

CLIL LESSON PLAN

Procedure

Teacher's name	Emilio J. Capellano	
Date	21/11/2015	
Subject	Science	
Learning Outcomes	Content	<ul style="list-style-type: none"> Learners can describe main glacial landforms and find them on a map.
	Language	<ul style="list-style-type: none"> Learners can use geological terms correctly during a glogster presentation of their work
	Learning skill	<ul style="list-style-type: none"> Transforming information Cooperating with others
Personal aim	Improve learners speaking ability; find out differences between glacial landforms created by erosion and deposition.	
Group profile	There are 16 learners in this class, 7 boys and 9 girls. Age 18.	
Time	1 hour	
Assumptions	Most students are B1 level. Learners use tablets instead of books	
Anticipated problems and solutions	Student's vocabulary on specific topic may be poor: scaffoldings will be kept at the beginning of the lesson.	
Materials	http://www.bbc.co.uk/education/guides/zftyxcdm/revision/1 Glogster app ITC	

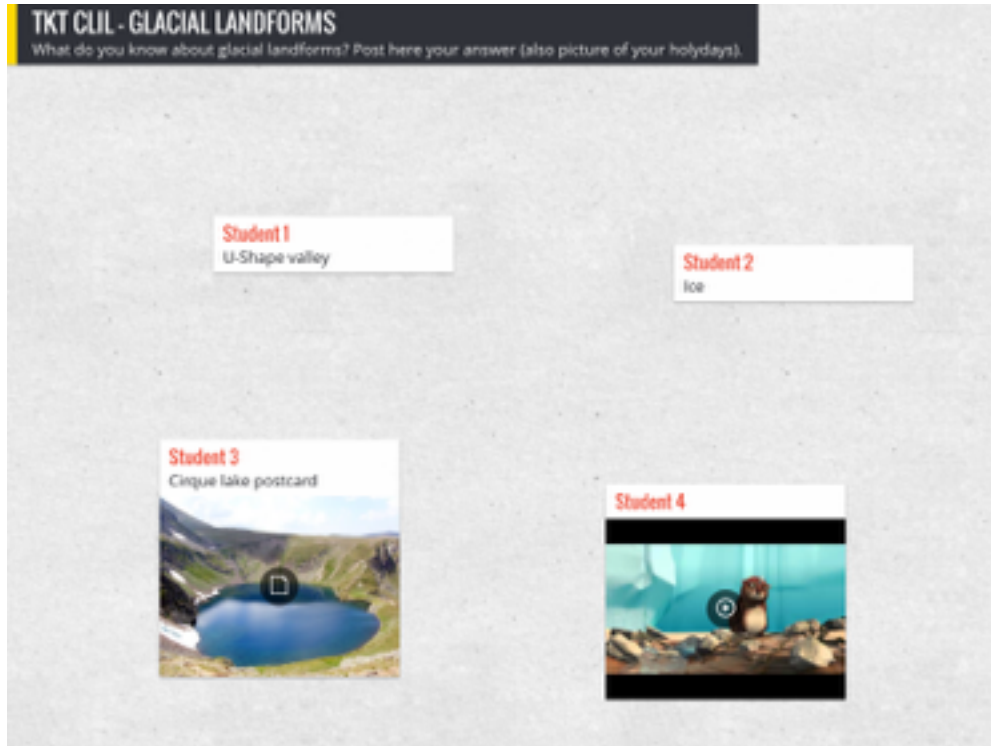
Stage	Aim	Procedure	Materials	Interaction	Time
1) warmer	activate prior knowledge	brainstorming about the word "glacial landform"	blackboard or Padlet web app	students-students-teacher	5 min
2) before reading	prepare for reading text (vocab.input)	loop game; Class is divided in 4 groups.	Domino cards	Student-student	5 min
3) while reading	Discovering new sources (different from textbooks)	Class is divided in 4 groups. T gives the same adapted material (from BBC website) to each group	ITC	Teacher-students	15 min
4) After reading	Transforming information	Ls have to create a web poster.	Glogster app	Student-student	15 min

5) Presentat ion	Improve speaking ability	Ls of each group have to present their glogster	ITC	Student-platea	20 min
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STUDENTS' WORKSHEET

Stage 1: example of brainstorming using padlet

padlet.com/emjc/TKTCLILhomework



Stage 2: Loop game

Play the loop game in groups of 4. Then check your answers.

Interglacial	A bowl-shaped hollow area formed by glaciation. Cirques sometimes have lakes in them and they are also known as cwms (in Wales) or corries (in Scotland).
cirque	When water in rocks freezes and expands, breaking the rock apart.
freeze-thaw weathering	Cold spells marked by extensive glaciation.
glacial period	A deep U-shaped valley formed by a glacier.
glacial trough	A slowly-moving ice mass, formed over a long period from compacted snow
glacier	The material (till) deposited at the bottom of a glacier.
Ground moraine	A large area of land covered in ice.
ice caps	A large, permanent area of ice which could expand in most directions.
ice sheet	The warmer times between ice ages.

Stage 3: Adapted material

Ice covers about 10% of the Earth's surface. This ice is in the form of **glaciers**, **ice caps** and **ice sheets**. Most ice is found in Antarctica.

About 20,000 years ago, ice covered much of the continent of Europe, including most of the United Kingdom. Ice joined the UK to the rest of Northern Europe and it has covered different areas in the past due to **glacial periods** and **interglacials**. Ice spreads out during glacial periods and gets smaller during warm interglacials. Glaciers also grow and shrink with seasonal changes in temperature. Glaciers flow very slowly under the force of gravity. Ice sheets completely cover the landscape including mountains and valleys. Today, ice is found in highland areas such as the Alps, and in the far north and south, eg the Arctic and Antarctic.

Glaciers develop over many years in places where snow has fallen but not melted. Snow is compacted and turns to ice.

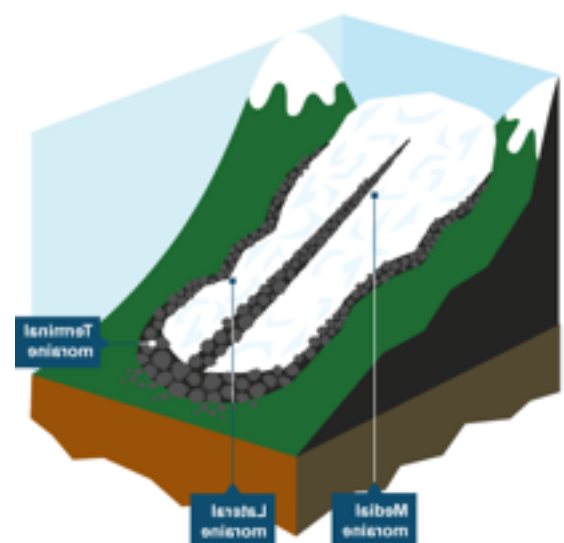
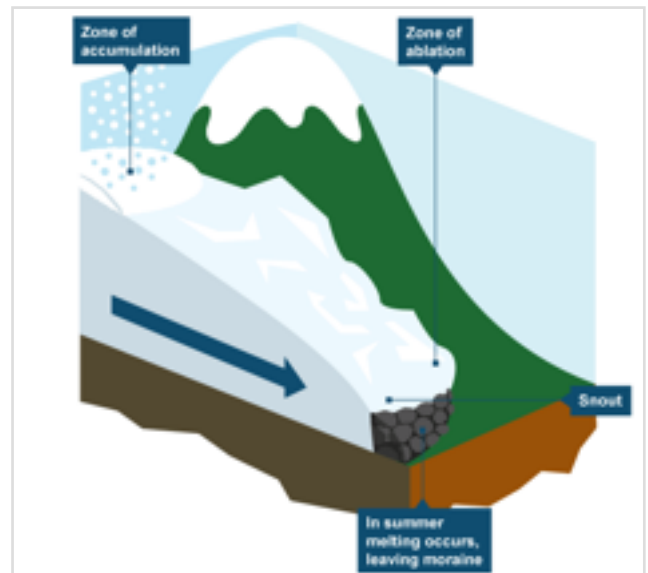
A glacier is a system. There is a zone of accumulation where snow is added. This is normally at the start of a glacier in a highland area. Near the end, or snout, of the glacier ice may melt. This is the zone of ablation and is more likely to occur in warm summer months.

A pyramidal peak is formed when three or more cirques are formed back to back. The Matterhorn in the Alps and Mount Everest in the Himalayas are famous pyramidal peaks.

As glaciers move downhill they change V-shaped valleys into **U-shaped valleys** or glacial troughs. The ice has great **erosive power** and removes any obstacles such as interlocking spurs. Whereas a river creates a V-shaped valley because it acts mainly on the base of the valley, glaciers fill the valley and create steep sides and wide bases.

Hanging valleys are created where smaller valleys meet the main glaciated valley. The glaciers in the smaller valleys are not so powerful, so they don't erode such deep valleys. This means the smaller valleys are left above the main valley. Waterfalls may be present where the hanging valley joins the main U-shaped valley. **Ribbon lakes** are formed in the base of the glacial troughs once the ice has melted. They may be created in an area of softer rock, or because of a smaller glacier joining the main glacier providing the glacier with extra erosional power.

When ice starts to melt or retreat it leaves behind the rocks and sediment it has been carrying. This is called **moraine**. There are different types of moraine, as shown in the map.





Glossary

interlocking spurs	Fingers of land that a river meanders around. When viewed from downstream, these fingers or spurs appear to be locked together.
Lateral moraine	Moraine found along the edge of the glacier.
Medial moraine	A landform resulting from glacial material (till) deposited between two glaciers.
moraine	The debris, rocks and materials that a glacier has picked up, transported and then deposited.
system	Refers to the inputs, stores, flows and outputs of water into a glacier.
Terminal moraine	Moraine (debris) left at the furthest point the glacier reached.
till	Sediment left behind by a glacier.
zone of ablation	The part of a glacier where melting occurs. This is usually lower down where the air is warmer.
zone of accumulation	The area where more ice forms than melts in a glacier.

Stage 4: Glogster creation

Example from glogster app on iPad.

Glacier Valleys

Erosion
Highland areas are usually created by erosion and not deposition
There are different rates of erosion between the main valley and the valley that enter along its sides

How does it form?
When heavy rainfalls water during the winter then melts during the summer while the water flows up the ice the mountains covered up it forms a big sheet

Where are they found?
In the mountains

Erosion
When a glacier melts, it leaves gaps in the ground of the size of the glacier and gaps of 1000 ft or more for the glacier size of gaps.
There are nothing gaps, erosion gaps, for a pair of lakes, not ice passing.

Cool Facts
Another name for glaciers are glacial trough
As the glaciers slide up, they pick up rocks and grind away at the valley floor and sides, pressing the "U" into a "V"
When the glacier melts, a U-shaped valley marks the spot where the snow and ice once flowed
When a glacial valley melts the water flows into another body of water than it is left as hanging valleys on the walls of the main glacial valleys

How do they change
Mudslides change landforms by moving them material and carving away the land beneath it
The movement of a mudslide reshapes the land by eroding the surface and carrying broken rock pieces and soil to another place