

# Mapping Tectonic Plates

Name \_\_\_\_\_

**Background:** Have you ever looked closely at a map of the world and noticed that some of the continents look like pieces of a giant puzzle? In fact, scientists think the continents were once joined together in a large supercontinent called Pangaea about 245 million years ago. This idea was developed by the German scientist Alfred Wegner in 1912. Wegner’s theory of continental drift stated that the continents drifted away from each other over time until they arrived at their current positions. Some of his evidence included the puzzle-like fit of the continents and the discovery of fossils of the same animals on different continents that are now located very far apart. However, Wegner couldn’t explain how or why the continents moved.

In the 1960’s, scientists began to better understand the movements of Earth’s crust. They discovered large systems of undersea mountains, ridges, and active volcanoes. They also discovered that the seafloor actually moved. They developed the theory that the seafloor was moving apart at rift valleys in a process called seafloor spreading. These and other discoveries led scientists to develop the new theory of plate tectonics.

The theory of plate tectonics proposes that Earth’s surface is made up of many large and small tectonic plates. Tectonic plates ride on Earth’s surface and often contain both continental and oceanic crust. The plates are less dense than the layer of Earth below. This means they “float,” much like ice floats on a lake. Not only do the plates float, but they also move. The movement of the plates is responsible for a wide range of geologic processes, including mountain building, earthquakes, and the formation of volcanoes. In this activity you will label the major tectonic plates on a map and identify various plate boundaries.

**Materials:** Mapping Tectonic Plates map (p. 22), atlas/map of tectonic plates, colored pencils

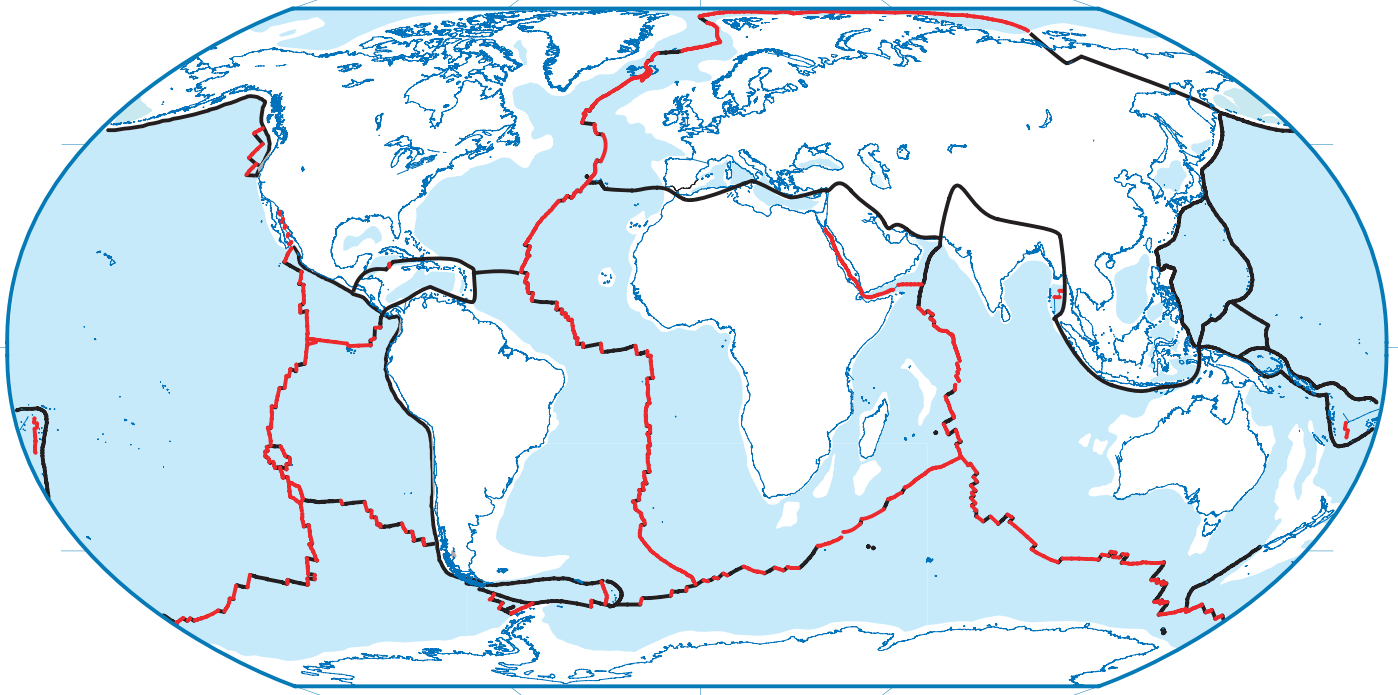
## Directions:

1. Use an atlas, map, or reference book to determine the locations of the tectonic plates.
2. On the map titled “Mapping Tectonic Plates” (p. 22), label the tectonic plates listed below:  
Pacific Plate, North American Plate, South American Plate, Antarctic Plate, Eurasian Plate, Australian Plate, African Plate, Juan de Fuca Plate, Indian Plate, Nazca Plate, Scotia Plate, Arabian Plate, Caribbean Plate, Cocos Plate, and Somalia Plate.
3. Use colored pencils to label the following:  
Red pencil to label a convergent boundary  
Green pencil to label a divergent boundary  
Blue pencil to label a transform fault

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### Questions:

1. On what plate do you live?
2. What is the largest plate?
3. Where is the Mid-Atlantic Ridge? Which plates does it border?
4. What plates are responsible for forming the Himalayan Mountains?
5. Where is the San Andreas fault? What movements cause earthquakes along it?