

Date: \_\_\_\_\_ Names: \_\_\_\_\_

## VOLCANO TYPE AND LOCATION

**INTRODUCTION:** Why are some rocks in your yard white while some are black and white and others are blue? If rocks come from beneath the surface of the earth, do different volcanoes produce different lava?

**OBJECTIVE:** The location of a volcano tends to determine the composition of the volcanic rock resulting from the volcano. The major material present in volcanic rock is SILICA. Volcanic rock considered high in silica content (more than 66%) usually appears grey or pink and is called RHYOLITE. This type of material is usually found at convergent boundaries where some crustal material is subducted and rises to the surface. Rock that is considered to have a medium silica content (52%–66%) usually appears dark grey and is called ANDESITE. This material usually appears at subduction zones as well—without rising up toward the surface. The third type of material is low in silica content (less than 52%), appears black, and is called BASALT. This material generally is found at divergent plate boundaries or at HOT SPOTS (areas under the crust where there is a lot of activity, like the Hawaiian Islands). In this activity, we will plot the locations of the different types of volcanoes and note their relation to types of plate boundaries.

### PROCEDURE:

1. On the attached data sheet, identify each volcano as rhyolite, andesite, or basalt.
2. On the map provided, plot the different volcanoes listed on page 47.
3. Plot the volcano at the correct longitude and latitude.
4. Use the following key to code the volcanoes:
  - + = rhyolite
  - = andesite
  - ◆ = basalt

### QUESTIONS:

1. Along what outline do the volcanoes fall? \_\_\_\_\_
2. Are all volcanoes located along this outline? Where are the others? \_\_\_\_\_
3. What is an area, such as that where the stray volcanoes are located, called? \_\_\_\_\_
4. Which type of volcanic material appears:
 

a. black?	_____
b. dark grey?	_____
c. grey, pink?	_____
5. At what type of plate boundaries do the following volcanic materials appear:
 

a. rhyolite?	_____	b. andesite?	_____
c. basalt?	_____		

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Volcano Location	Latitude	Longitude	% Composition			Rock Type
			silica	aluminum	iron	
1. Lassen, CA	40 N	121 W	57.3	18.3	6.2	_____
2. Crater Lake, OR	43 N	122 W	55.1	18.0	7.1	_____
3. Mt. Rainier, WA	47 N	122 W	62.2	17.1	5.1	_____
4. Mt. Baker, WA	49 N	122 W	57.4	16.6	8.1	_____
5. Yellowstone, WY	45 N	111 W	75.5	13.3	1.9	_____
6. Craters of the Moon, ID	43 N	114 W	53.5	14.0	15.2	_____
7. San Francisco Peaks, AZ	35 N	112 W	61.2	17.0	5.7	_____
8. Parícutín, Mexico	19 N	102 W	55.1	19.0	7.3	_____
9. Popocatepetl, Mexico	19 N	98 W	62.5	16.6	4.9	_____
10. Mt. Pelée, Martinique	15 N	61 W	65.0	17.8	4.5	_____
11. Santa María, Guatemala	15 N	92 W	59.4	19.9	5.9	_____
12. Mt. Misery, St. Kitts	17 N	63 W	59.8	18.3	7.3	_____
13. Cotopaxi, Ecuador	1 S	78 W	56.2	15.3	9.7	_____
14. El Misti, Peru	16 S	71 W	60.1	19.0	5.0	_____
15. Katmai, AK	58 N	155 W	76.9	12.2	1.4	_____
16. Adak, Aleutians	52 N	177 W	60.0	17.0	6.9	_____
17. Umnak Islands, Aleutians	53 N	169 W	52.5	15.1	12.8	_____
18. Kamchatka, Russia	57 N	160 E	60.6	16.4	7.9	_____
19. Fuji, Honshu, Japan	35 N	139 E	49.8	20.6	11.2	_____
20. Izu-Hakone, Honshu, Japan	35 N	139 E	53.8	14.8	13.0	_____
21. Mayon, Philippines	13 N	124 E	53.1	20.0	8.2	_____
22. Krakatau, Indonesia	6 S	105 E	67.3	15.6	4.3	_____
23. Karkar, New Guinea	5 S	146 E	60.1	16.4	9.6	_____
24. Mauna Loa, HI	19 N	156 W	49.6	13.2	11.9	_____
25. Galápagos Islands	1 S	91 W	48.4	15.4	11.8	_____
26. Mariana Islands	16 N	145 E	51.2	17.3	10.9	_____
27. Auckland, New Zealand	38 S	176 E	49.3	15.6	11.9	_____
28. Tahiti	18 S	149 W	44.3	14.3	12.4	_____
29. Samoa	13 S	172 W	48.4	13.3	12.3	_____
30. Surtsey, Iceland	63 N	20 W	50.8	13.6	12.5	_____
31. Mid-ocean Ridge	60 N	18 W	48.2	16.5	11.7	_____
32. Kilimanjaro, Tanzania	3 S	37 E	45.6	10.3	12.6	_____

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**WORLD MAP**

