

## Chapter – 3: Our Changing Earth

- Lithosphere – broken into many plates – **Lithospheric plates**
- Plates – move very slowly – few millimetres every year – movement of molten magma – circular manner
- Movement – causes changes on the surface – divided on the basis – forces which cause them
- Endogenic forces
  - Forces – act in the interior of earth
  - Sometimes – sudden movements – cause mass destruction on the surface – earthquakes and volcanoes
    - Volcano – vent (opening) – earth's crust – molten magma erupts
    - Earthquakes – lithospheric plate move – vibrates – vibrations travel around world
      - Place in crust – movement starts – **focus**
      - Place on surface – above the focus – **epicenter**
      - Vibrations travel – outwards as waves
      - Strength – decreases away from centre
      - Cannot be predicted – impact can be minimized – prepared before-hand
      - Local prediction methods – studying animal behavior, fish in the ponds get agitated, snakes come to surface
  - Other times – slow movements
    - Create mountains
- Exogenic forces
  - Forces – act on the surface
  - River, wind, sea-waves
- Earthquake preparedness
  - Safe spot – under kitchen counter, table, desk against a corner or wall
  - Stay away from – fire places, chimneys, windows, mirrors, picture frames
  - Be prepared – spread awareness among friends and family members

### Major land forms

- Landscape – changing continuously – 2 processes – weathering and erosion
- Weathering – breaking up of rocks on the surface
- Erosion – wearing of landscape by water, wind, ice
- This process of weathering and erosion – create landforms

### Work of a River

- Running water – erodes landscape
- River – tumbles at steep angle – over hard rocks or steep valleys – waterfall
- River – enters plains – twists and turns – forming large bends – **meanders**
- With time – continuous erosion ends of meander – come closer
- Meander loop – cuts off – forms a cut-off lake – **ox-bow lake**
- Sometimes – river overflows – deposits layer of soil and sediments – forms flat fertile **floodplain**
- River – approaches the sea – speed decreases – breaks up into distributaries – deposits sediments – forming **delta**

**Work of Sea Waves**

- Erosion and deposition of seas waves – coastal landforms
- Sea waves – strike at rocks – cracks develop – over time – become wider
- Hollow rocks – formed – **sea caves**
- Cavities – get bigger – only roof left – forming **sea arches**
- Further erosion – breaks the roof – only walls left – **stacks**
- Steep rocky coasts – rising vertically – **sea cliff**
- Sea waves – deposit sediments on the shores – forming beaches

**Work of Ice**

- Glaciers – “rivers of ice” – erode the landscape – expose solid rock below
- Glaciers – carve out deep hollows
- Ice melts – hollows fill up with water – create lakes
- Material carried by glaciers – rocks, sand, silt – deposited – form **glacial moraines**

**Work of Wind**

- Erosion and deposition – deserts – wind
- Deserts – rocks – shape of mushroom – **mushroom rocks**
- Winds – erode lower part more than upper part
- Wind blows – transport sand from one place to another – when wind stops – sand deposits – hill-like structure – **sand dunes**
- Grains of sand – very fine and light – wind carry it over large distance – sand deposits over large areas – **loess** – found in China