

Mountains and Volcanoes Compression forces squeeze rocks together. Where plates come together, compression forces produce several effects. As continental plates collide, the forces that are generated cause massive folding and faulting of rock layers into mountain ranges such as the Himalaya, shown in **Figure 14**, or the Appalachian Mountains. The type of faulting produced is generally reverse faulting. Along a reverse fault, the rock layers above the fault surface move up relative to the rock layers below the fault.

Reading Check What features occur where plates converge?

As you learned earlier, when two oceanic plates converge, the denser plate is forced beneath the other plate. Curved chains of volcanic islands called island arcs form above the sinking plate. If an oceanic plate converges with a continental plate, the denser oceanic plate slides under the continental plate, folding and faulting at the continental plate margin can thicken the continental crust to produce mountain ranges. Volcanoes also typically are formed at this type of convergent boundary.

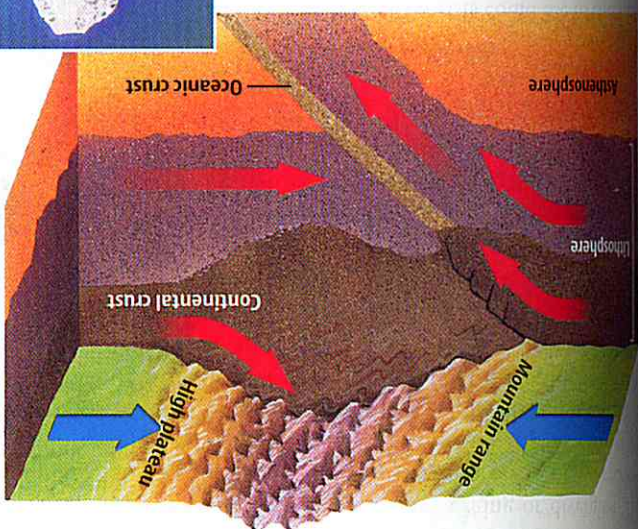


Figure 14 The Himalaya still are forming today as the Indo-Australian Plate collides with the Eurasian Plate.



Curriculum Connection

Geography Have students search the Internet, newspapers, and magazines for stories about earthquakes and volcanic eruptions that have occurred as a result of plate movements along faults. Have students summarize their findings in written paragraphs to share in class. Then have them make a bulletin board display that includes a map showing the location of these tectonic events.

Visual-Spatial L2

Moving Mountains As the Indo-Australian Plate continues to push into and under the Eurasian Plate, the Indian Plate is thrust up over it. India moves into Asia at a rate of 3.7 to 5.4 cm/yr, thrusting the Himalaya about 1 cm higher each year. But because forces of erosion wear down the mountains by about the same amount annually, they remain about the same height.

Teacher FYI

Answer continental-continental: high mountain ranges; oceanic-oceanic: island arcs; oceanic-continental: mountains and volcanoes

Reading Check

Make a Model

Strike-Slip Faults Provide clay models to show the movement of plates at a strike-slip fault. Have them include surface features offset by the movement.

Kinesthetic L1



Volcanologist Ask students to research to find out the type and level of degree required to become a volcanologist. Then have them research the course requirements and duration of such a degree at a university of their choice.