

Plate Tectonics and Earth's Structure

Chapter 4 Plate Tectonics

The BIG Idea

Earth's plates are large pieces of the lithosphere that move slowly, producing faults, mountain ranges, volcanoes, and deep-ocean trenches.

- What causes convection currents in Earth's mantle?
- What was Alfred Wegener's hypothesis about the continents?
- What is the process of sea-floor spreading?
- What are the three types of plate boundaries?

Chapter 5 Earthquakes

The BIG Idea

Plate motions produce stress in Earth's crust that leads to faults, mountain building, and earthquakes.

- What land features result from the forces of plate movement?
- How does the energy of an earthquake travel through Earth?
- What kinds of damage does an earthquake cause?

Chapter 6 Volcanoes

The BIG Idea

Volcanic eruptions result from plate motions and produce landforms such as volcanic mountains and lava plateaus.

- Where are most of Earth's volcanoes found?
- What happens when a volcano erupts?
- What landforms do lava and ash create?



Unit 2 Assessment



Connecting the BIG Ideas

A junction is a point where things come together. At the Mendocino Triple Junction, three of Earth's plates come together off the coast of northern California.

As you can see in the map, the triple junction marks one end of the San Andreas fault. The Pacific plate slides north along the fault until it reaches the junction. There, the Pacific plate twists to the west. But north of the junction, the Gorda plate pushes east and collides with the North American plate. This collision forms a subduction zone.

Why is the Mendocino Triple Junction important? Plate movements around the junction cause earthquakes and volcanoes.

Strong earthquakes occur as the Gorda plate sinks beneath the North American plate. Many earthquakes also happen along the boundary of the Gorda and Pacific plates and along the San Andreas fault.

Huge active volcanoes—Mount Shasta and Lassen Peak—have formed through subduction of the Gorda plate. Geologists have also detected volcanic activity in the ocean along the western edge of the Gorda plate.



HINT

1. What type of plate boundary is found where the Gorda Plate meets the North American Plate? (*Chapter 4*)

- a. colliding
- b. spreading
- c. sliding
- d. uplifting

HINT

2. What type of fault is the San Andreas fault? (*Chapter 5*)

- a. tension
- b. normal
- c. reverse
- d. strike-slip

HINT

3. What caused the volcanic activity along the western edge of the Gorda plate? (*Hint: Look at the map to see the type of plate boundary there.*) (*Chapter 6*)

- a. lava erupting from a deep-ocean trench
- b. magma forming above a subducting plate
- c. lava erupting from a mid-ocean ridge
- d. plates moving over a hot spot

4. **Summary** Write a paragraph summarizing plate movements at the Mendocino Triple Junction and the effects of those plate movements on the geology of northern California.