KS3 Geography
Knowledge Organiser

Year 8– Changing Landscapes

How has Ice Carved Planet Earth?

Lesson 1 – What is a Glacier?

1. Glaciers are made of fallen snow that has formed over many years into thick and large ice masses. Glaciers move across the landscape like slow rivers. Due to their size and weight they erode the landscape as they move.

2. Glaciers are typical found at high latitudes (polar regions) but they are found on all continents at altitude. At different points in time when the Earth was colder more of the surface was covered in ice.

3. An active Glacial environment is one where glaciers still exist and are continually eroding, transport and depositing material.

4. A relict (or relic) glacial landscape was created by a Glacier but is no longer cold enough for them. For example Snowdonia in North Wales.

Lesson 2 – How does Glaciation occur?

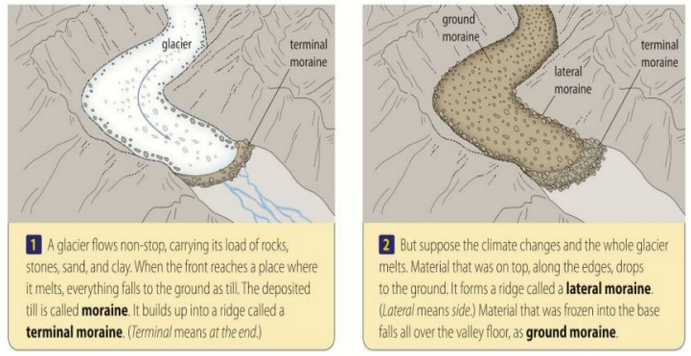
1. Earth's temperature has fluctuated through time never remaining constant. Periods when average global temperatures have increased are called interglacials and when colder are refered to as glacials.

2. During glacials more of the Earth's surface was covered by ice (larger glacial extent)and sea levels dropped.

3. Changes in the shape of the Earth's orbit of the sun (Milankovitch Cycles) affect the amount of solar energy (heat) we receive. These changes are a potential explanation for the presence and absence of the Ice Ages shown on the diagram above.

Moraines

As you go down a mountain, it gets warmer. So as a glacier flows down a mountain, it reaches a point where it will melt. But it may melt even at the top of the mountain if the climate warms up!

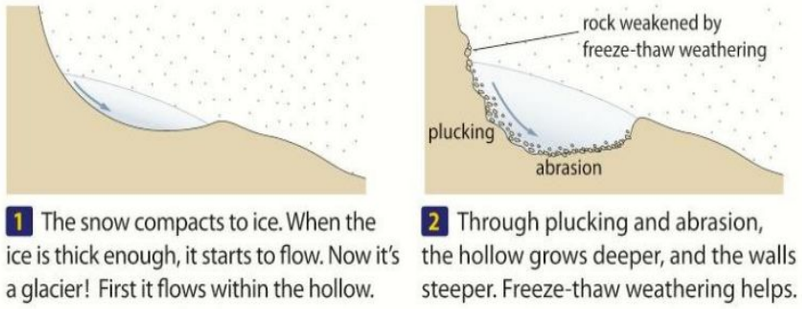


1 A glacier flows non-stop, carrying its load of rocks, stones, sand, and clay. When the front reaches a place where it melts, everything falls to the ground as till. The deposited till is called **moraine**. It builds up into a ridge called a **terminal moraine**. (*Terminal* means *at the end.*)

2 But suppose the climate changes and the whole glacier melts. Material that was on top, along the edges, drops to the ground. It forms a ridge called a **lateral moraine**. (*Lateral* means *side.*) Material that was frozen into the base falls all over the valley floor, as **ground moraine**.

What is a corrie and how do they form?

A corrie begins as a sheltered hollow, where snow builds up year after year.



1 The snow compacts to ice. When the ice is thick enough, it starts to flow. Now it's a glacier! First it flows within the hollow.

2 Through plucking and abrasion, the hollow grows deeper, and the walls steeper. Freeze-thaw weathering helps.

3 Eventually the glacier is big enough to flow over the edge of the corrie. It's off on its journey down the mountain.

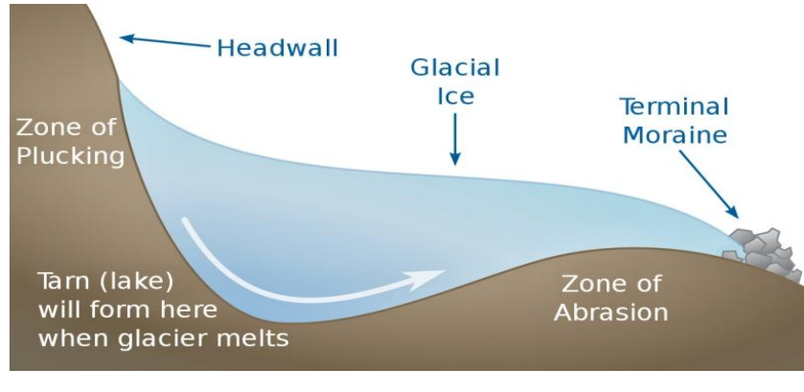
4 Later, when the glacier melts, the corrie is revealed. It may have a lake in it. These corrie lakes are often called **tarns**.

Lesson 4 – How do people benefit from glacial landscapes?

1. Lochness is located in the Great Glen, a valley formed by the Great Glen Fault. Its U-shaped landscape was formed by erosion from huge glacier in the last ice age.

2. Avon Gorge, a dramatic limestone gorge near Bristol, was primarily formed during the last ice age. Initially, the River Avon flowed south-west, but an ice sheet blocked its path, causing a lake to form upstream. When the lake overflowed, it carved a new channel through the Carboniferous Limestone ridge, creating the deep gorge we see today.

3. Relic glacial landscapes are used for tourism, drinking water and hydro-electric power

Lesson 3 – How do Active Glaciers change the Landscape?

1. Snow collects in a hollow and the heat and pressure from the weight above it melts the ice and the bottom of the hole causing it to be lubricated and slip (rotational slip).