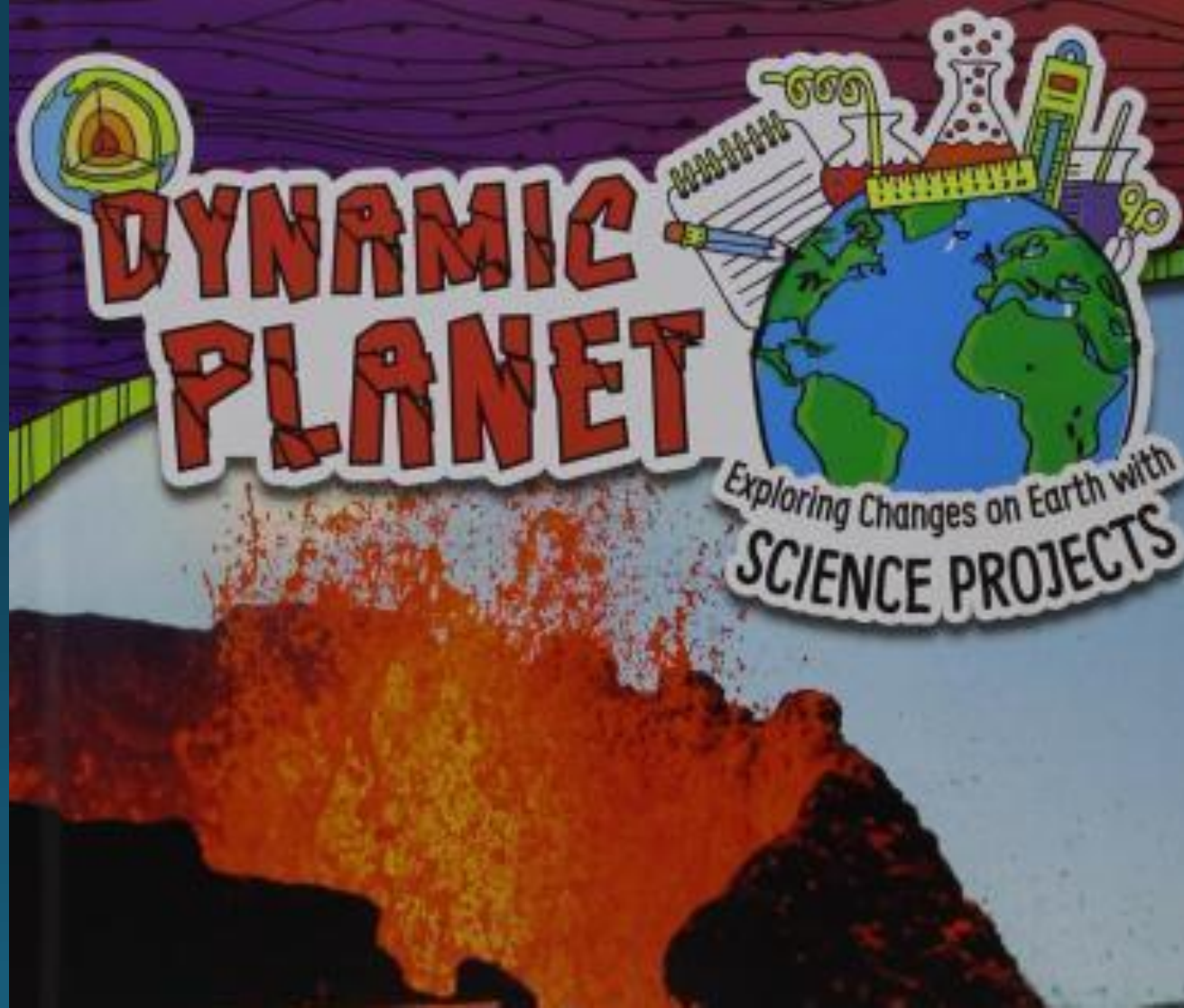


OUR CHANGING EARTH

Let's have a look around on our planet...The varied landforms give it a breathtaking view

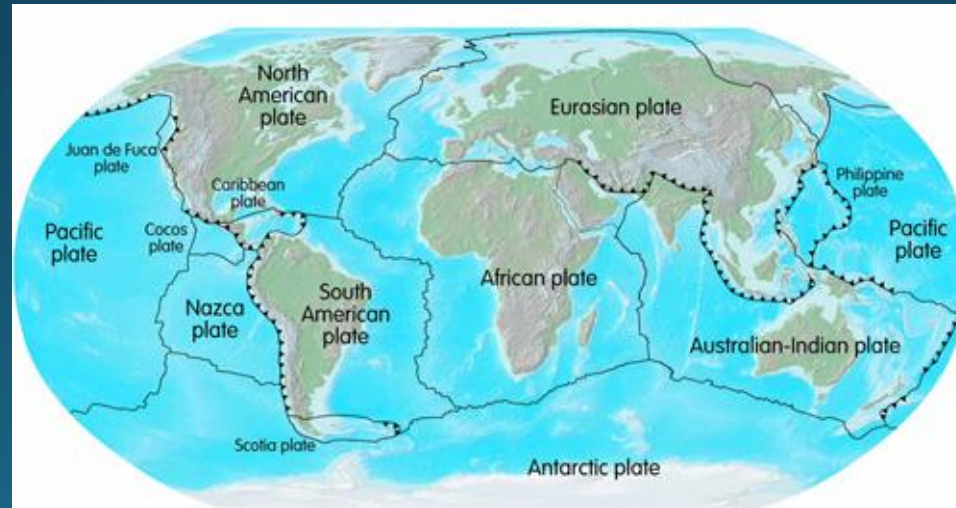


Our earth is a unique and dynamic planet that keeps on evolving continuously.

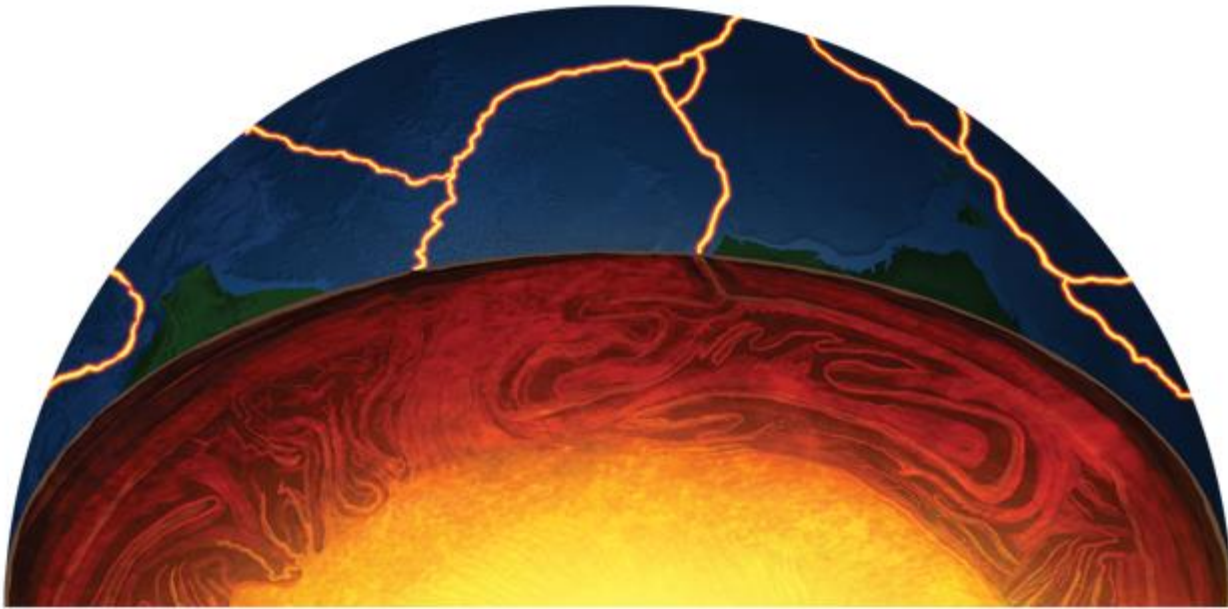


Lithospheric plates

- The Lithosphere or the hard top layer of the earth is fractured into seven major and a number of minor sections or plates. These lithospheric plates are actually floating on the denser molten material in the mantle. As the hot magma inside the Mantle keeps moving in a circular motion, it also moves the lithospheric plates simultaneously. The movement of these plates causes changes on the surface of the earth.



We can compare the movement of the lithospheric plates on mantle to the ice cubes floating on the denser mango shake...



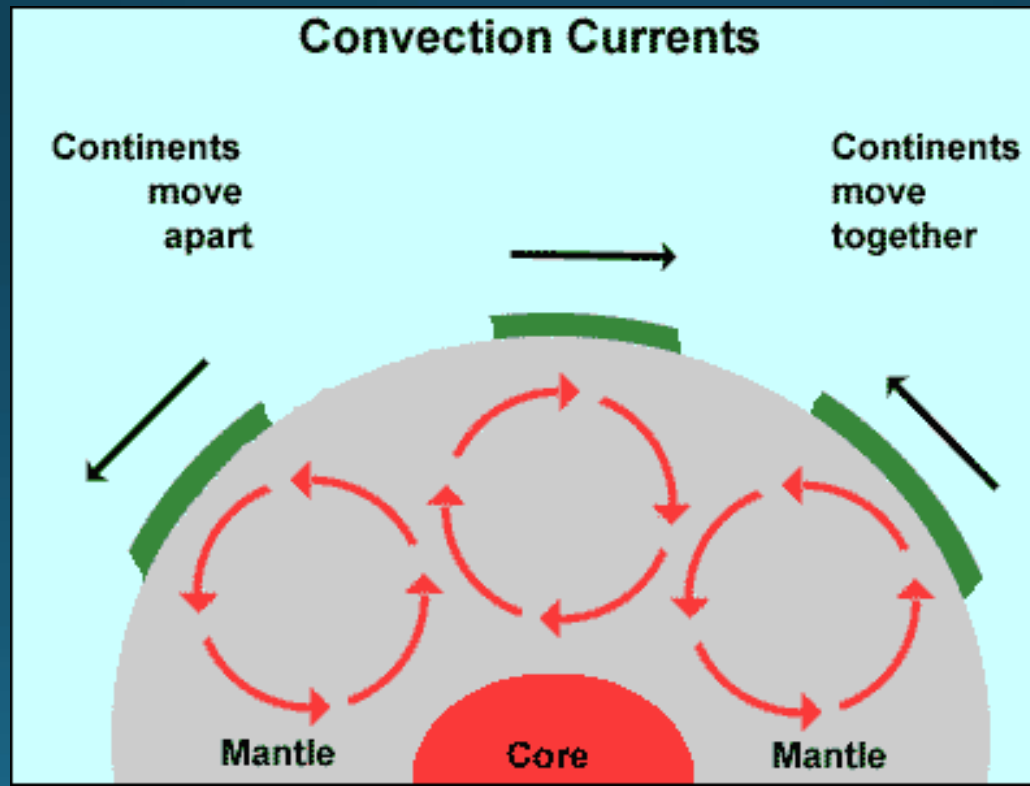
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Although the mantle is pretty hot and the mango shake you enjoy has to be chilled!!!

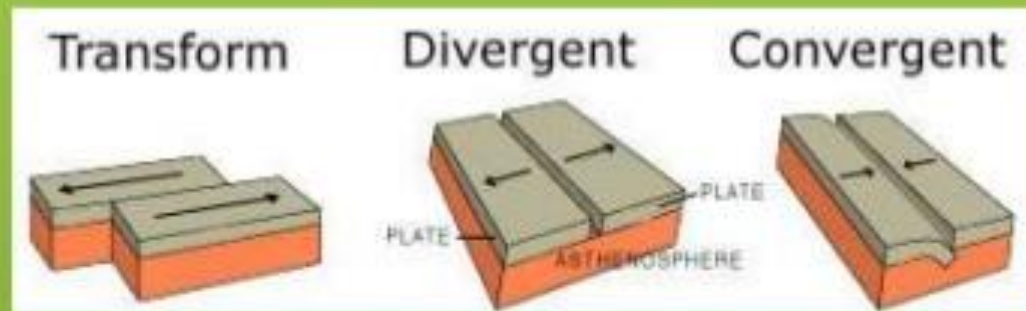
Why do the plates move?

The second layer of the earth, the mantle, keeps moving in a convection current due to immense heat. The lighter layer of crust, that comprises of continents float on the thicker mantle and hence move with the convection current.

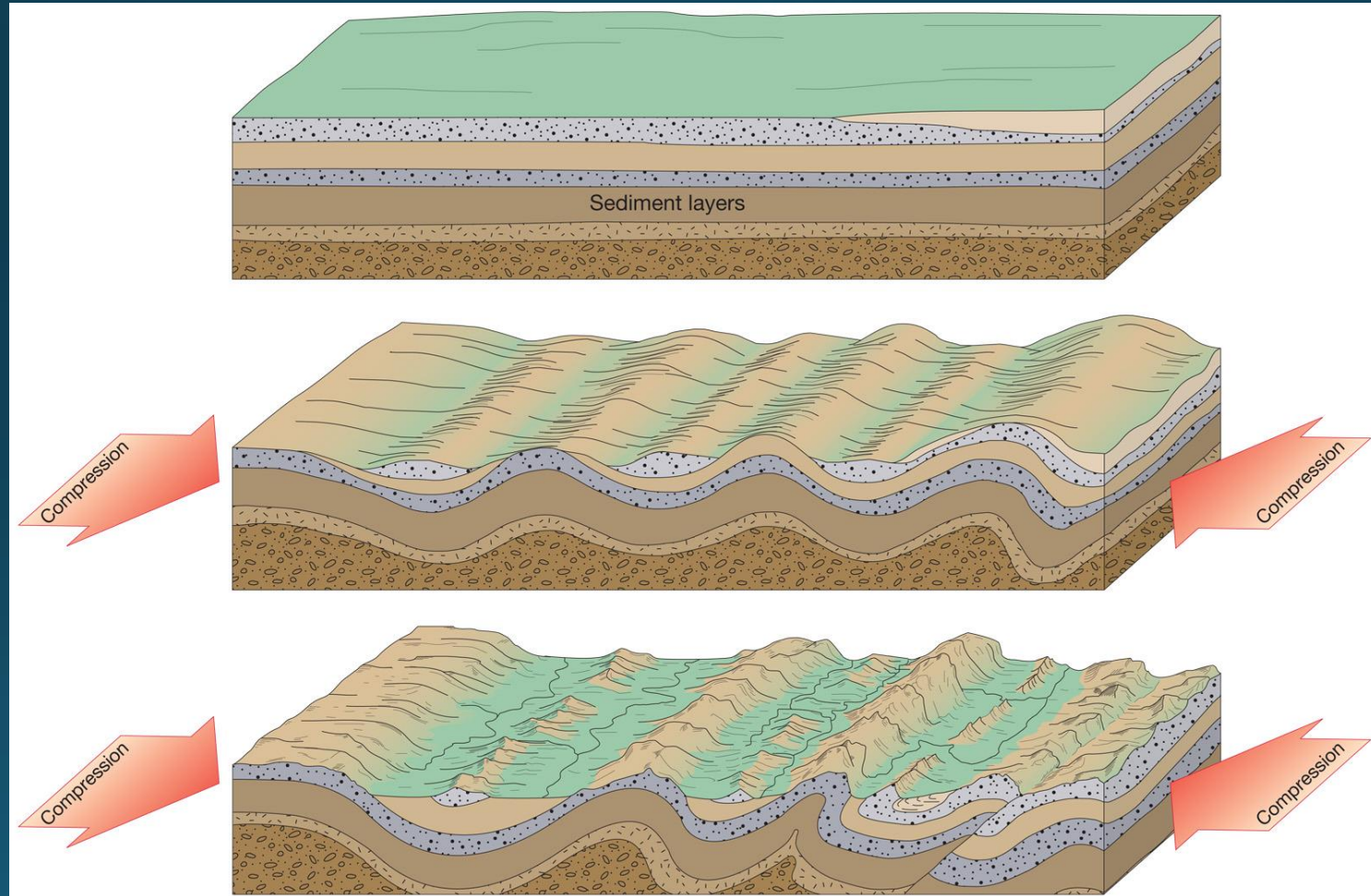


How do the plates move?

- Tectonic plates interact at locations called plate boundaries
- There are three types of movement at plate boundaries

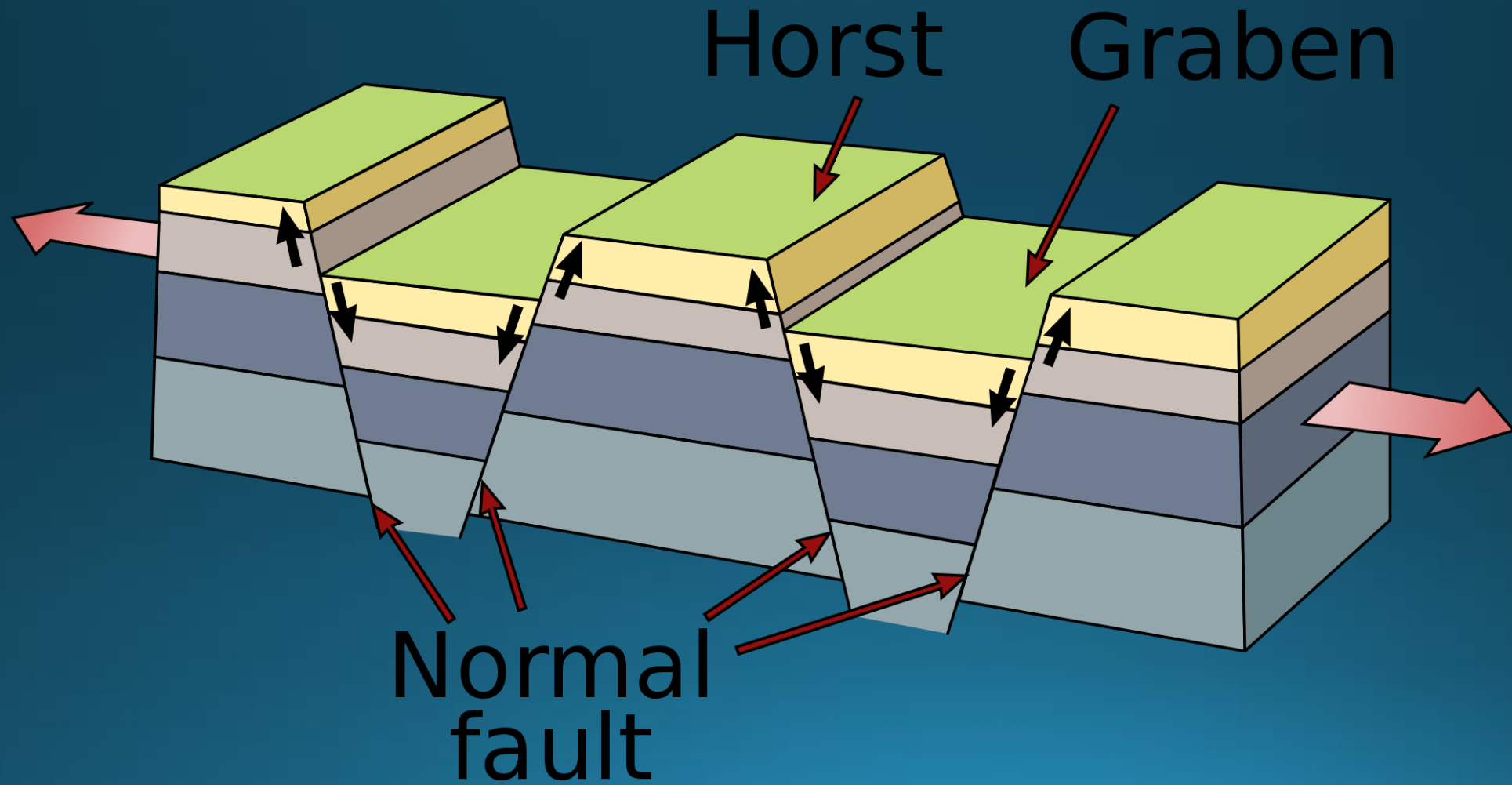


Converging boundary resulting in fold mountains





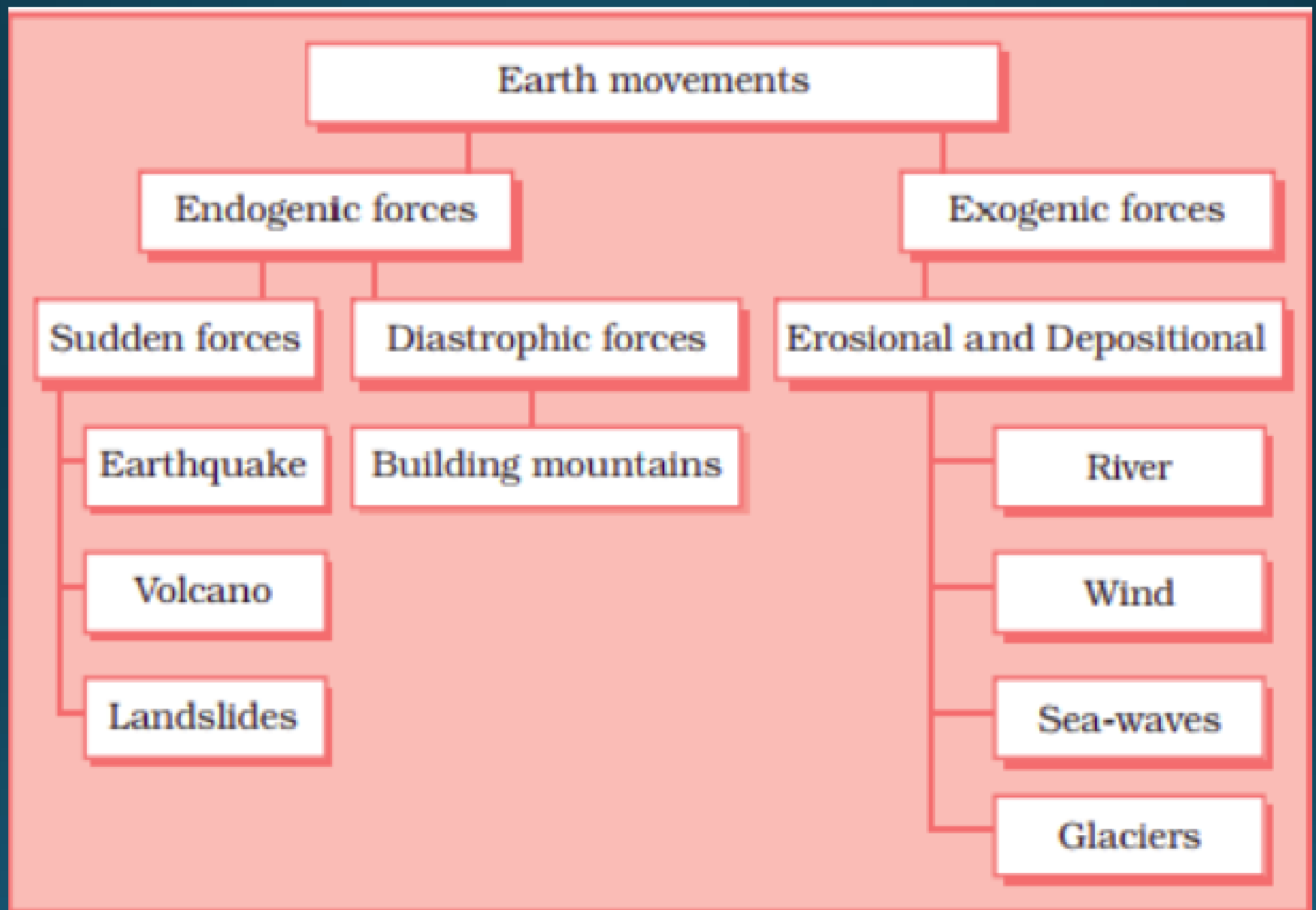
Diverging plate boundary causing faulting resulting in block mountains and rift valley





Endogenic and Exogenic Forces

- Such forces that act from inside the earth and cause the landforms to evolve are known as **Endogenic Forces**
- Forces that act on the surface of the earth to carve out landforms by the agents like wind, Water and ice, are known as **Exogenic Forces**



Weathering and Erosion

By the action of

- Work of River
- Work of Sea Waves
- Work of Glacier
- Work of Wind

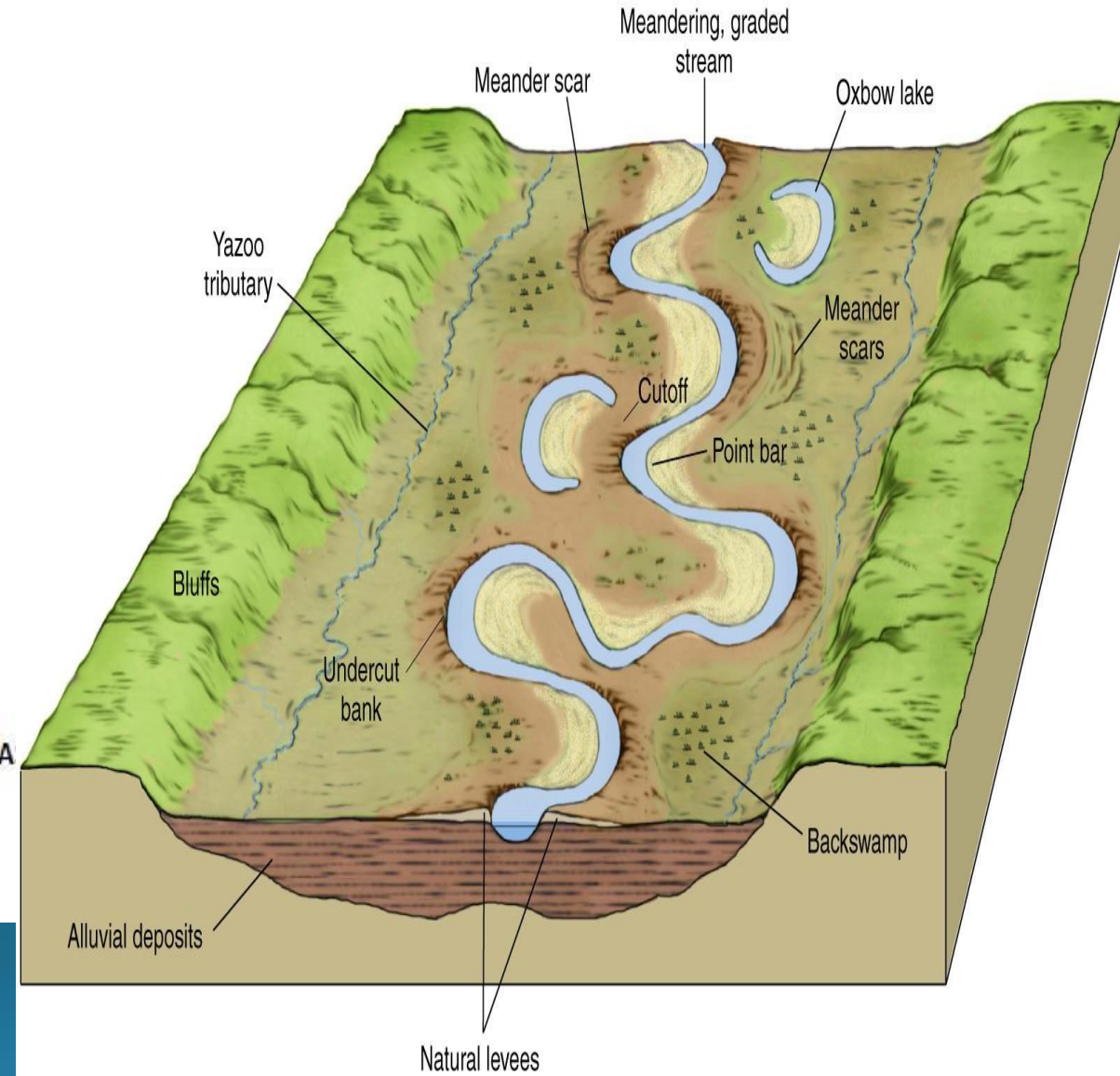
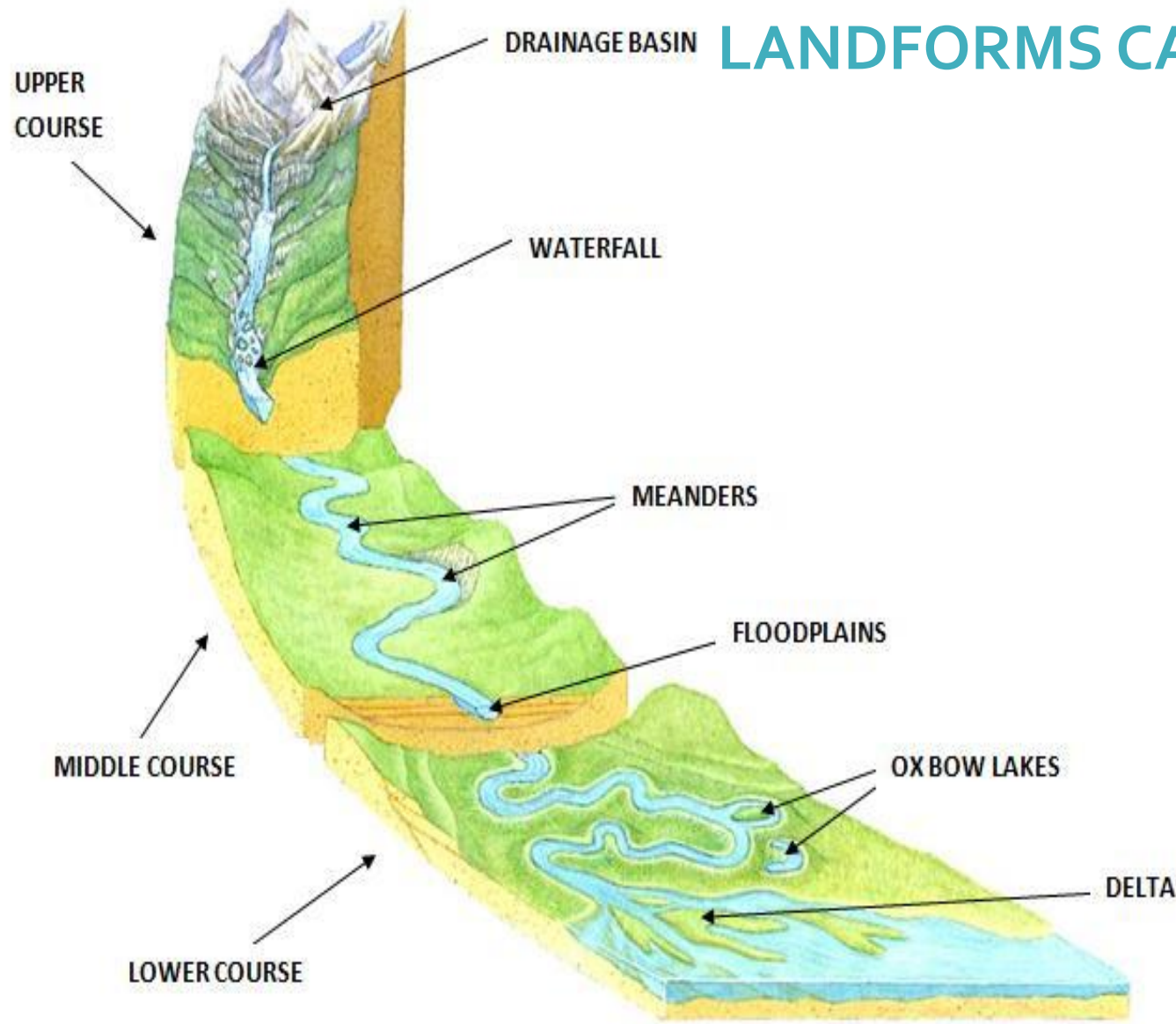
The landscape is being continuously worn away by two processes – weathering and erosion.

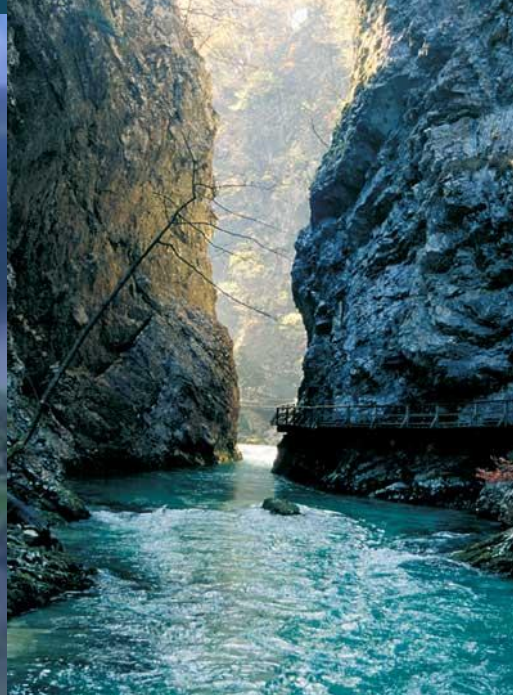
- **Weathering** is the breaking up of the rocks on the earth's surface. It happens due to the physical, chemical and biological action by temperatures, rainwater, living organisms etc. that cause cracks and chip off the rock surface into smaller fragments.
- **Erosion** is the wearing away of the landscape by different agents like water, wind and ice. These agents transport the weathered material away from their parent rock and deposit it to other places causing different landforms.

Work of River

- When the river tumbles at steep angle over very hard rocks or down a steep valley side it forms a **waterfall**.
- As the river enters the plain it twists and turns forming large bends known as **meanders**.
- In due course of time the meander loop cuts off from the river and forms a cut-off lake, also called an **ox-bow lake**.
- As it floods, it deposits layers of fine soil and other material called sediments along its banks. This leads to the formation of a flat fertile **floodplain**. The raised banks are called **levees**.
- As the river approaches the sea, the speed of the flowing water decreases and it begins to deposit its load. Each distributary forms its own mouth. The collection of sediments from all the mouths forms a **delta**.

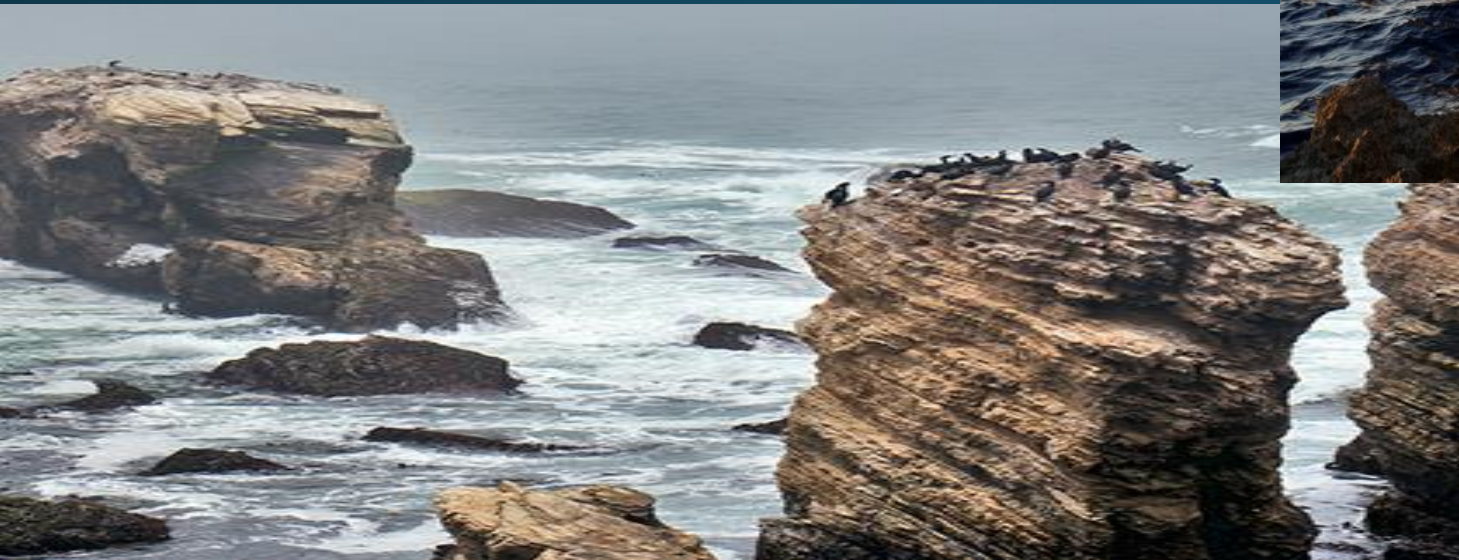
LANDFORMS CARVED BY THE ACTION OF A RIVER





Work of Sea Waves

- Sea waves continuously strike at the rocks. Cracks develop. Over time they become larger and wider. Thus, hollow like caves are formed on the rocks. They are called **sea caves**.
- As these cavities become bigger and bigger only the roof of the caves remain, thus forming **sea arches**.
- Further, erosion breaks the roof and only walls are left. These wall like features are called **stacks**.
- The steep rocky coast rising almost vertically above sea water is called **sea cliff**.
- The sea waves deposit sediments along the shores forming **beaches**.



Work of Wind

- In deserts the strong winds carry sand and erode the lower section of the rocks more than the upper part. Such rocks have narrower base and wider top and resemble the shape of a mushroom. Hence they are commonly called **mushroom rocks**.
- When the wind blows, it lifts and transports sand from one place to another. When it stops blowing the sand falls and gets deposited in low hill – like structures. These are called **sand dunes**. Sometimes crescent shaped dunes are formed known as **Barchans**.
- When the grains of sand are very fine and light, the wind can carry it over very long distances. When such sand is deposited in large areas, it is called **loess**.



Work of Glacier

- Glaciers are “rivers” of ice which too erode the landscape by bulldozing soil and stones to expose the solid rock below.
- Glaciers carve out deep hollows. As the ice melts they get filled up with water and become beautiful lakes in the mountains.
- The material carried by the glacier such as rocks big and small, sand and silt gets deposited. These deposits form **glacial moraines**.

