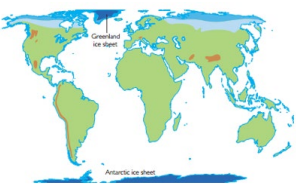
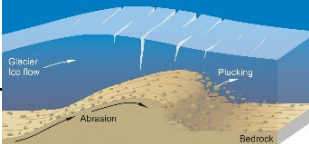
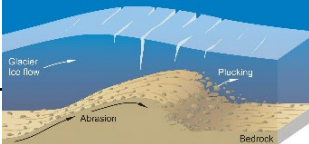



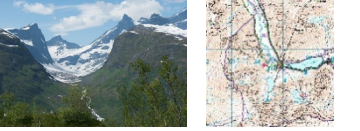
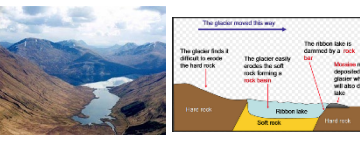


Cold environments are the coldest environments on Earth.	
Characteristics of a cold environment	<ul style="list-style-type: none"> Typically they have temperatures below freezing The ground can be covered in ice or frozen Some plants, however these are not in abundance
Where are cold environments found?	<p>Polar and tundra environments are found at the top and bottom on the world. These are where earth's largest glaciers are found and are known as 'ice sheets' or 'continental ice sheets'.</p>  <p>Earth's other glaciers are much smaller and found high up in the mountains, where it is also very cold. These are called 'alpine glaciers.'</p>
A glacier is....	<p><i>A glacier is a large mass of ice that flows across the land.</i></p> <p>Glaciers are made up of layers of snowfall over hundreds of years. Whilst glaciers are usually found in the coldest places across the world, we actually find glaciers on every continent.</p>

Physical Processes	
Plucking (erosion)	<p>When large parts of bedrock become frozen to the base of the glacier and as the glacier moves, the bedrock moves with it.</p> 
Abrasion (erosion)	<p>When large parts of bedrock attached to the glacier rub against the bedrock wearing it away. This causes striations (scratches) on the rock</p> 
Freeze-Thaw Weathering	<p>When water freezes, expands and thaws, causing them to break.</p> 
Transportation	When that glacier carries away the material it has eroded.
Deposition	When material the glacier has been carrying is 'dropped off'
Glacial Till	As the ice melts, the 'load' or material it is carrying, falls to the ground. This is made up of rocks, stone, sand and clay.
Meltwater	The water from the melting ice feeds into a river or a lake. This is called meltwater.

<i>A glacial landform is a recognisable feature on the land that is created by the action of glaciers.</i>			
Landforms of Erosion			
Feature	Images and OS Maps	Description	Formation
Corrie		<ul style="list-style-type: none"> It has three steep sides and a flat open front. 	Snow gathers in a hollow on the side of a mountain. The snow accumulates and builds up. As it does, the weight of the glacier increases and it starts to move down slope. This leads to ice gouging and deepening of the hollow creating a corrie. This can eventually fill with water (called a tarn), snow or ice.
Arête & Pyramidal Peak		<ul style="list-style-type: none"> An arête is knife like edge that is found near a corrie. A pyramidal peak is a pointed peak. 	An arête is formed when two corries form back-to-back. The backwalls erode of a create a very narrow knife-like ridge between them. This ridge is called an arête. A pyramidal peak is formed when three corries form back-to-back. The pyramidal peak is the steep pointed peak at the top. Arêtes Run up to the peak.
U-Shaped Valley		<ul style="list-style-type: none"> It has a U-shape, steep sides and a flat bottom 	Glaciers starts to move down a river valley which is a V-shaped valley. As the glacier moves down stream the valley sides and bottom are eroded due to plucking and abrasion. This creates the steep sides and flat floor that characterise a U-shaped valley. It is given this name as it looks like the letter U. It can also be called a glacial trough.
Ribbon Lake		<ul style="list-style-type: none"> A long narrow deep lake 	A ribbon lake is a long narrow lake found at the bottom of a U-shaped valley. It is formed when a glacier moves over a band of soft and hard rock. The soft rock is eroded more easily by plucking and abrasion. As the glacier retreats a rock basin is left behind. This fills up with meltwater from the glacier and a lake is left behind.
Avalanches		<p>An avalanche is a sudden and fast flow of snow sliding down a mountain. As it gets nearer to the bottom of the mountain, it gains speed and power. This can cause damage to anything in its path. It could be up to 80 miles an hour in 5 seconds - faster than driving on a motorway. It is a major hazard to people living in, or visiting, these areas.</p> <p>2 types of avalanche – Powder: This is when a layer of snow with different properties slides over another layer of snow. Slab: This is when an entire snow cover, from the earth to the surface, slides over the ground.</p> <p>On the 25th April 2015 a 7.8 earthquake struck Nepal and the surrounding countries. The earthquake triggered a huge avalanche on Mount Everest.</p>	
Nenets		<p>The Nenets are indigenous people from Siberia (northern Russia). They live on the Yamal Peninsula. Reindeers are important to the Nenets because; Antlers sold to China for medicine, meat sold to make money, meat and blood a source of food, skin used to make clothing and the chum,</p>	

Identifying Glacial Landscapes on an OS Map:

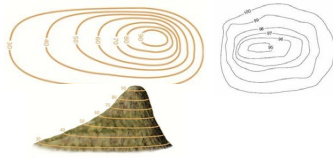
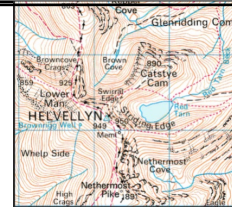
In every country, there are areas of flat land and mountains. The slope of the land is known as gradient. A steep gradient = steep slopes = mountains. There are three ways to show this on a map.

Contour Lines are lines on a map that join points of equal height. They are usually shown using fine brown lines on an OS map.

Contour lines give you an idea of the gradient and shape of the land.

- If contour lines are close together – this means the land is steep.
- If contour lines are far apart – this means there is a gentle slope

Most contour lines have their height written on them to tell you the height of the land along that specific contour line. These heights are given in meters. These numbers allow you to work out the direction of increasing or decreasing altitude.

THE LAKE DISTRICT:
 The Lake District is an example of a glaciated landscape in the UK. Around 20,000 years ago the Lake District was covered in ice. Today that landscape shows that history.
 the Lake district is located in the north of England, more specifically in the Northwest in the county of Cumbria.
 The Lake District is a National Park;
A National Park is:
 ✓ A protected area/location
 ✓ It has people and laws that make sure nature and wildlife are protected
 ✓ It is protected so people can continue to benefit from nature without destroying it.
 ✓ There are 15 national parks in the UK



An economic opportunity refers to opportunities to make money and create jobs in an area/place.
 What are the economic opportunities in the Lake District?

Challenge:	Sustainable Solution:
Traffic Congestion: ➤ Many tourists travel by car to the Lake District = Can cause traffic congestion which is when traffic moves at slow speeds resulting in long queues or standstill traffic. ➤ Worse in the summer months when tourism is at it height ➤ Local people may struggle to go about their daily business	1. introduced the 'Go Lake Travel Programme'. This included; <i>50 miles of cycle lanes, 5 new bus services (20,000 passengers), 9 locations for electrical vehicle hire</i> 2. This means that there are less cars on the road, reducing traffic congestion and a reduction in air pollution from greenhouse gases.
Second Homes/High Price Homes: ➤ A 'second home' or a 'holiday home' often bought by tourists. These homes not used fully throughout the year ➤ 20% of properties in the national park are second homes ➤ Difficult to maintain local services; <i>schools, shops and public transport.</i> ➤ House prices increase = harder for locals to buy homes	1. Local councils have build more social housing so that the homes are ore affordable 2. Planning permission for new houses are only granted to local people, or people who live there all year round = more homes available for local people, and house prices may also decrease.
Footpath Erosion: ➤ Paths are eroded, people start to walk on and trample the land beside the path. Footpath erosion occurs on heavily used paths at popular sites = loss of vegetation, grass, soil ➤ Eroded paths are unsightly and lead to habitat loss, water pollution and damage to the archaeological and natural history of the area.	1. 'Fix the Fells' = organisation that aims to fix the paths. 2. 'Stone pitching'. Stones are dug into the centre of the path so people can walk on them. They create a 'staircase' across the landscape. 3. Use Sheep fleeces that are folded and rolled to create a 'floating path' then layered with stones. The fleece protects the peat and soil but allows water to drain

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Opportunity	How does it creates opportunities
Tourism: ✓ In 2018, 19.38 million tourists visited the Lake District ✓ Tourism is the main source of income in the Lake District ✓ Tourism has been a popular tourist destination since the 18 th century, in fact poets and writes such as Wordsworth and Beatrix Potter were inspired by the area	1. When tourists visit the Lake district, they often need somewhere to stay such as a hotel or a B&B. 2. People spend money in restaurants and leisure activities 3. This means that local people can earn money by working in these jobs, additionally making more money for the local area.
Quarrying: ✓ This is where rock is taken out of the ground to use for different purposes. In the Lake District, slate is the type of material that is quarried. ✓ Slate can be used for roofing and walkways. ✓ One slate mine in the lake district = Honister Slate Mine	1. The quarry provides jobs for the local people 2. In addition to this, the quarry can sell its goods to other people/companies 3. This means that local people can earn money by working in these jobs, additionally making more money for the local area.
Farming: ✓ Farming is a core part of the economy in the Lake District ✓ 2500 people are employed in farming in the LD and most of the farming in the area is sheep and beef production. ✓ The lower glacial landscape, where thicker soils are found are used for crop farming.	1. Farming provides jobs for the local people 2. In addition to this, farmers can sell their produce to different places and earn money. 3. This means that local people can pay taxes, which can go towards improving the local area, bringing more people to the area.

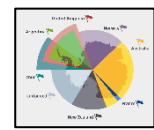
<i>Antarctica</i>	
Climate	Animals
<ul style="list-style-type: none"> Antarctica has a polar climate = average temperature range between -10 °C and -60 °C Antarctica experiences strong katabatic winds, as cold air flows down from inland areas towards the coast. The coastline of Antarctica is one of the windiest places in the world. 	<ul style="list-style-type: none"> Emperor penguin – largest of all penguins. Adapted By: having flippers to help them to swim and feathers to trap warm air close to their bodies. Weddell Seal – Adapted By: Smooth, streamlined shape to pass easily through the water. A substantial blubber layer lies under the skin acting as insulation, to swim in frigid Antarctic waters down to -2C.

Antarctica – A Cold Environment

- Antarctica is a continent (5th largest). It is surrounded by the Southern Ocean.
- The south pole 90°S is located in Antarctica and = southernmost point on the Earth.
- It is a cold desert = a desert as it is dry & lack of precipitation (little rain or snow).
- Antarctica only has two seasons due to the tilt of the Earth's axis in relation to the sun. During summer Antarctica is on the side of the Earth tilted towards the sun and is in constant sunlight. In winter Antarctica is on the side of the Earth tilted away from the sun causing the continent to be dark.

Antarctica Challenges

- Climate change** :increases in temperature = the melting of ice and loss of habitat for species like penguins. Sea levels rising damaging the ecosystems
- Antarctica has many resources:** No single country owns Antarctica = access to these resources (copper, gold, fossil fuels) could cause conflict.
- Tourism** - increasing numbers of tourists. If larger ships come, tourist numbers will increase = may unknowingly bring seeds and spores of plants from other areas and the threat of pollution, eg oil spills from the cruise ships.



Antarctic Treaty
 Antarctica is not owned by a single nation. Many different sovereign states have made territorial claims. **A treaty is an agreement under international law between different countries or organisations.**

Some of the agreements are:

1. natural reserve that is devoted to peace and science
2. To allow scientists freedom to work and share scientific knowledge
4. To set aside any territorial claims and ban nuclear explosions and the disposal of radioactive waste
6. To make sure all visits to Antarctica comply with the treaty