

Lesson 1: What is a Vesicular Basalt Rock?

* PRE-LESSON Ask parents or community members if you can visit their steam-bath to talk about the types of rocks used in the steam-bath and how they work. Ask parents to bring in a rock used in the steam-bath too

Objectives:

Students learn the properties of a vesicular basalt rock and how one is formed.



Essential Questions:

What is a vesicular basalt rock? How is one formed?

Alaska Native Values:

Learning by doing, observing and listening

Standards:

M6. Sorts and groups objects.

SSC1. Draws and constructs.

SSC3. Asks questions and finds answers through active exploration of nature.

SSC 3. Describes changes in, makes predictions about, & describes relationships between living & non-living objects & natural events.

Promoting Culture Self Assessment:

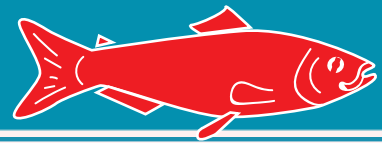
I encourage and provide opportunities and experiences for children that support Alaska Native culture.

I ensure that toys and play accessories that depict people are representative of the various cultural and ethnic groups both within my community and the society in general.

I encourage and invite parents and community members to volunteer and assist with Alaska Native language and cultural activities.

Whole Group	Community Connections	Science Walk: Observing Natural Steam
Materials: Volcano Kit Vesicular Basalt Rocks River rock Baking powder Vinegar	Materials: Camera	Materials: Camera Thermometer
Activity: See lesson below.	Activity: Take a trip to visit a steam-bath. Show students where rocks are placed to hold in heat. Ask questions: “Where does the water go? Where does the heat go? Which is the hottest place to sit in a steam-bath” (top or bottom?) Take note of any plants/animal parts used in steam-bath (alders, tied wormwood, tied feathers)	Activity: During the time of ‘freeze-up’ take students to an area of water in your community (lake, river or bay). Have students observe the ice fog rising from the water. This is caused when the air temperature is colder than the water temperature. Take the outside temperature as well as the water temperature. Use your hundreds chart to compare numbers.

Activity



Engage: Whole Group Activity:

Set up your volcano kit. Explain to students *“Do you know what this is? That’s right, it’s a volcano. Many of the rocks we find are all just types of rocks created by a volcano. Inside the volcano is a hot liquid called magma. Sometimes the magma can come out slow from a volcano and sometimes it can come out really quick, like an explosion! Here I have baking soday and vinegar. Were going to pretend that this baking soda is magma.”* Pour in vinegar quick to watch the ‘magma’ flow out quickly. Try the experiment again. This time add baking soda into the volcano cavity and pour vinegar in slowly down the chamber. Watch the ‘magma’ come out slowly. Discuss the difference in reactions. Allow students to help with the adding different amounts of ingredients.

Explore:

Prepare a T-Chart on the board or a large sheet of paper. Label one side “Vesicular Basalt Rock” and one side “River Rocks”, with a picture of each. “We are going to make some observations and comparisions?” Pass around the vesicular basalt rocks (irregular shape with holes) for students to feel and make observations. Ask questions to prompt, *“What does the rock feel like? What does it look like? Is it heavy or light? Where have you seen a rock like this before?”* Write their observations on the chart. Next, pass around the smooth black rocks provided in kit. Allow time for the students feel and make observations. Again prompt students with questions and write them down on the opposite side of the chart. Have students draw a picture of each rock showing their observations.

Explain: Talking, Niugtuk, Qalarte, Qenax

“Many times throughout the rocks ‘life’ things happen to it where it changes what it originally looked like. These two rocks that we have were formed from the volcano but the way they came out of the volcano was very different. This smooth rock was formed from magma that came out from the volcano very slowly. It eventually rolled into a river or lake where over time water rolled it around and made it nice and smooth. This rough rock came shooting out of the volcano and cooled off very fast. This was also worn down by water and made round but because it came out so quickly it will always be a little rough. A vesicular basalt rock is a dark-colored volcanic rock that contains many holes or pits called vesicles. The vesicle in the rock was made by the expansion of a bubble of gas that was trapped inside the lava. When the volcano that this rock came from erupted it shot out hot magma that had gases in it and the magma cooled off really quickly forming this rock that has holes in it and is very light weight. These rocks are often used in steam-baths because they are perfect for heating up. The holes make the rocks light and allow them to trap in heat.”

Evaluation

Emerging: Students did not participate.	Developing: Student drew one rock but not the other.	Proficient: Student drew both of the rocks showing their observations of each rock.	Advanced: Students drew both rocks and was able to tell why they look different.
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