

1.4 The Ring of Fire



Maps and Graphs



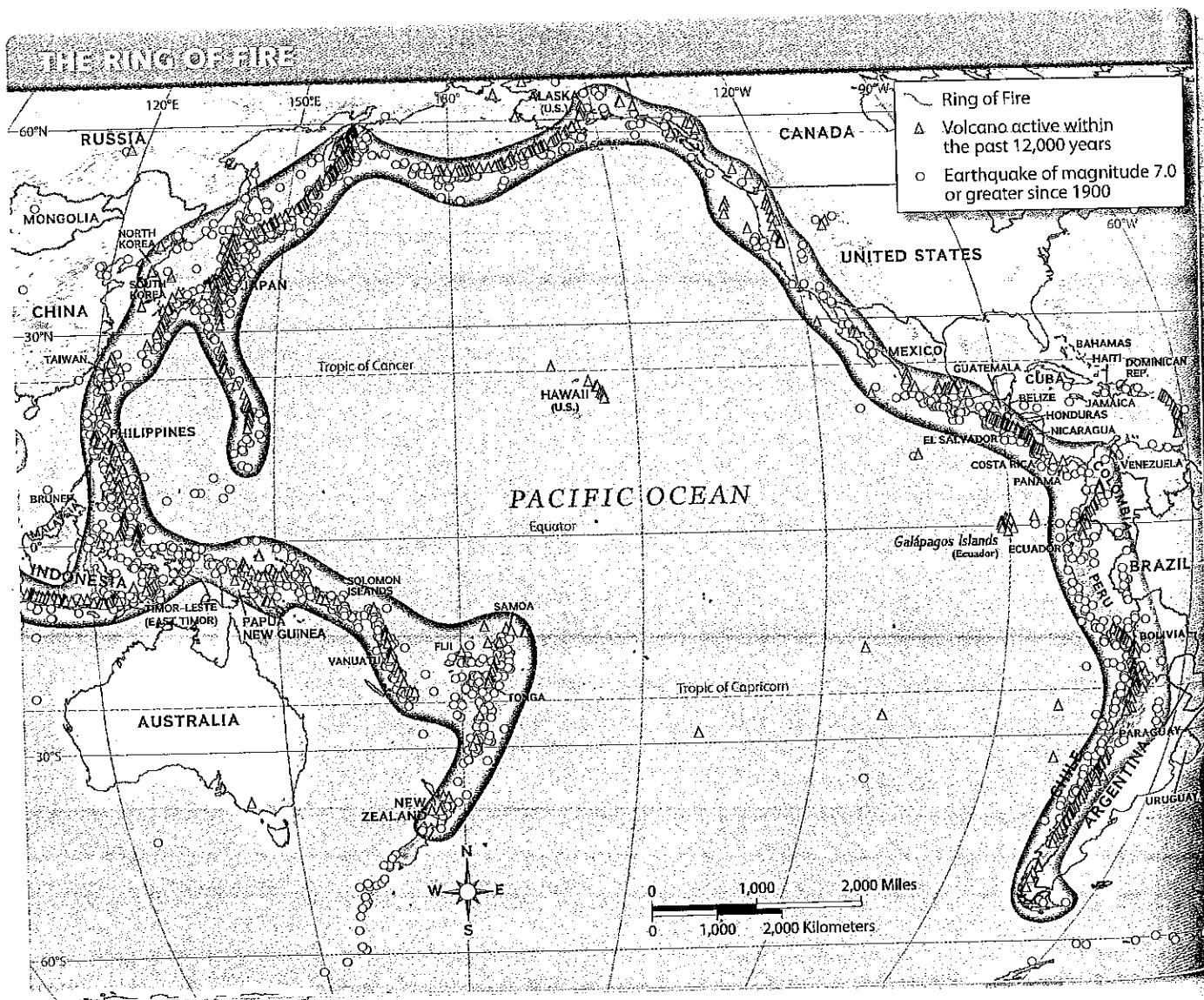
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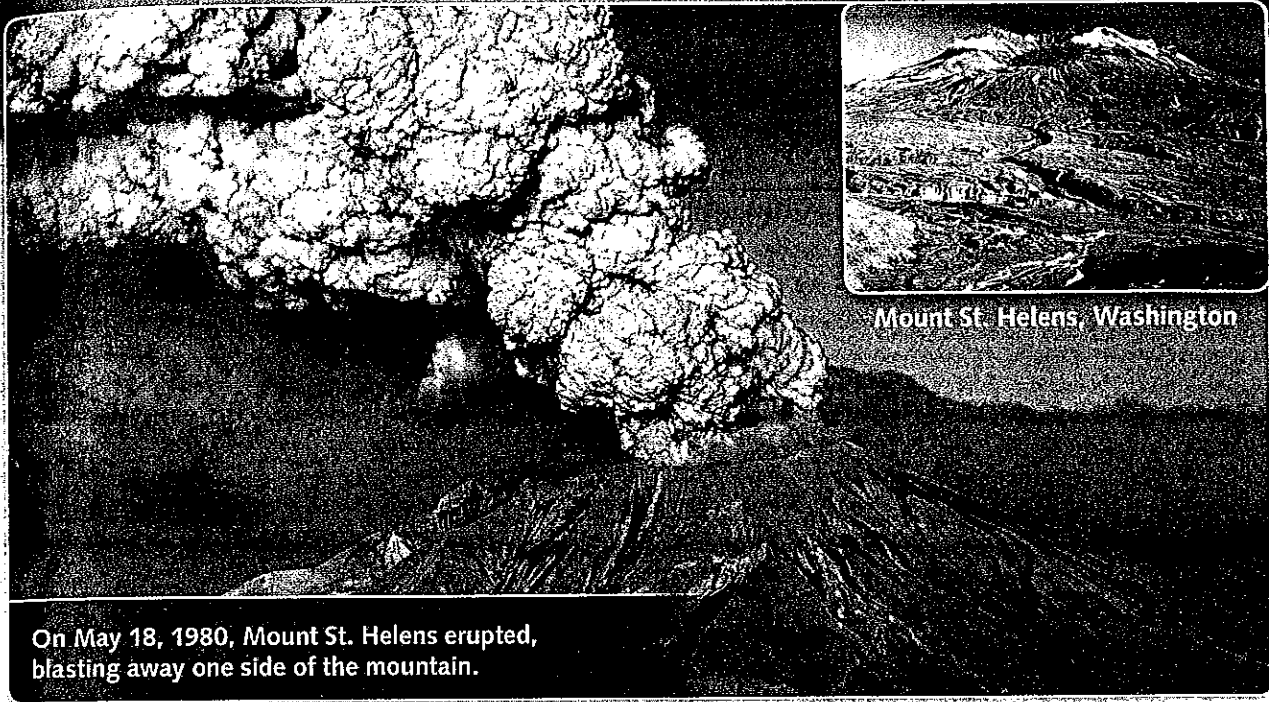
Main Idea Plate boundaries around the Pacific Ocean cause earthquakes and volcanic eruptions.

The **Ring of Fire** is a circle of volcanoes and earthquakes along the rim, or outer edge, of the Pacific Ocean. It exists because a large tectonic plate under the ocean slides against plates in Asia, Australia, South America, and North America. The movements create tremendous pressure, which causes volcanoes and earthquakes.

Earthquakes

An **earthquake** is a violent shaking of Earth's crust. Many earthquakes occur along faults, which are cracks in Earth's surface. Earthquakes are common in the Ring of Fire, but they also occur in other areas on Earth. One area runs from the land around the Mediterranean Sea through East Asia. Other earthquake zones include the middle of the Arctic Ocean and the Atlantic Ocean.





On May 18, 1980, Mount St. Helens erupted, blasting away one side of the mountain.

Earthquakes can cause buildings, bridges, and roads to collapse. For example, in 2010, an earthquake in Haiti killed more than 200,000 people. Many people who died were trapped under buildings that collapsed.

Earthquakes beneath the ocean can cause **tsunamis**, which are large, powerful ocean waves that can cause great destruction along the coast.

Volcanoes

The Ring of Fire contains more than 75 percent of the world's volcanoes. A **volcano** is a mountain that erupts in an explosion of molten rock, gases, and ash. Lava, which is molten rock, flows down the side of the mountain.

Volcanoes can cause severe damage. In 1883, Krakatoa in Indonesia spewed ash and rock fragments over an area of 300,000 square miles. It also triggered a tsunami that killed 36,000 people. Yet volcanoes can also **benefit**, or be useful to, plant and animal life. For example, mineral-rich lava turns into fertile soil.

Scientists have learned how to predict volcanic eruptions, and engineers can design buildings that survive earthquakes. As a result, more people can live safely.

Before You Move On

Monitor Comprehension What is the Ring of Fire and why is it significant?

ONGOING ASSESSMENT
WRITING LAB **Geospatial**

- 1. Make Inferences** Why do so many buildings collapse during an earthquake?
- 2. Human-Environment Interaction** How do earthquakes and volcanoes affect people? How have people tried to solve these problems? Copy and complete the chart.

DISASTER	PROBLEM	SOLUTION
earthquake		
volcano		

- 3. Write an Action Plan** Imagine that you live along the Ring of Fire. With a partner, write an outline of an action plan to help people survive a serious earthquake.