

## Key Terms:

**Ice Age** - A time period when ice advances from the north and south poles towards the equator.



**Ice Sheet** - A large, expansive body of ice, 1-2 miles thick which covers a land surface, covering continental areas.

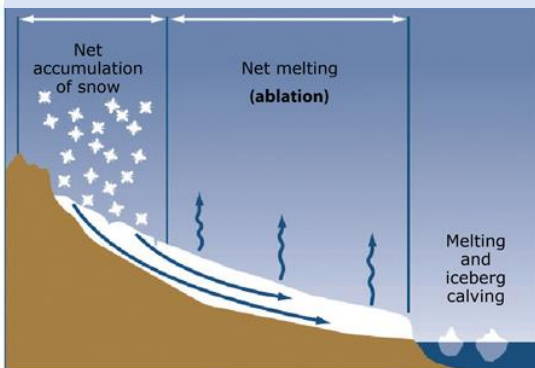


**Glacier** - A frozen land-based river like feature, flowing from the upland areas down towards the low-lying coastal areas.

**Accumulation** - the build up of snow in layers which is compressed into ice.

**Ablation** - the melting or breaking up of the ice.

## Mass Balance



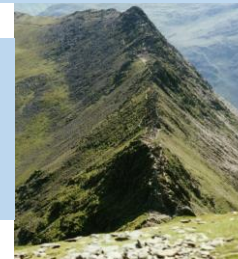
Mass balance is the difference between accumulation and ablation. If there is more accumulation than ablation the glacier advances. If there is more ablation than accumulation the glacier retreats.

## Glacial Landforms



A **corrie** is an armchair-shaped hollow found on the side of a mountain. This is where a glacier forms. Plucking and abrasion deepen the corrie into a deep hollow with a higher rock lip at the front. When the glacier melts this lip traps the water and creates a lake called a **tarn**.

An **arête** is a knife-edge ridge. It is formed when two neighbouring corries run back to back. A **pyramidal peak** is formed where three or more corries and arêtes meet.



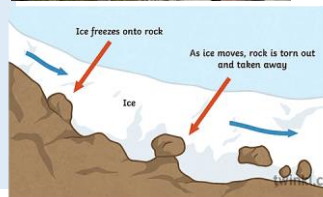
**Moraines** are accumulations of dirt and rocks that have fallen onto the glacier surface or have been pushed along by the glacier as it moves.

## Glacial Erosion

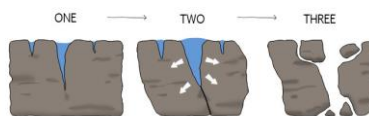
**Abrasion** - When the ice wears away the bedrock using the rock and pebbles being carried in the base of the glacier.



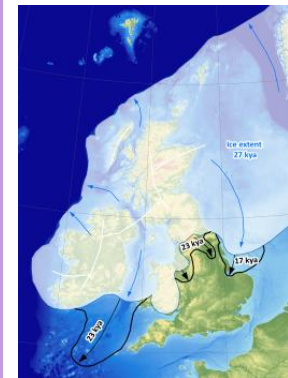
**Plucking** - When the base of glaciers freezes onto bedrock and pulls up large pieces of bedrock as it flows over the land surface.



**Freeze-thaw weathering** - The action of water flowing into cracks, freezing as ice and widening the cracks so much that rock breaks apart.



10,000 years ago the UK was covered in Ice. This means a lot of our landscape has been shaped by glaciers. We can see corries, arêtes, tarns and moraines in the UK today despite there not being any glaciers now.



## How is Climate change effecting glaciers around the world?



Global warming is resulting in glaciers melting all over the world. This is resulting in water shortages for those people who rely on melt water and is creating sea level rise.

## Benefits of glaciated areas



**Tourist Attractions** - People visit these places to enjoy the beautiful landscape created by glaciation. This environment is popular with tourists because it provides opportunities for walking, cycling, sailing and kayaking.

**Agriculture** - Fertile soils of lowland areas provide good opportunities for arable and livestock farming. This also creates jobs and provides a boost for the economy. When glaciers melt in summer their meltwater flows into rivers and onto floodplains.



**Hydro-electric Power** - energy that uses the power of water to generate electricity. Glacial areas are perfect because

- Steep sided mountains
- Reliable meltwater in the spring and summer.

## Drawbacks of living in glaciated areas

**Flooding** - When glaciers melt rapidly or a glacial lake floods it releases a huge volume of water. This can flood the valley below destroying homes, business and killing people.



**Avalanches** are masses of ice moving or falling downhill. They can destroy habitats, homes and kill people.

## Lake District Case Study



**15 million tourists visit the lake district every year.** People visit to walk, climb, swim and cycle in the glaciated landscape. This brings in money to the local economy however it results in congestion, littering and footpath erosion.

## Tasks...

1. What was the extent of the ice in the UK during the last Ice Age?
2. Describe and explain the formation of a glacier.
3. What is mass balance?
4. How does a glacier erode the landscape?
5. Explain the formation of a corrie, arête and pyramidal peak.
6. Why is the soil fertile in glacial environments?
7. Explain how climate change is affecting glaciers and ice sheets around the world.
8. Why is it important as a geographer to understand glaciation?

Do your research..... Choose a named glacier and research what is happening to it, how it is changing and the impacts this is having on the surrounding area and people

## Prepare for your extended write

Question: 'Evaluate the benefits and drawbacks of living in a glacial environment.

1. BUG the question by boxing the command word and underlining the content you need to write about.
2. List the key vocabulary you will use.
3. Create a plan of what you would write in each paragraph.
4. Practice writing your answer from memory.

## Homework Activity...

Write a newspaper article discussing the evidence of glaciers in the Lake District. Use google maps to help find more evidence.