Integrated Science

Name_____
Hour 1 2 3 4 5 6 7 8 Date_____

Study Guide
Earthquakes and Volcanoes

Vocabulary: Know the following terms.

earthquake	P waves	pipe	shield volcanoes
seismic waves	S waves	vent	cinder cone
stress	surface waves	crater	composite volcano
fault	seismograph	caldera	
focus	volcano	silica	
epicenter	magma chamber	hot spot	

Earthquakes

- As tectonic plates move, they cause stress in the crust, which in turn produces faults and folds.
- Earthquakes occur because stress forces have exceeded the strength of the rock.
- To measure earthquakes and pinpoint their epicenters, geologists record seismic waves using seismographs.
- Most earthquakes occur along plate boundaries.

Volcanoes

- Under certain conditions, small amounts of mantle rock can melt, forming liquid magma. The magma forces its way upward through the crust, erupting at the surface as a volcano.
- Most volcanoes occur along plate boundaries.
- The three major types of volcano are shield volcanoes, cinder cones, and composite volcanoes.
- Igneous features formed by magma include batholiths, sills, dikes, and volcanic necks.

Questions

1. Differentiate between the focus and the epicenter of an earthquake.

2. Describe a fault.

3. What are P waves, S waves, and seismic waves? Describe the characteristics of each.

4. What are the different ways earthquakes can be measured? Which scale is most important to seismologists?

5. Identify the three types of volcanoes and the composition of each.

6. What determines whether an explosion will be quiet or explosive? What are the characteristics?

7. What three factors determine magma viscosity?

8. What is pyroclastic material?

9. What is the relationship between the location of earthquakes and volcanoes?

10. How does the subduction of an oceanic plate result in the formation of a volcano?