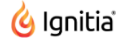


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Course Information
Course: Science 03 2021
Unit: 8. ROCKS AND THEIR CHANGE
Assignment: 2. Rocks Formed by Volcanoes



ROCKS FORMED BY VOLCANOES

When magma flows out of a volcano, it is called lava. Most magma, though, does not reach the earth's surface. It cools and hardens very slowly below the surface and forms igneous rock.

Here are your goals for this lesson:

- Describe igneous rocks are formed
- Give examples of past volcanic eruptions

VOCABULARY

▶ basalt	Hard rock left by a volcano.
▶ erupt	Burst forth.
▶ lava	Melted rock flowing from a volcano.
▶ volcano	An opening in the earth through which steam and lava pour.



"The rock that Rick found lying on the ground was once hot magma. This magma was moving around under the crust of earth. When there was a crack in the crust, the magma moved in to fill it. Then the magma began to cool and harden. As it cooled, the rocks around it and above it were pushing against it.

It was being squeezed tighter and tighter together. After many years the hot magma became cooler and cooler. The pressure of the rocks made it harder and harder. The hot magma had become granite rock. Rocks made from magma are called igneous rocks."

"Does magma always cool under the ground?" Jack wanted to know.

"No," Father answered. "Sometimes when the magma is mixed with gas and is under a lot of pressure, it comes up fast and bursts out of the earth. When it reaches the earth's surface, the magma flows over the ground and is called lava. It cools and becomes rock faster than when it was under the surface.

"Oh, we've seen lava haven't we, Debbie?" Jack exclaimed. "Remember when Mom and Dad took us to Hawaii? We went to see the volcano called Mauna Loa on the Big Island."

"Yes," Debbie replied, "I remember. The whole island was covered with lava rock. Dad told us that red hot lava had shot out of the volcano and had flowed down the mountain toward the ocean."

"Several years ago when I was in the army, some of us went to see a volcano while it was erupting," Father said. "The magma from under the earth's crust shot out the top of the mountain and began flowing toward a little village near the

coast. People were running everywhere. Magma hardens more quickly into lava than it does underground into granite. It takes a long, long time to harden into granite underground, but magma hardens into lava in a few years. The lava forms a rock called *basalt*. I will show you a piece of *basalt* I brought back from that village. You will see many spaces and holes the bubbles of gas made as the magma cooled. They still show."

"Did the lava reach the village?" Debbie asked.

"No, not that time," Father said. "But years later that volcano erupted again and killed every living thing around. Most of the people were able to get away before the flow reached them, though. They had to move really fast."

"Let me tell you about another volcanic eruption. This one happened in Washington state," Father remarked. "The Mt. St. Helens volcano erupted on May 18, 1980." "How big was that one?" asked Debbie. Father continued, "On May 18, 1980, at about 8:30 in the morning, an earthquake shook Mount St. Helens, which caused a major eruption of the volcano. If you watch the short videos below, you can see the mountain just before the eruption, and then the eruption with ash being blown into the air." "Wow, those are neat videos. How high was the ash column?" Jack wanted to know. Dad replied, "The column went up 80,000 feet. That's over 15 miles. Thirteen-hundred feet of the peak of the mountain either collapsed or blew outward. That's a lot of rock to throw into the air. Just imagine the power behind a volcanic eruption."



"It would be fun to watch a volcano erupt," said Mary.

"Yes, if you could stay away from the lava flow, and the flying boulders," they all added.

"Let's look for more rocks before we leave," Father said, "and we can try to figure out what types of rock they are as we head for home."

Question #1 Matching

Show Answer

Match the following vocabulary words with their definitions.

1. Burst forth.	<input type="checkbox"/> basalt
2. An opening in the earth through which steam and lava pour.	<input type="checkbox"/> erupt
3. Melted rock flowing from a volcano.	<input type="checkbox"/> volcano
4. Hard rock left by a volcano.	<input type="checkbox"/> lava

Question #2 MultipleChoice

Show Answer

When lava flows from a volcano, it is a very hot:

rock

liquid

granite

Question #3 FillInBlank

Show Answer

Complete the sentence. Remember to spell correctly.

Mauna Loa is a ^o on the Big Island of Hawaii.

Question #4 MultipleChoice

Show Answer

The hot liquid that forms both granite and lava is called:

- basalt
- magma
- mantle

Question #5 MultipleChoice

Show Answer

The magma that flows from volcanoes sometimes forms a rock called:

- mantle
- basalt
- quartz

Question #6 MultipleChoice

Show Answer

Erupt means to:

- cool down
- heat up
- blow up

Question #7 MultipleChoice

Show Answer

Magma that flows from a volcano is called:

- lava
- mantle
- basalt

Question #8 MultipleSelect

Show Answer

What two forces help form granite?

- heat
- cold
- feldspar
- pressure

Question #9 TrueFalse

Show Answer

Heat and pressure help form granite.

- True
- False

Question #10 TrueFalse

Show Answer

The center of the earth is very hot.

- True
- False

Question #11 TrueFalse

Show Answer

The center of the earth is called the crust.

- True
- False

Question #12 TrueFalse

Show Answer

Soil is mostly rock and water.

... ..

True

False

Question #13 TrueFalse

Show Answer

Granite comes from hot magma which has cooled.

True

False

Question #14 TrueFalse

Show Answer

Magma cools immediately when it reaches earth's surface.

True

False

Question #15 TrueFalse

Show Answer

The core of the earth is larger than the moon.

True

False

Question #16 TrueFalse

Show Answer

Granite is called igneous rock.

True

False

Question #17 TrueFalse

Show Answer

The soil is part of the earth's mantle.

True

False

