Reading 5.1 – Ring of Fire

Getting Ready

At the beginning of this unit, you looked at a map of volcanic activity on Earth. One of the patterns you noticed is that volcanoes are often found in a line. Why do you think volcanoes are found in a line?

What Is the Ring of Fire?

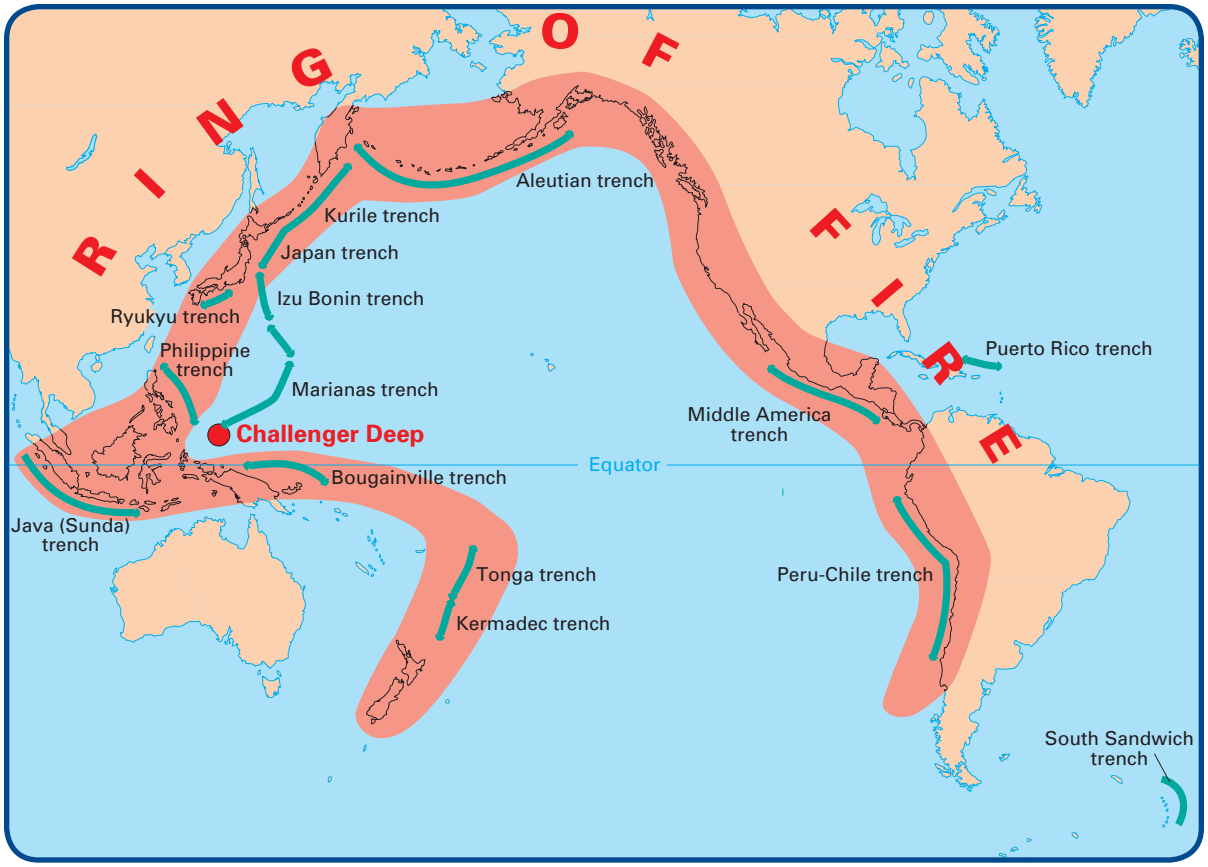
What shape does the earthquake and volcano pattern look like to you? You might say it looks like an upside-down letter U. Maybe it looks like a horseshoe to you. Scientists say it is ring-shaped. Scientists call this pattern the Ring of Fire. The Ring of Fire is the line reaching from Australia, along the coast of Asia and down the western coast of the Americas, where there are many volcanoes and earthquakes. There are many more earthquakes here than in other areas not along the Ring of Fire. As you may have guessed, this Ring is a plate boundary. It is where many pieces of the earth's crust meet and rub against each other. The blue lines represent oceanic trenches. The thick red area identifies the general shape of the Ring of Fire, centered on the major Pacific plate.

You can see that the pattern of volcanoes and earthquakes matches the plate boundary line that circles the Pacific Ocean. It is called the Ring of Fire because when volcanoes erupt it looks like they are on fire.

The Ring of Fire is just one example of this phenomenon of earthquakes and volcanoes occurring in similar locations on Earth. Most plate boundaries around the world have similar patterns of geologic phenomena because these features and events occur at most plate boundaries.

How Did Scientists Figure Out Where the Fault Lines Are?

Scientists can use two methods to figure out where fault lines are located. A fault can be a plate boundary, such as the one found between two plates that rub alongside one another, resulting in earthquakes. One method is to simply look at the pattern of earthquakes (just as you did in class). This will show where the faults are located because faults and earthquakes often coincide and are found in the same places. A second method to find fault lines is to walk around outside with a map, compass, and other geological tools. Geologists know how to spot a fault and are able to find them with their eyes as they walk through a region. Finding a fault requires that the geologist know what signs to look for. These scientists have been



trained to be able to identify faults, and once one is found, it can be plotted on a map, just like you plot data on a graph.

Making Sense

1. Why is there an earthquake and volcano pattern?

2. Knowing that volcanoes are found around the Ring of Fire, what does this tell you about how plates are moving at those locations?

3. What other features would you expect to find near the Ring of Fire, given what you have learned in Activity 2.2 (think back to the video clips you watched in class)?