

# AQA Geography A-level

## Glacial Systems and Landscapes

### Glossary of Definitions



**Ablation** - The loss of mass from the glacier, e.g. meltwater, avalanches, sublimation, evaporation.

**Abrasion** - Small rocks within the base of the glacier rub against the bedrock.

**Accumulation** - The addition of mass to the glacier, usually as snow.

**Active Layer** - The top layer of soil above permafrost, which thaws annually in summer.

**Alpine Regions** - Areas of low temperature in high altitude, mountainous regions.

**Arêtes** - A ridge formed between two corries.

**Basal Ice Melting** - The weight of a temperate glacier causes meltwater, which will then erode the bedrock through fluvial erosion.

**Basal Sliding** - Glaciers sliding over bedrock, due to meltwater between the two surfaces.

**Blockfields** - Rock-strewn landscape caused by extensive frost action.

**Cold-Based Glacier** - (Also called Polar Glaciers) The glacier's temperature remains below zero degrees, so the base of the glacier remains frozen and moves very little.

**Compressional Flow** - Ice builds up and thickens due to friction as a glacier travels upwards along a shallow gradient.

**Corries** - A round hollow in the side of a hill, widened from an initial smaller hollow by a glacier within the hollow.

**Crushing** - The weight of the glacier causes fracturing in the bedrock.

**Drumlins** - When a glacier hits an obstacle that cannot be eroded, deposition from underneath the glacier builds up behind the obstacle.

**Environmental Fragility** - An environment is vulnerable or at risk, with low resilience or ability to adapt to changes.

**Erratics** - Boulders transported and deposited by a glacier. The type of rock that forms the erratic will usually differ from the rock types in the surrounding landscape.

**Esker** - A long, winding ridge of glacial deposition.

**Extensional Flow** - Ice thins out, creating crevasses, due to an increase in the glacier's velocity down a shallow gradient.

**Fluvial Erosion** - Water within the glacier erodes the base of the glacier over time through: hydraulic action, attrition, corrosion.



**Frost Heave** - The freezing and expansion of water beneath the ground, resulting in floor uplift.

**Glacial Budget** - The difference between accumulation and ablation for a glacier.

**Glacial Period** - A period of time of colder average global temperatures causing the growth of ice cover, glacial advances and sea levels to fall.

**Glacial Trough** - A U-shaped valley formed from a v-shaped river valley that becomes filled and eroded over time by a glacier.

**Hanging Valleys** - A valley with a wall at one end, due to the glacier that filled the valley previously being low energy.

**Holocene Epoch** - Our current glacial period of limited ice cover, lasting over 10,000 years.

**Ice Wedge** - Water infiltrates small cracks in the permafrost and expands on freezing repeatedly.

**Interglacial Period** - A period of time of warmer average global temperatures, resulting in reduced ice cover, glacial retreat and sea levels to rise.

**Internal Deformation** - Glacial movement caused by the weight of the glacier above deforming the ice.

**Kames** - Piles of material, sorted due to the differing weight of sediment, left on the valley floor after a glacier melts.

**Milankovitch Cycles** - Changes to the tilt and shape of the orbit will affect the average temperature of the Earth.

**Meltwater Channels** - Streams of meltwater (melted glacier) formed by higher temperatures.

**Moraines** - Deposits of eroded material that has been transported by a glacier. Moraines may be lateral, medial, ground, recessional or terminal.

**Nivation** - Erosional processes involving snow and ice.

**Orbital Eccentricity** - How far a planet's orbit is from being a perfect circle.

**Outwash Plain** - Material is washed out and deposited due to large volumes of meltwater as a glacier recedes.

**Patterned Ground** - Patterned ground is formed through the frost heave of stones in and underneath the active layer.

**Periglacial** - Landscapes found at the edge of glacier, polar and alpine regions. Permafrost occurs, with low precipitation and only highly adapted plant species survive.



**Permafrost** - Permanently frozen soils throughout the year.

**Pingos** - A mound produced as ground is forced upwards through frost heave.

**Plucking** - Rocks on the bedrock are frozen within the glacier. As the glacier moves, the rocks are pulled from the bedrock and moved.

**Polar Regions** - Areas of maximum ice sheets and limited vegetation, located at high latitudes on Earth.

**Roches Moutonnées** - Rock shaped by a glacier flowing over it and eroding it.

**Solifluction** - The movement of waterlogged soil, trapped between the active layer and permafrost.

**Solifluction Lobes** - As the active layer thaws, soil falls down the hillside in tongue-shaped lobes.

**Terracettes** - Ridges running parallel across a hillside, believed to be created by vegetation trapping sediment falling loose down the hillside, created through frost heave.

**Thermokarst** - Marshy, boggy wetlands caused when permafrost melts.

**Till Plains** - An ice sheet detaches from the main glacier and melts, releasing all loose till and sediment across the bedrock.

**Warm-Based Glacier** - (Also called Temperate Glaciers) Faster travelling glaciers due to basal meltwater trapped underneath the glacier, acting as lubrication to allow the glacier to move.

