norway, Canada, Russia.

Climate: Very cold, long winters, short summers.

Adaptations: Insulated housing, specialist clothing, seasonal activities.

Key Terms

Weather: Daily atmospheric conditions.

Climate: Long-term weather patterns.

Precipitation: Any form of water falling from the sky.

Air Pressure: Force of air on the Earth's surface.

Microclimate: A small area with a distinct climate.

Revision Questions

- 1) What is the difference between weather and climate?
- 2) Name three instruments used to measure the weather.
- 3) What causes relief rainfall?
- 4) What weather does a depression bring?
- 5) Give an example of a microclimate.
- 6) Why is the Equator warmer than the UK?
- 7) Name two climate zones.
- 8) How does climate affect the landscape in deserts?
- 9) What is life like along the Tropic of Capricorn?
- 10) How do people adapt to living in the Arctic Circle?

