



Module F

Unit 1

Lesson 1

Exp 2

**Exploring agents
of Erosion and
Deposition**

Erosion and Deposition

- **Erosion is the process by which wind, water, ice, or gravity transports weathered materials from one location to another.**
- **Deposition occurs when the eroded materials are dropped, or laid down.**
- Erosion and deposition
 - DO NOT destroy matter..... they move and deposit matter in new places.

Agents of Erosion



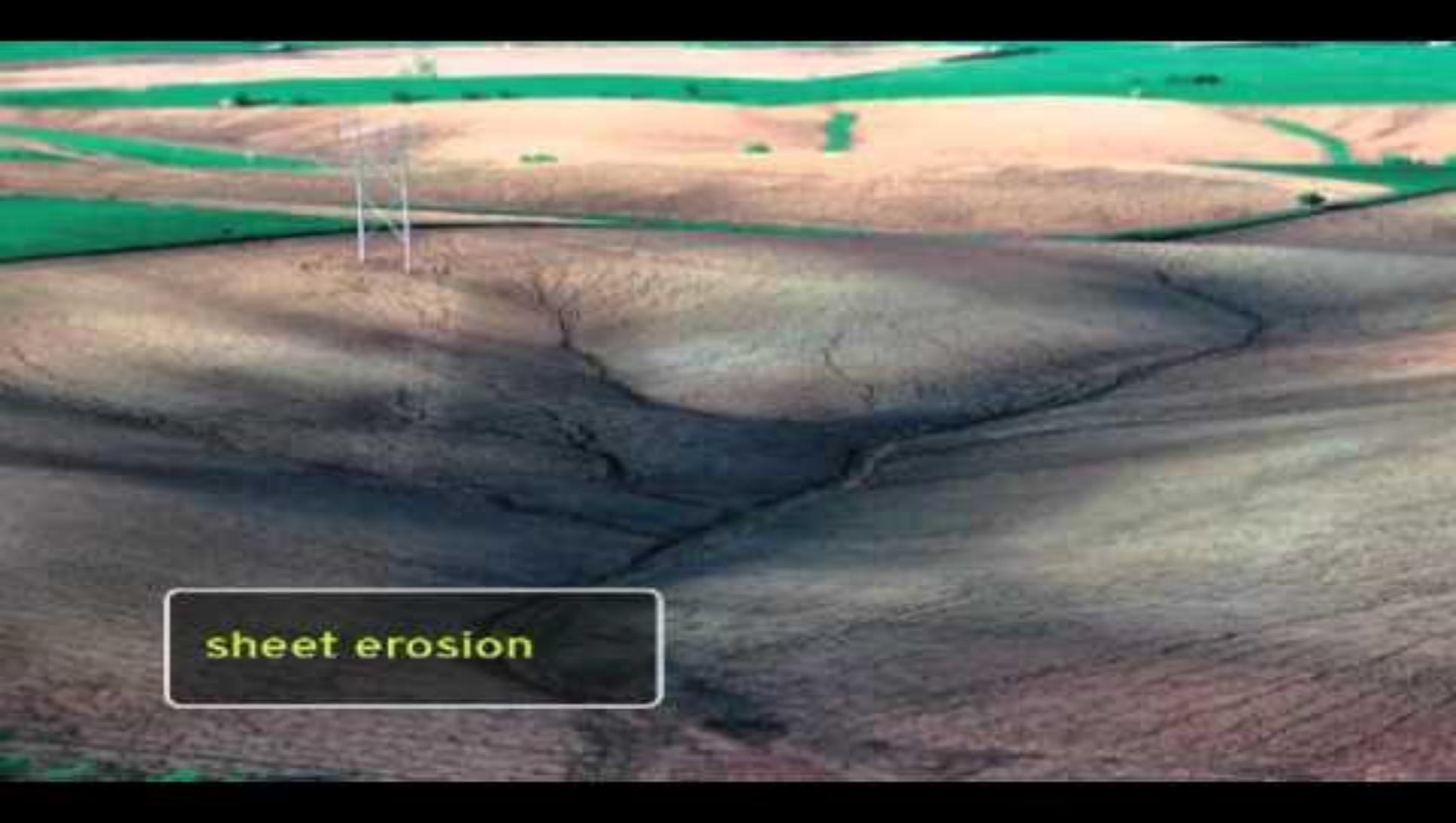
One common aspect... they all need ENERGY!!!



Wind and Water

- Agents of erosion and deposition.
- Wind and water can cause weathering through abrasion, scraping or wearing away.
- Water erodes as it flows above ground through streams, or underground through spaces in rock.
- Wind erodes as it blows over surfaces and lifts or pushes sediments.
- When wind and water lose energy and slow down, they drop their sediments and deposition occurs.

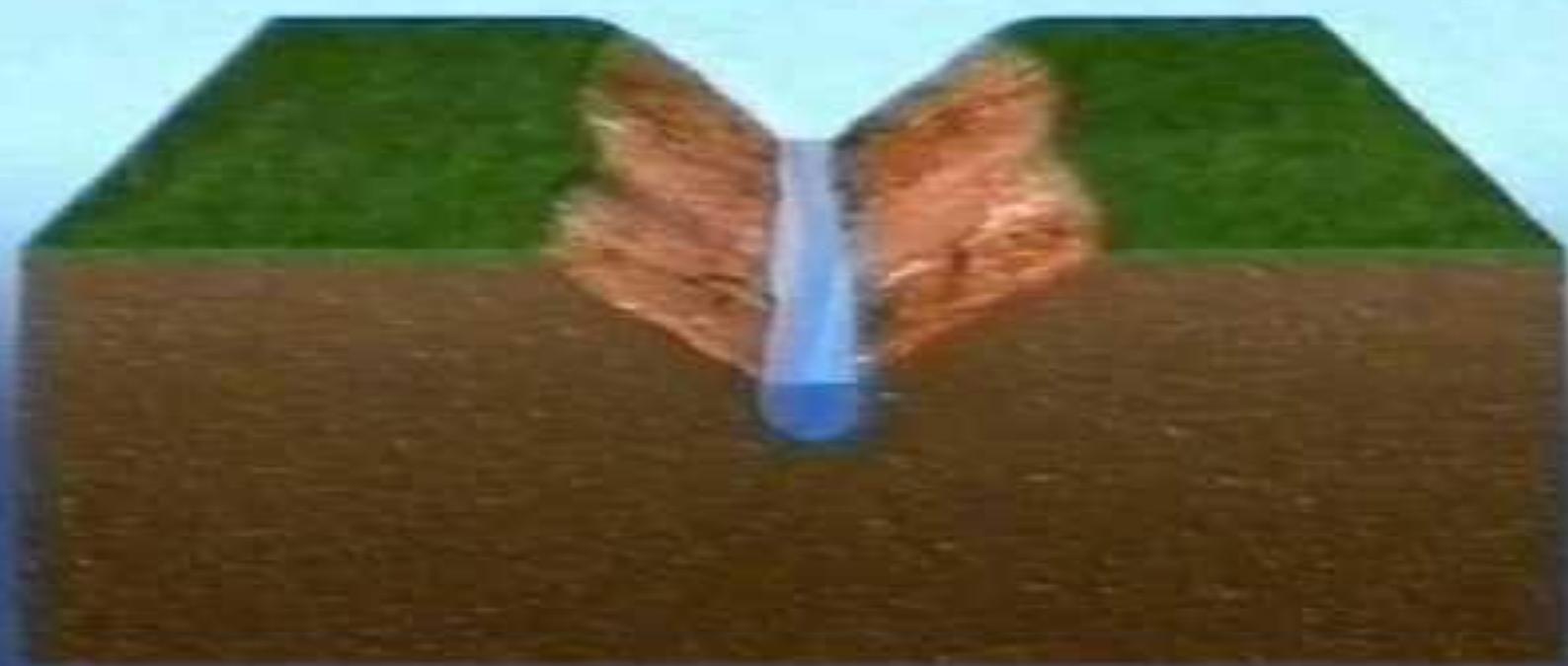


An aerial photograph showing a landscape with sheet erosion. The foreground and middle ground are dominated by brown, cracked soil, indicating severe drought. A network of small, interconnected rills and gullies has formed across the surface. In the background, there are patches of green and yellow fields, and a utility pole stands on the left side. The overall scene illustrates the process of sheet erosion where water runoff gradually wears away the soil surface.

sheet erosion

Valleys eroded by water are V-shaped because the bottom erodes faster than the sides when water moves quickly





Meanders

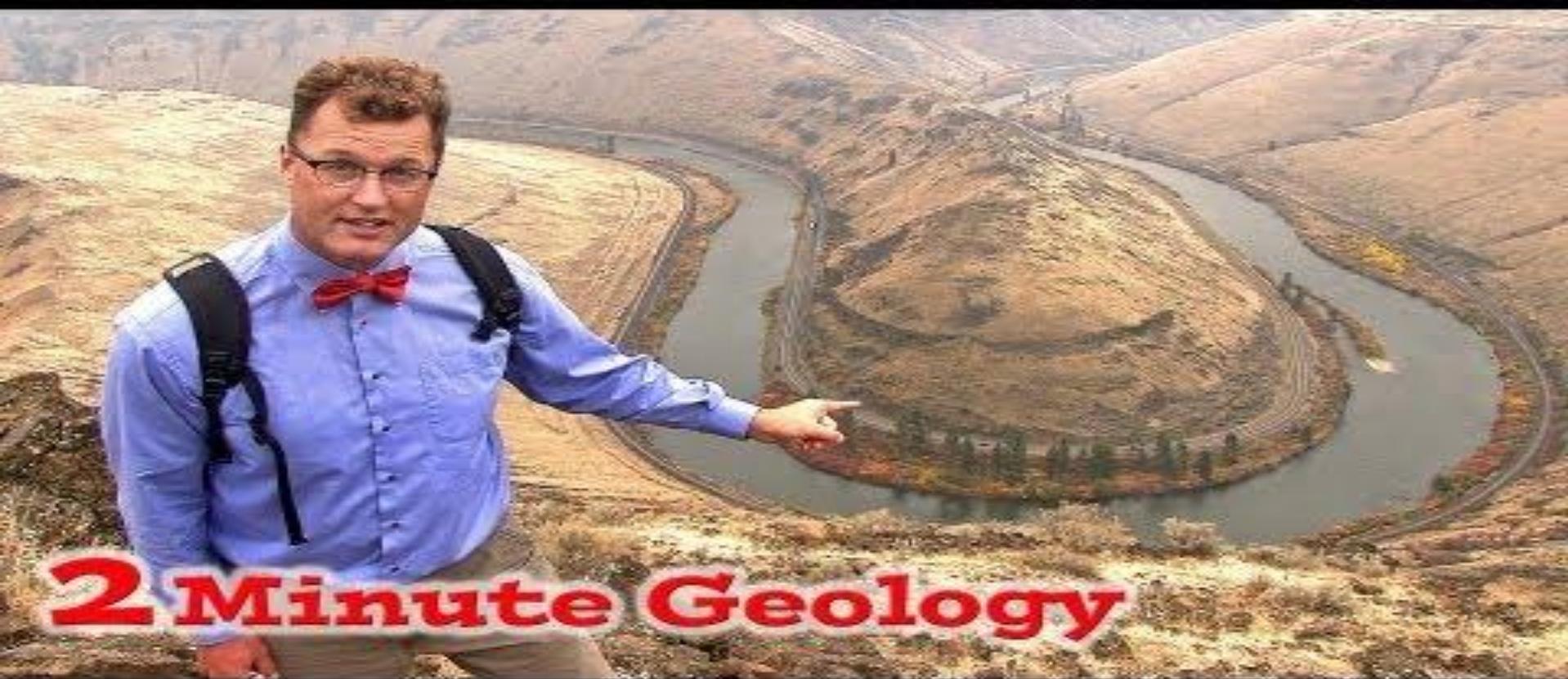
A curve in a stream caused by erosion.



Oxbow Lake

is a U shaped body of water that forms when a wide meander from the main stem of a river is cut off, creating a free-standing body of water





2 Minute Geology

Alluvial Fan

Is created when a river flows onto a level surface and slows down dropping sediments



An aerial photograph of a rugged mountain range. The terrain is characterized by deep, winding gullies and ridges, creating a complex, maze-like pattern. A single road is visible, snaking through the valleys between the ridges. The lighting is bright, casting long shadows that emphasize the three-dimensional structure of the landscape. The colors are primarily earthy tones of brown, tan, and grey.

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**Erosion and deposition
activity in Ebook.**

**Find it after the math
activity**

Two types of Erosion by ICE

Glacier

a large mass of ice that exists year-round and flows slowly over land



Ice Wedging

Occurs in temperate and cold climates where water enters cracks in rocks and freezes.



Ice Wedging



Under a Glacier

- **The next image was taken in Skaftafell, Iceland, deep underneath a glacier in an ice cave. As the glacier moves it collects dirt and grit but in places where it doesn't it allows light to travel through the turquoise ice, creating this surreal environment.**



Glaciers

- One of the most powerful agents of erosion and deposition is ice.
- The weight of the glacier, along with gravity, help it move over land.
- As glaciers move, they act like a conveyor belt, eroding soil, sediment, and rock—even large boulders—over great distances, and then depositing the materials elsewhere.
- Glaciers can form jagged peaks or flatten and scoop out large sections of land, creating valleys.
- Glacial deposits can create long winding ridges or rocky mounds of sediment.

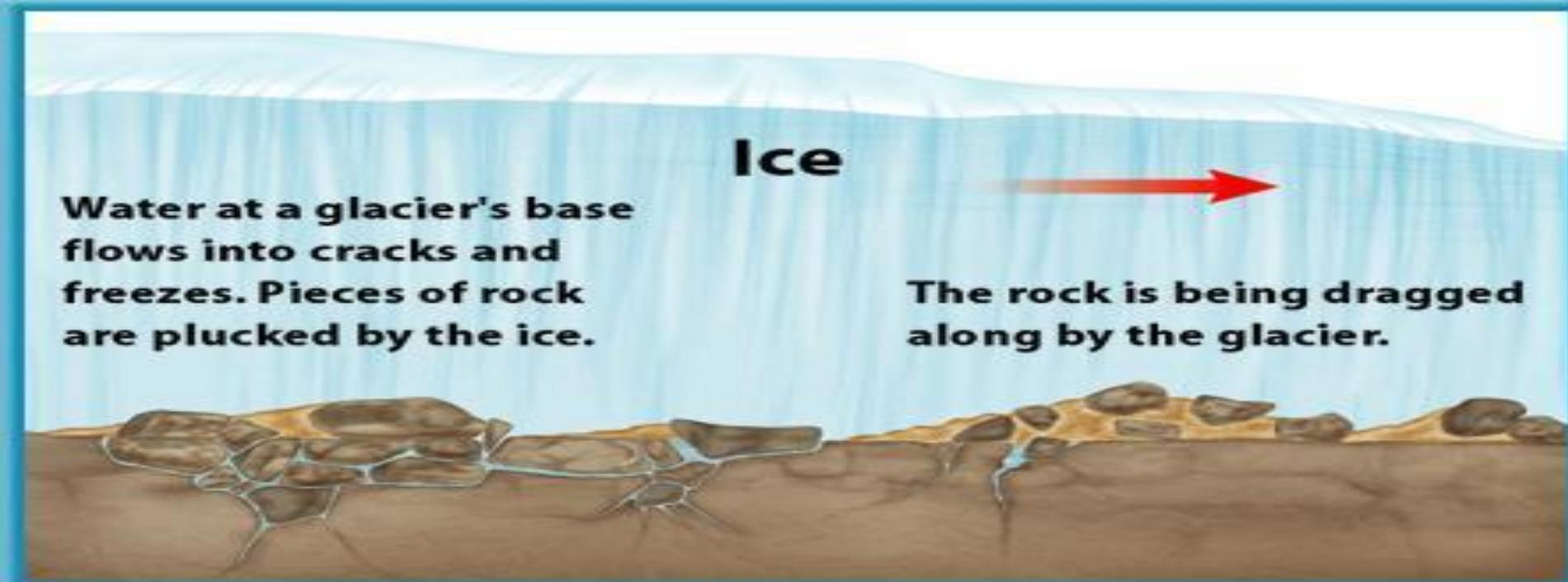


Glacially eroded valleys are U-shaped because a glacier plucks and scrapes soil and rock from the sides as well as from the bottom.



Pieces of rock then are lifted out by the ice.

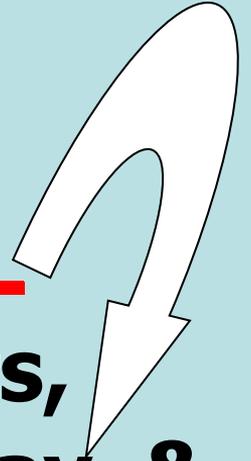
This process, called plucking results in boulders, gravel, and sand being added to the bottom and sides of a glacier.





Till

**Boulders,
sand, clay, &
silt dropped
from the base
of a glacier
when it slows
down.**



Moraine

**Rocks and
soil the
glacier
pushed
along; ridge
of materials.**



Outwash ↷

The material deposited by meltwater, or water from a melting glacier





Esker — a winding ridge of sand and gravel left behind after a glacier melts; ridges that form from meltwater

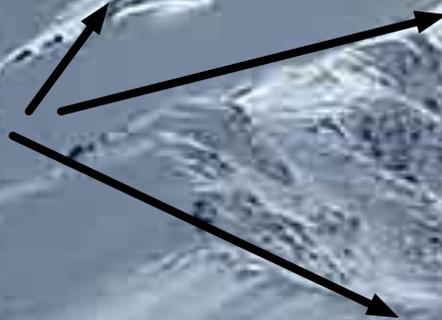


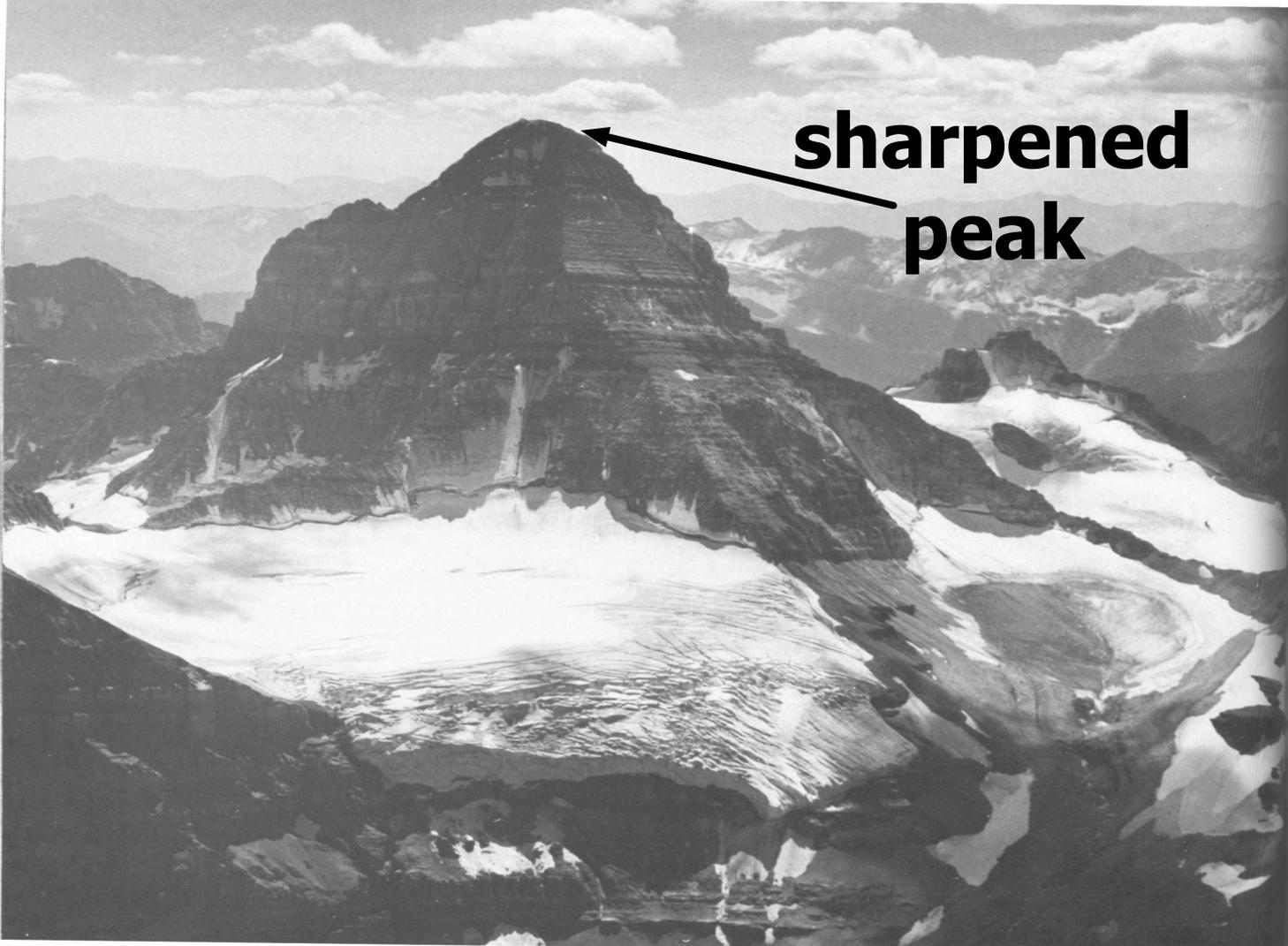
**bowl-shaped basin in
the sides of
mountains**

CIRQUE

Arête

a long
ridge

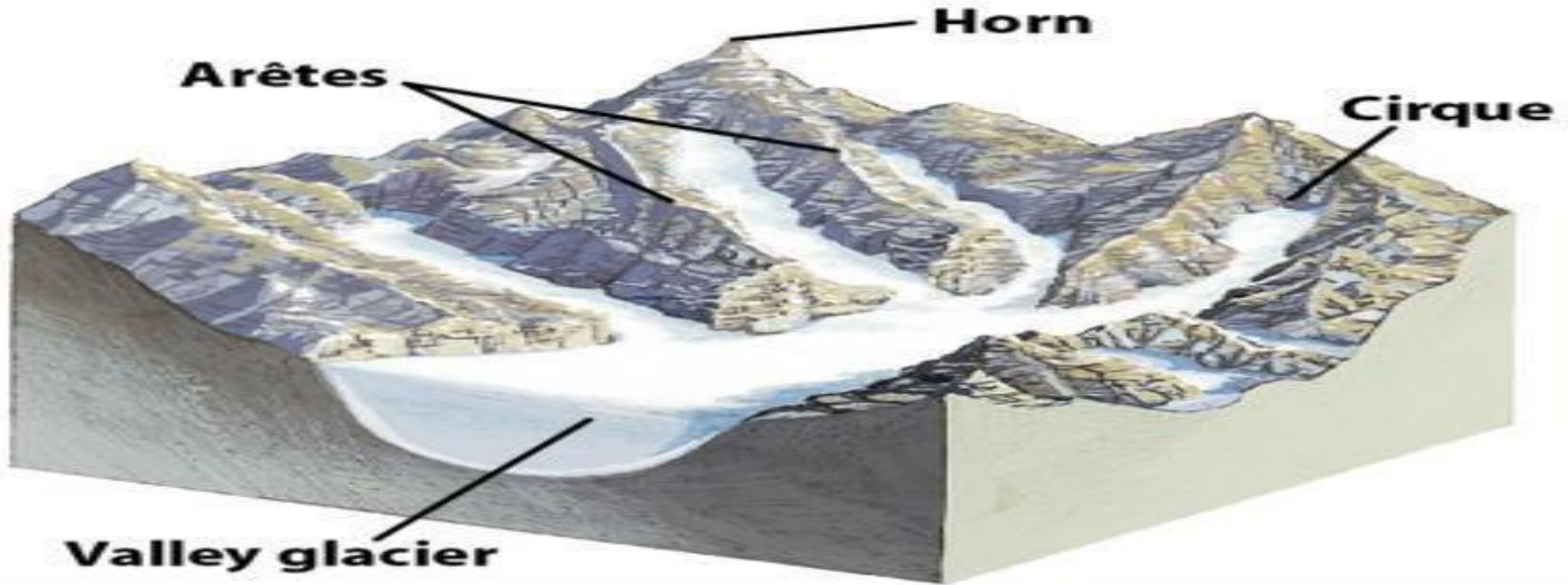




**sharpened
peak**

HORN

Valley glaciers flow down mountain slopes and along valleys, eroding as they go.



**Complete E-book
activity at the end
of the Glacier
section.**

Gravity

- Energy from the sun powers the movement of wind and water. But the force which attracts matter to Earth's center
- Plays a role in driving these agents of erosion.
- Examples:
 - When wind slows down, its load of sediment drops to the ground because of gravity.
 - Rocks, boulders, and soil fall down slopes because of gravity.
 - Water flows downhill, through valleys and waterfalls, because of gravity.
 - Gravity is the main force behind sudden rock falls and landslides that can change the shape of a mountain.

The following are all due to Gravity





A night-time photograph of a street scene. On the left, a tall utility pole stands with several power lines extending across the frame. In the center, a traffic light pole is visible, and further down the road, another utility pole is present. The street is illuminated by streetlights, and a yellow curb is visible on the right side. The background shows some trees and a dark sky. A watermark is present in the bottom left corner.

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**Create a left side page in
your Evidence ISN that
displays and explains the
agents of erosion**

In Evidence ISN

Will gravity always play a role in erosion of a shoreline feature, such as the collapse of a rock formation in Australia? If so, identify the process, or processes, that would lead up to the collapse. Record your evidence.

**Complete E-book
activities at the end of
exploration 2**

Complete Hands on lab

Pg 15 in book

- Write Answers to the questions in your book
- Draw a diagram of the setup of the lab and what happened in your ISN

**Complete lesson
self check in book
or Ebook**

Pg 19