

CBSE • CLASS 9 • SOCIAL SCIENCE

SOCIAL SCIENCE

CHAPTER 02

Shaping of the Earth's Surface



NCERT SOLUTIONS



ENERGY INSIDE THE EARTH

Q1. What are the sources of energy that are required to cause movements associated with the internal forces of the Earth?

The main energy source is the heat inside the Earth.

- The core is very hot. Its heat warms material in the mantle.
- Hot mantle material rises; cooler material sinks. This circulation is called convection.
- Convection helps move the lithospheric plates.
- Plate movements cause folding, faulting, earthquakes and volcanic activity.



LANDFORMS & INTERNAL FORCES

Q2. Relate various physiographic divisions you have studied in the earlier grades with various endogenic forces responsible for their origin.

Endogenic forces work inside the Earth and build or change large landforms.

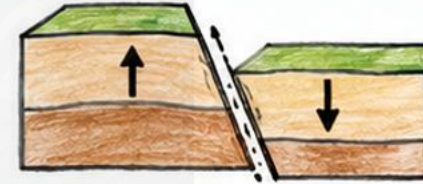
- **Fold mountains:** When plates collide, rock layers are compressed and folded. The Himalayas formed in this way.



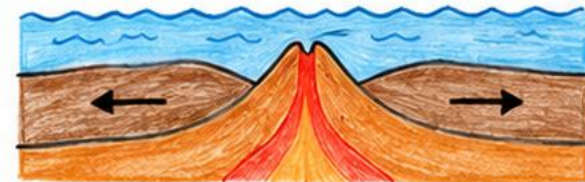
- **Volcanic landforms:** Magma reaches the surface and builds up new rock.



- **Faulted landforms:** Crustal blocks may rise or sink along faults, producing raised blocks, valleys and basins.



- **Ocean floors:** At divergent boundaries, plates move apart and magma forms new crust.



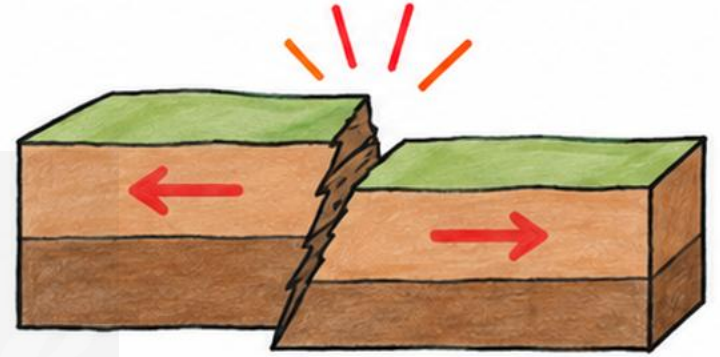
Plains are mainly shaped by river deposition, an external process, rather than directly by an endogenic force.

EARTHQUAKES: WHY & WHERE?

Q3. Why and where do earthquakes occur frequently? Is it possible to predict earthquakes?

Why?

Moving plates build up stress in rocks. When rocks suddenly slip along a fault, energy is released and the ground shakes.



Where?

Earthquakes occur frequently near plate boundaries, where plates collide, separate or slide past one another. The Pacific Ring of Fire is a major earthquake belt.

Can we predict them?

No reliable method can predict the exact time, place and magnitude of a future earthquake. Scientists can identify high-risk areas, so preparation is important.

PLATE MOVEMENTS & HAZARDS

Q4. "Plate movements are responsible for the distribution of earthquakes and volcanoes." Explain.

Convergent boundary



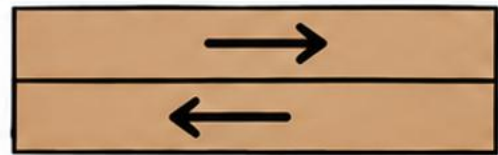
- Convergent boundary: Plates move towards each other. Collision or subduction produces earthquakes; subduction also helps magma form and rise.

Divergent boundary



- Divergent boundary: Plates move apart. Magma rises to form new crust, producing volcanic activity and earthquakes.

Transform boundary



- Transform boundary: Plates slide past each other. Sudden slipping causes earthquakes; volcanoes are not usually associated with this boundary.

Thus, the pattern of plate boundaries explains the main earthquake and volcanic belts, including the Pacific Ring of Fire.



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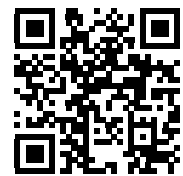


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