Use the Internet
Predicting Tectonic Activity

The movement of plates on Earth causes forces that build up energy in rocks. The release of this energy can produce vibrations in Earth that you know as earthquakes. Earthquakes occur every day. Many of them are too small to be felt by humans, but each event tells scientists something more about the planet. Active volcanoes can do the same, and volcanoes often form at plate boundaries.

Think about where earthquakes and volcanoes have occurred in the past. Make a hypothesis about whether the locations of earthquake epicenters and active volcanoes can be used to predict tectonically active areas.

Real-World Question
Can you predict tectonically active areas by plotting locations of earthquake epicenters and volcanic eruptions?

Goals
- **Research** the locations of earthquakes and volcanic eruptions around the world.
- **Plot** earthquake epicenters and the locations of volcanic eruptions obtained from **msscience.com** site.
- **Predict** locations that are tectonically active based on a plot of the locations of earthquake epicenters and active volcanoes.

Data Sources

Science🌀nline Visit **msscience.com/ internet_lab** for more information about earthquake and volcano sites and data from other students.

Make a Plan
1. Study the data table shown below. Use it to record your data.
2. Collect data for earthquake epicenters and volcanic eruptions for at least the past two weeks. Your data should include the longitude and latitude for each location. For help, refer to the data sources given above.

Locations of Epicenters and Eruptions		
Earthquake Epicenter/Volcanic Eruption	Longitude	Latitude

Hands-On Activities

LAB (continued)

Follow Your Plan

1. Make sure your teacher approves your plan before you start.
2. **Plot** the locations of earthquake epicenters and volcanic eruptions on a map of the world. Use an overlay of tissue paper or plastic.
3. After you have collected the necessary data, predict where the tectonically active areas on Earth are.

4. **Compare** and **contrast** the areas that you predicted to be tectonically active with the plate boundary map shown in **Figure 9** in your textbook.

Analyze Your Data

1. What areas on Earth do you predict to be the locations of tectonic activity?

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2. How close did your prediction come to the actual location of tectonically active areas?

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Conclude and Apply

1. How could you make your predictions closer to the locations of actual tectonic activity?

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2. Would data from a longer period of time help? Explain.

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3. What types of plate boundaries were close to your locations of earthquake epicenters? Volcanic eruptions?

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4. **Explain** which types of plate boundaries produce volcanic eruptions. Be specific.

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Communicating Your Data

Find this lab using the link below. Post your data in the table provided. **Compare** your data with those of other students. Combine your data with those of other students, and **plot** these combined data on map to **recognize** the relationship between plate coundaries, volcanic eruptions, and earthquake epicenters.

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