

# How India moved: Plate Tectonics and India's Landscape



## Tour of India Educator Handout

In this activity, students demonstrate their understanding of how selected physical features of India formed. This handout is a guide for educators in leading small-group presentations of physical features in India through a “tour” of the country.

1. Tell students that each group will present its research on India's physical features through a class “tour” of the country. At each tour stop, the students who researched that feature will present what they learned, making sure to explain how plate tectonics impacted the feature either directly or indirectly.
2. Guide the class tour with a map of the physical geography of India. Use a projector to show the map or have students follow along on a copy of their own. Alternately, you may prefer to lead the tour of India's physical geography using a virtual globe. For a more challenging presentation, ask students to draw their feature on a blank map or to point it out on the map themselves.
3. Start with the Himalayas, which students learned about in the second activity. Lead a class discussion to remind students about this physical feature. You may also use this opportunity to model presentation style by demonstrating what you expect in their presentations.
4. Travel next to the Indus River and the Ganges River, the two main river systems in India, and ask the group of students who researched rivers to present.

**Background:** Most of the world's major rivers are fed from mountain sources. More than half of humanity depends on mountains for water. This is true of India. The steep drop from the Himalaya to the plains of India causes rivers to flow toward the seas. India's two main river systems, the Indus and the Ganges, originate in the Himalayas and flow in opposite directions to the sea. The Indus River is located in northwest India and empties into the Arabian Sea. The Ganges and its many tributaries flow southeast and join together to empty into the Bay of Bengal. This has created the largest delta in the world. These rivers provide water year round for the regions through which they flow.

5. Next, ask students who researched the Indo-Gangetic Plain to present.

**Background:** As the flow from the mountains, rivers deposit rich silt and debris. Over time, this process has created the alluvial soil of the Indo-Gangetic Plain and the river deltas along the eastern coastline.

6. Next, point out the Deccan Plateau, just south of the Indo-Gangetic Plain. Have students present.

**Background:** Make sure that students understand that a plateau is a large flat area that stands above the surrounding land. Plateaus range from 300 to 3000 feet high. The upward movement in Earth's crust helps to form plateaus.

7. Now, move from the Deccan Plateau to the two mountain ranges that flank it, the Eastern and Western Ghats.

**Background:** The Eastern Ghats extend about 900 miles along the coast of the Bay of Bengal and the Western Ghats, which have been labeled as a “biodiversity hotspot,” extend about 1,000 miles along the coast of the Arabian Sea. The Western Ghats and the Eastern Ghats are believed to have formed during the break-up of the super continent, known as Rodinia some 600 million years ago.

8. Finally, have the students who researched the Thar Desert present.

**Background:** The Thar Desert is located in northwestern India. This desert is classified as a rain shadowed desert because it is rain-shadowed by the Himalaya to the northeast and other mountain ranges to the southeast and west. Rain shadowed means that the mountains create a “leeward shadow of dryness.” As the air begins to descend little moisture is left. Therefore, this area receives an annual average rainfall of less than ten inches. Have the students add the Thar Desert to their maps.



9. Lead a class discussion on how plate tectonics influenced the physical landscape of India, taking the time to discuss each individual feature presented. Discuss which were directly impacted by plate tectonics and which were indirectly impacted. Ask students to consider how different India would be if plate tectonics had not shifted and shaped its landscape. Discuss.