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Class 7<sup>th</sup>:Geography

Chapter 3: Our Changing Earth

By: Mrs.Nidhi Rao

The lithosphere is broken into a number of plates. They are called lithospheric plates. The plates are moving very slowly (a few millimetres each year) because they are floating on the molten magma inside the earth which is moving in a circular manner.

### **EVOLUTION OF LANDFORMS:**

Different forces cause different types of Earth's movements. There are two types of Earth movements which are divided on the basis of forces:

- **Endogenic:** The ones that work in the interior of Earth are called endogenic forces.
- **Exogenic:** The forces that are operational on the Earth's surface are called exogenic forces.

### **VOLCANO AND EARTHQUAKE:**

Due to the endogenic forces sudden or slow movements are produced. These sudden movements like volcanoes and earthquakes cause mass destruction over the surface of the earth.

- **Volcano:** A volcano is a vent for an opening in the earth's crust through which the molten material erupts suddenly.
- **Earthquake:** Earthquakes are, in effect, vibrations caused within the Earth surface. These vibrations are caused by the movement of the Lithospheric plates. Hence, earthquakes,

especially when they are of high intensity, cause major damage to the structures above Earth's surface.

There are three types of earthquake waves:

1. P waves or longitudinal waves
2. S waves or transverse waves
3. L waves or surface waves

The place in The crust where the movement starts is called focus. The place on the surface above the focus is called the epicenter. Vibration travel outwards from the epicenter as waves. Greatest damage is usually closest to the epicenter and strength of the earthquake decreases away from the centre.

## **MAJOR LANDFORMS :-**

Weathering and erosion are two processes through which landscape is being continuously worn away

- **Weathering:** weathering is is the breaking up of rocks on the earth's surface
- **Erosion :** Erosion is the deterioration, disintegration and wearing away of Earth's landscape by different factors like water, wind and ice, etc. The process of erosion and deposition create different landforms on the surface of the earth.

## **Work of a River**

Rivers have a major role in evolution of various landforms. The following landforms are created by the work of river:

- **Waterfall:** When the river tumbles at steep angle over very hard rocks or down the steep valley side it forms a waterfall.

- **Meander:** It is a large bend formed by twisting and turning of the river while it enters the plains.
- **Ox-bow lake:** Ox Bow lakes are crescent shaped lakes that are caused due to the trajectory of meandering rivers. The sides of the meanders created by the rivers are further eroded and deposited onto by the water. This causes the ends of the loop to come closer and closer. Eventually, the meander loop cuts off from the river course and forms a crescent shaped ox-bow lake.
- **Flood Plain:** Flood plains are formed when rivers overflow and deposit eroded material like sediments and fine soil onto the banks. Such material is conducive for cultivation. Hence, flood plains are very fertile.
- **Levees:** levees are the raised banks of the rivers.

### Work of Sea Waves

The coastal landforms are formed by the erosion and deposition of the sea waves. The following landforms created by the work of sea waves:

- **Sea Caves:** Sea caves are hollow like caves formed by continuous striking of sea waves at the rocks overtime.
- **Sea Arches:** As the waves keep striking the rocks, the cavities keep becoming bigger and bigger and ultimately form sea arches.

- **Stacks:** Further erosion by the waves breaks the roof, leaving only the walls. Such structures are known as stacks. Thus, through continuous erosion, sea caves are turned into stacks.
- **Sea Cliff:** The steep rocky coast rising almost vertically above sea water is called sea cliff.
- **Beaches:** The sea waves deposit sediments along the shores forming beaches.

### Work of Ice

Glaciers are rivers of ice which too erode the landscape by bulldozing soil and stones to expose the solid rock below. Glaciers form deep hollows which further get filled by water through ice melting and become beautiful lakes in the mountains. The materials carried by the glacier such as big and small rocks, sand and silt gets deposited. These deposits form Glacier moraines.

### Work of wind

Wind is an active agent of erosion and deposition in the deserts full stop the following landforms are created by the work of winds:

- **Mushroom rocks:** Mushroom rocks are found in deserts in the shape of a mushroom. These rocks have narrower base and wider top as winds Erode the lower section of the rock more than that of the upper part.
- **Sand dunes :** Sand dunes are low hill like structures which are formed by the deposition of blowing winds in the desert.
- **Loess:** Loess is formed when sand grains are deposited in large areas by the wind. The grains of sand a very fine and light.

**Thus, the wind can carry it over very long distances. Example large deposits of loess is found in China.**