

# Lesson 2: What is Steam?

\* PRE-LESSON Ask parents/guardians of students to bring in a rock from their steam-bath. Ask families to describe where they found it?

## Objectives:

Students learn how steam is formed.

## Essential Questions:

What is steam? Where do we see steam? What do we need to make steam?

## Alaska Native Values:

See Connections: All things are related.  
Practice of native traditions  
Learn by doing, observing and listening

## Standards:

L14. Recalls people, places, objects and experiences and makes connections.  
M3. Describes and compares measurable attributes.  
M4. Counts orally, counts objects, and names numerals.



## Promoting Culture Self Assessment:

- I encourage and provide opportunities and experiences for children that support Alaska Native culture.
- I encourage and invite parents and community members to volunteer and assist with Alaska Native language and cultural activities.

Whole Group	Outside Connections:	Math Center: Taking Temperatures
<b>Materials:</b> Kitchen access or hot plate Vesicular basalt rocks Pot for heating rocks Water in a cup Gloves or tongs Thermometers (indoor & water) 100s chart	<b>Materials:</b> Camera Thermometer	<b>Materials:</b> Thermometer Bowl of warm water Bowl of ice water Pencil and paper
<b>Activity:</b> See lesson below.	<b>Activity:</b> During 'freeze-up' take students outdoors to observe steam rising from the water. This is called, 'Ice fog' This is caused because the outdoor temperature is colder than the water temperature. Take the outdoor temperature and the temperature of the water and compare.	<b>Activity:</b> Help students to take temperatures of warm water, ice water and body temperature. Have students draw a picture of each object and record temperatures (help as needed). Ask questions like, "which object was hotter, which was colder?"

# Activity



## Engage: Whole Group Activity:

Ask students, "How can we tell if something is hot? Or cold?" Listen to answers "Right now our class thermometer is reading the room temperature at 68 degrees Fahrenheit. Feel this rock, it is at room temperature, meaning that its temperature is the same as the room." Circle where 68 is on the hundreds chart. "When we heat up this rock do you think the temperature will go up or down?"



## Explore:

Hold rock over a bowl. Ask "What do you think will happen if we pour water over this rock?" Pour and discuss the reaction with students. Ask: "What do you think will happen if the rock's temperature were to change?" Heat up rock on hot plate or on the stove. Add a small amount of water, just enough to cover the bottom of the pan. As rock is heating ask students, "What are some things that we can take temperatures of?" Generate a list of ideas and write on the board. When rock has heated up turn off hot plate and take the temperature of the water inside the hotplate. Discuss the difference in temperature. Record the temperature and circle it on the hundreds chart showing students that the rock now is hotter than the room temperature which is still 68 degrees Fahrenheit. Now, take a cup of water and pour over the rock. Observe what happens. (Steam should rise from the rock) Allow students to practice pouring water to make steam.



## Explain: Talking, Niugtuk, Qalarte, Qenax

"Water is like a super hero that can change forms. Water can turn into three different things depending on the temperature. Water can just be a liquid like what we drink if it's temperature is above 32 degrees Fahrenheit, or if the temperature drops below 32 degrees water can change into a solid like ice. Water can be a gas, like steam. Steam is water in a gas form. When water comes into contact with the hot rocks it quickly vaporizes creating 'steam'. The steam formed in a steam-bath is water vapor all around and it is what we can use to wash and clean ourselves."

Have students draw a picture of what happened when water came into contact with the hot rock.

# Evaluation

### Emerging:

Students did not participate.

### Developing:

Student watched demonstration but did not give any observations.

### Proficient:

Student was able to give observations of what happened when water came into contact with the rock.

### Advanced:

Student was able to verbalize observations as well as drawing a picture of what happened when water came into contact with the rock.