

Science: Volcanoes

Teacher: Racquel Murphy		Grade Level: 9th	Duration: 90 minutes
Standards			
CCSS: Expectations	<p>2.1 The student will identify and describe techniques used to investigate the universe and Earth.</p> <p>2.3 The student will explain how the transfer of energy and matter affect Earth systems</p>		
MSDE CLG Indicators:	<p>2.1.2 The student will describe the purpose and advantage of current tools, delivery systems and techniques used to study the atmosphere, land and water on Earth.</p> <p>2.3.1 The student will describe how energy and matter transfer affect Earth systems.</p>		
NGSS: Standards	<p>HSESS.3-1. Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.</p>		
Essential Question	What landforms do lava and ash create?		
Objective for Students	<p>Students will be able to:</p> <ul style="list-style-type: none"> ▪ Investigate the processes that build volcanoes ▪ Explain the factors that influence difference eruptions types ▪ Describe the threats volcanoes pose to their surrounding communities. 		
Engage	<p>Students will watch a 2 minutes video of a volcano erupting. Students will be asked to explain what they see and how they think it began. http://video.nationalgeographic.com/video/storm-surge?source=relatedvideo Students and teacher will have a brief discussion about what they think they would do if they lived in a place that had volcano's.</p>		
Explore	<p>Students will watch an informational video about volcanoes. Each video is broken down into sections. Students will watch: What are a Volcano, Types of volcano's, and Volcanic landforms: types and formations. Teacher will stop each video to hold class discussion to ensure students are paying attention as well as taking notes. http://study.com/academy/lesson/what-is-a-volcano-definition-eruptions.html Students will complete the vocabulary worksheet using information from the video and their textbooks.</p>		
Explain	<p>Teacher will show and explain a written power point about volcanoes' to reinforce the visual video students viewed. Teacher will review the terminology to ensure students have written the correct definitions on their vocabulary sheets. Students should be taking any notes they might have missed during the visual video. http://www.weatherwizkids.com/weather-volcano.htm</p>		
Extend	<p>Students will be given a volcano diagram to label to ensure they understand the formation of a volcano. (Diagram below) Students will answer the following questions using their knowledge from class discussion as well as their notes. Teacher will write the following questions on chart paper and place on the board. Students may work in groups of 2 to answer the question.</p> <ul style="list-style-type: none"> ▪ At what type of plate boundaries do volcanoes form? ▪ What are the two definitions for the term volcano? ▪ Write definitions in your own words for the following terms: active volcano, dormant volcano, extinct volcano ▪ What is the difference between magma and lava ▪ Name and describe the 3 ways that volcanoes form. ▪ How do hot spots volcano's form? ▪ What happens when a volcano erupts? ▪ Where are most volcano's found? 		
Evaluate	<p>Students will take a vocabulary quiz on volcanoes. See bottom of the lesson plan. (from TSS Blackboard Earth Science curriculum) Students will work in groups of 4 to simulate a volcano through the Soda Bottle Volcano experiment. http://www.weatherwizkids.com/?page_id=1763</p>		
Supplies and Technology Needed	Chart paper, notes, notebooks, 2 Liter soda bottle, mentos candy, volcano diagram, volcano vocabulary worksheet, volcano quiz, LCD projector, Internet		
Vocabulary	Volcanism, volcano, vent, lava, magma, hot spot, fissure, subduction zones, oceanic lithosphere, continental lithosphere, magma chambers		
Homework:	<p>Students are to bring in pictures of the different stages of a volcano eruption. Students should be able to explain each stage of the volcanic eruption. Students are allowed to bring in photos on their phones however the photos date stamp must be today's date. Any photos that are dated tomorrow during school hours will not be accepted.</p>		

Resources (A/V, websites, books, etc.)	http://www.darienps.org/teachers/lthilow/Level%20400%20Assignments%20and%20Exams/Volcanoes and Other%20Igneous .pdf http://www.weatherwizkids.com/?page_id=1763 , http://study.com/academy/lesson/what-is-a-volcano-definition-eruptions.html , http://video.nationalgeographic.com/video/storm-surge?source=relatedvideo , Earth/Science textbook
Differentiated Instruction	Frequent breaks, graphic organizer, guided notes, repeated directions, extra response and processing time
Reflections on this lesson	How can scientist predict volcanic eruptions and avoid hazards?

Chapter: 7-Volcanoes Vocabulary

Name: _____ **Date:** _____ **Page:** _____

Use pages: 117 – 119 to help you define the following words.

Volcanism:

Volcano:

Vent:

Lava:

Magma:

Hot spot:

Fissures:

Subduction zones:

Oceanic lithosphere:

Continental lithosphere:

Magma chamber:

Vocabulary Quiz-Volcanoes

Directions: use the words below to fill in the definitions

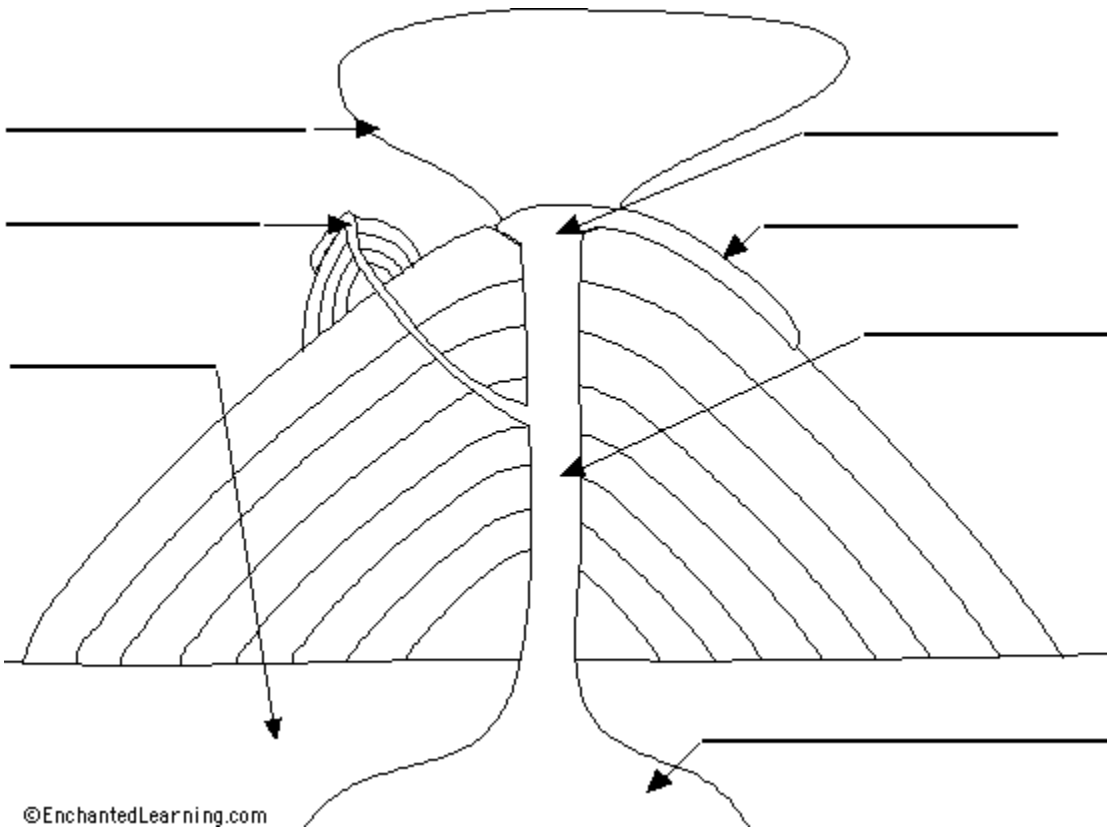
Word Bank	
Volcanism	Hot Spot
Volcano	Fissures
Vent	Subduction Zones
Lava	Oceanic Lithosphere
Magma	Continental Lithosphere
Magma Chamber	

1. When magma works its way to the Earth's surface within the interiors of the lithospheric plates and forms islands: _____
2. The structure formed by the vent and the volcanic material that builds up on Earth's surface around the vent: _____
3. Melted rock when it is INSIDE of the volcano: _____
4. The opening through which the molten rock flows onto the surface of the Earth: _____
5. When _____ is subducted beneath _____, volcanoes often form near the edge of the continent.
6. Cracks through which lava flows: _____
7. Magma that erupts onto the surface of the Earth: _____
8. Any activity that includes the movement of magma towards or onto the surface of the Earth: _____
9. When magma reaches Earth's surface but NOT along a plate boundary: _____
10. Many volcanoes occur along _____ because it is where an oceanic crust and a continental crust meet.
11. Area inside of the volcano which holds the magma until it erupts: _____

Volcanoes: Mountains of Fire

Name: _____ Date: _____ Page: _____

Use each definition below the diagram to help you label each part of a volcano.



ash cloud - an ash cloud is the cloud of ash that forms in the air after some volcanic eruptions.

conduit - a conduit is a passage through which magma (molten rock) flows in a volcano.

crust - the crust is Earth's outermost, rocky layer.

lava - lava is molten rock; it usually comes out of erupting volcanoes.

magma chamber - a magma chamber contains magma (molten rock) deep within the Earth's crust.

side vent - a side vent is a vent in the side of a volcano.

vent - a vent is an opening in the Earth's surface through which volcanic materials erupt.