The lithosphere is broken into a number of plates known as the lithosphere plates. You will be surprised to know that these plates move around very slowly-just a few millimeters each year. This is because of the movement of the molten magma inside the earth.

The movement of these plates causes changes on the surface of the earth. The earth movements are divided on the basis of the force which causes them. The forces which act in the interior of the earth are called as endogenic forces and the forces that work on the surface of the earth are called as exogamic forces.

A volcano is a vent (opening) in the earth's crust through which molten material erupts suddenly.

Volcanoes are divided into three types based on their frequency of eruption – active volcanoes, dormant volcanoes and extinct volcanoes.

Active volcanoes are those that have erupted recently. Mt Etna and Mt Stromboli of the Mediterranean Sea are the most significant examples of these category.

Dormant volcanoes are those that have been quit for a long time but show signs that they could erupt again. Mt Vesuvius is an excellent example of dormant volcano.

Extinct volcanoes, like Mt Kilimanjaro in Tanzania, Africa, show no indication of future eruption.

When the lithosperic plates move, the surface of the earth vibrates. The vibrations can travel all round the earth. These vibrations are called earthquakes. The place in the crust where the movement starts is called the focus. The place on the surface above the focus is called the epicenter.

An earthquake is measured with a machine called a seismograph. The magnitude of the earthquake is measured on the Richter scale.

Earthquake preparedness: Where to take shelter during an earthquake:

- Safe spot- under a kitchen counter, table or desk, against an inside corner or wall.
- Stay away from- fire places, areas around chimneys, windows that shatter including mirrors and picture frames.
- Be prepared- spread awareness amongst your friends and family members and face any disaster confidently.

Major land forms: 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. Erosion is the wearing away of the landscape by different agents like water, wind and ice. The eroded material is carried away or transported by water, wind etc .and eventually deposited. This process of erosion and deposition create different landforms on the surface of the earth.

Work of a river: The running water in the river erodes the landscape. When the river tumbles at sleep 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. Due to continuous erosion and deposition along the sides of the meander, the ends of the meander loop come closer and closer.

1. 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.
2. At times the river overflows its banks. This leads to the flooding of the neighboring areas. 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 the river beings to break up into a number of streams called distributaries. The river becomes so slow that it begins to deposit its load. Each distributary forms its own mouth. The collection of sediments from all the mouths forms a delta.

Work of a sea waves: The erosion and deposition of the sea waves gives rise to coastal landforms. Seawaves continuously strike at the rocks. Cracks developed. 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.

Erosion breaks the roof and only walls are left. These walls 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 ice: 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.

Work of wind: An active agent of erosion and deposition in the deserts is wind. In desert you can see rocks in the shape of a mushroom. Commonly called mushroom rocks. Winds erode the lower section of the rock more than the upper part. Therefore, such rocks have narrower base and wider top.

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.

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. A large deposit of loess is found in china.

Moraines: A cirque is an armchair-like depression caused by the erosive action of a glacier. When ice accumulates in hallows high up on mountain slopes, the alternate freezing and thawing of the glacier ice causes the rock below to expand and contract till it finally breaks down. In this manner, the ice deepens the hallow, now the weathered rock debris also acts as an agent of erosion. Cirques can be as big as a square kilometre in area. When the ice melts, the cirque becomes a lake called a tarn. Moraines- glaciers transport eroded rock debris with them as they move, and deposit them on the floor of valleys and the slopes of mountains. Such formations are called moraines.

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