Name: _____ Date: _____ Class: _____

Title: Modeling Plate Tectonics and Volcanoes
Teacher Sheet

Explore Questions

1. What observations do you have about the location of volcanoes? ***(Accept reasonable responses.)***

2. What observations can you make about the relationship between volcanoes and plate boundaries? ***(Accept reasonable responses.)***

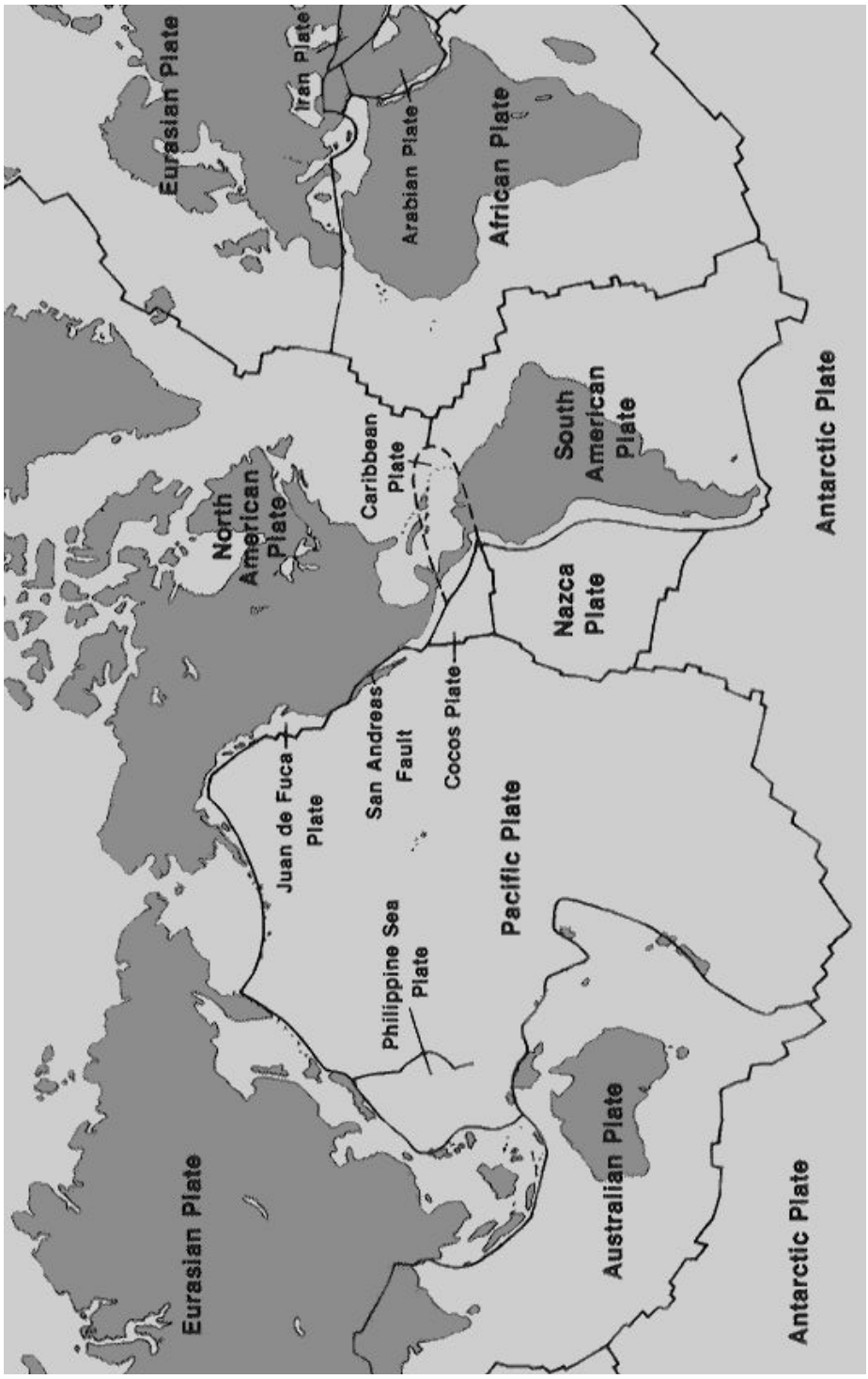

Image Credit: USGS

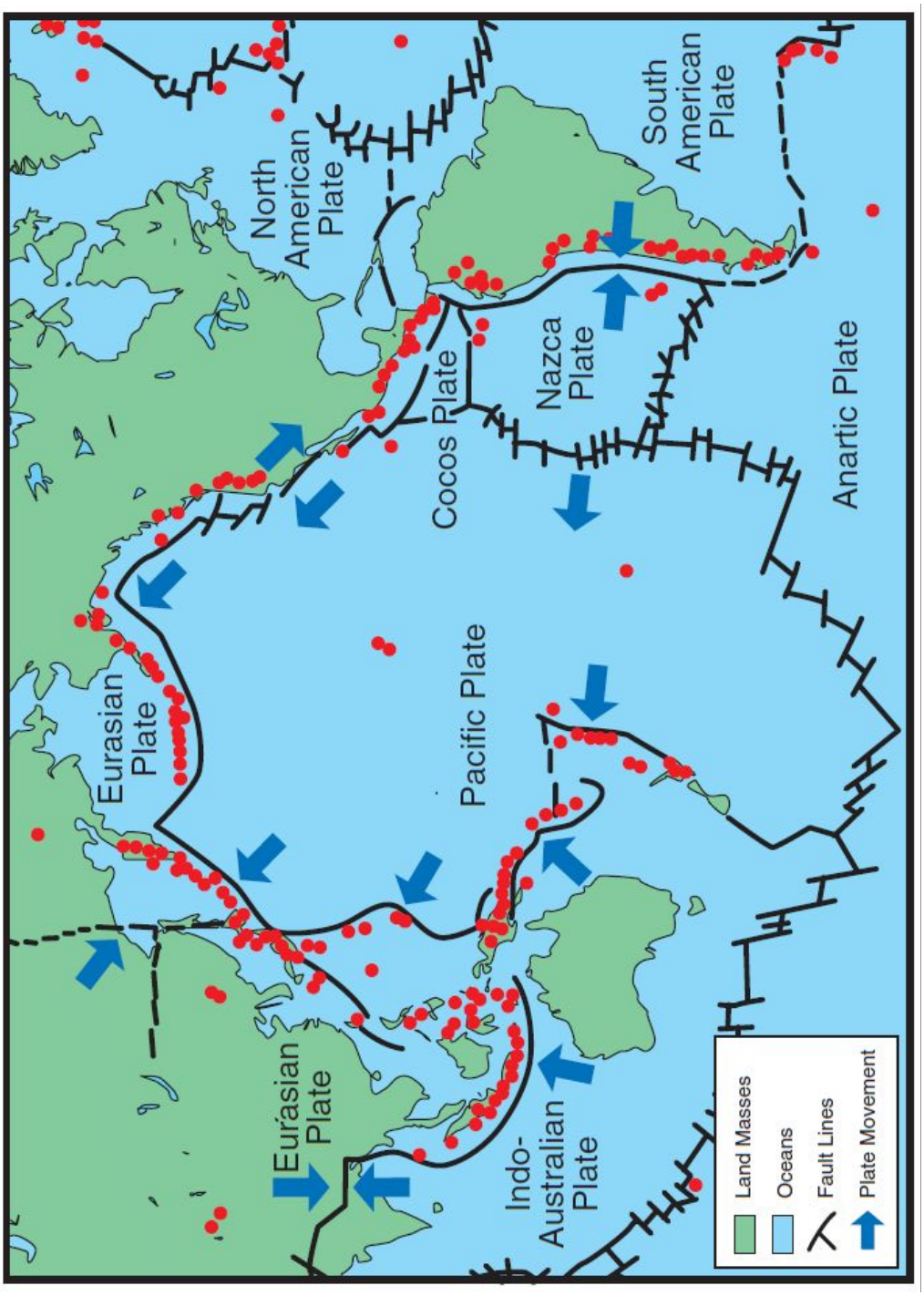

Plate Boundary Map with Locations of Volcanoes (Red Circles) - Image Credit: Astro-Venture Geology Educator Guide

Explain

1. What observations can you make about the relationship between plate boundaries and volcanoes? ***(Students should observe that most of the volcanoes are located on plate boundaries. Students should share ideas.)***
2. Why do you think most of the volcanoes occur at plate boundaries? ***(Students should respond that most volcanoes occur at plate boundaries because of the movement of the plates. Students should share ideas.)***
3. Explain where volcanoes are occurring on this map and why they are occurring at these locations in terms of plates and their movement. ***(Volcanoes occur where plates collide and where plates move apart.)***
4. Do you see volcanoes on the map that are not at plate boundaries? If so, where are these volcanoes located? ***(Yes, there are volcanoes that are not on plate boundaries. An example is the Hawaiian Islands.)***
    - These volcanoes occur in areas known as “hot spots.” A hot spot is a place where part of the mantle with a very high temperature rises through the lithosphere causing volcanic eruptions. Scientists are not sure exactly why or how this happens.
    - At the beginning of this activity, you marked on a map where you thought volcanoes occurred. Look at your hypothesis/prediction.
5. Where do volcanoes occur? ***(Have students share their answers with the class. Student answers should state that volcanoes occur where plates collide, where plates move apart, and in areas known as hot spots.)***