

☐ Activity 2: A Closer Look at Igneous Rocks

Most of the rocks on the Earth's crust are igneous rocks. Scientists can use a rock's color to help determine which minerals are in the rock. Scientists also look at the rock's texture, which helps indicate where the rock cooled. Rocks made from magma that comes from land areas are 60% silica, but those made from magma that comes from ocean areas have closer to 45% silica.

Gather the igneous rocks from your Rock Science Kit, the booklet and magnifying glass that came with the kit, and the "Igneous Rock Observations" pages. Follow the instructions on the two pages. In addition to using the scientific classifications for texture and color, feel free to add your own descriptions of how the rocks feel and what color they are.

When you are done, search online if you'd like to learn more about any of your igneous rocks.

Igneous Rocks

www.movingbeyondthepage.com/link/9600/

This page contains information about the igneous rocks in your kit.

IGNEOUS ROCK OBSERVATIONS

Directions: Write the name of each igneous rock from your kit in the chart below. Use the information on the next page to help you complete the chart.

Igneous Rock 1 Igneous Rock 2 Igneous Rock 3 Igneous Rock 4 Igneous Rock 5

Name:	Name:	Name:	Name:	Name:
Texture:	Texture:	Texture:	Texture:	Texture:
Where Cooled (circle one): below the Earth's surface (intrusive) at the Earth's surface (extrusive)	Where Cooled (circle one): below the Earth's surface (intrusive) at the Earth's surface (extrusive)	Where Cooled (circle one): below the Earth's surface (intrusive) at the Earth's surface (extrusive)	Where Cooled (circle one): below the Earth's surface (intrusive) at the Earth's surface (extrusive)	Where Cooled (circle one): below the Earth's surface (intrusive) at the Earth's surface (extrusive)
Color(s):	Color(s):	Color(s):	Color(s):	Color(s):
Magma Formed in (circle one): ocean areas land areas	Magma Formed in (circle one): ocean areas land areas	Magma Formed in (circle one): ocean areas land areas	Magma Formed in (circle one): ocean areas land areas	Magma Formed in (circle one): ocean areas land areas

1 Igneous Rock Textures	Feel each rock and then use the magnifying glass to study the texture or surface of the rocks. Scientists classify igneous rock textures as the following:	
Phaneritic has large crystals that can be seen without a microscope	2 Where Igneous Rocks Cool	
Vesicular bubbly from gas pockets in the rock		
Glassy smooth like glass		
Aphanitic has crystals too small to see without a microscope		
Fragmental made up of chunks of different rocks with different textures	3 Igneous Rock Colors	
Porphyritic has two or more distinctively different crystal sizes		
Below the Earth's surface (intrusive)	4 Types of Magma in Igneous Rocks	The list of textures explains where rocks of each type of texture usually cool. This list is not always correct but explains where most rocks with that texture cool down.
	Obsidian is an exception: it is a dark volcanic glass that is felsic with lots of silica	The color of an igneous rock can tell you what minerals are probably in it, just like the color of your chocolate "rocks" reflect the colors of the chips that went into them.
		Ocean produces mafic and intermediate rocks
		Land produces felsic rocks

Lesson 3: Igneous Rocks and Volcanoes (2 Days)

Activity 2: A Closer Look at Igneous Rocks

Your child will examine the igneous rocks from his Rock Science Kit. He will use scientific terms to categorize his igneous rocks to determine their minerals, their texture, and where they formed. He can also include his own descriptions of the rocks' texture and color. Some answers may vary from the answer key depending on the texture and color of the specific specimens in your child's kit. You may want to point out to your child that scoria is extrusive even though it has a rough texture.

Answer Key:

- obsidian: glassy, smooth; extrusive; obsidian, black; land
- granite: phaneritic, coarse with large crystals; intrusive; felsic, ivory or grey; land
- basalt: aphanitic (or porphyritic), fine-grained; extrusive; mafic or intermediate, dark brown or grey or a mixture of colors; ocean
- scoria: vesicular, bubbly; extrusive; mafic or intermediate, dark brown; ocean
- rhyolite: porphyritic (or aphanitic), mixture of textures or fine-grained; extrusive; felsic, ivory or light grey; land