

<p>Important Concepts</p> <p>Forces That Shape the Earth</p> <p>9-12 Level</p>	<p>Alaska Science Content Standard D2 Students develop an understanding of the origins, ongoing processes, and forces that shape the structure, composition, and physical history of the Earth.</p>
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Grade Level Expectations:

The student demonstrates an understanding of the forces that shape Earth by:

[9] **SD2.1** recognizing the dynamic interaction of erosion and deposition including human causes

[9] **SD2.2** describing how the theory of plate tectonics explains the dynamic nature of its surface

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According to AAAS's Benchmarks for Science Literacy*, some of the things that students should know and understand by the end of the twelfth grade are:

- The outward transfer of the earth's internal heat causes regions of different temperatures and densities. The action of a gravitational force on regions of different densities causes the rise and fall of material between the earth's surface and interior, which is responsible for the movement of plates.
- Earthquakes often occur along the boundaries between colliding plates, and molten rock from below creates pressure that is released by volcanic eruptions, helping to build up mountains. Under the ocean basins, molten rock may well up between separating plates to create new ocean floor. Volcanic activity along the ocean floor may form undersea mountains, which can thrust above the ocean's surface to become islands.
- Scientific evidence indicates that some rock layers are several billion years old.

*Project 2061, American Association for the Advancement of Science, Benchmarks for Science Literacy. New York: Oxford University Press, 1993.