



artsNOW

Integrated learning solutions

ACTING HOT AND COLD Grade Band: 2-3 Content Focus: Theatre & Science



LEARNING DESCRIPTION

In this lesson, students will explore heating and cooling through pantomime and improvisation. By enacting the effect of sunlight on a snowman and growing seed, students will learn scientific information kinesthetically.

LEARNING TARGETS

Essential Questions	"I Can" Statements
What are the effects of the sun on the earth?	I can demonstrate my understanding of the effects of the sun through improvisation and pantomime.

GEORGIA STANDARDS

Curriculum Standards	Arts Standards
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Grade 3:
S3P1. Obtain, evaluate, and communicate information about the ways heat energy is transferred and measured.

Grade 3:
TAES3.3: Acting by developing, communicating, and sustaining roles within a variety of situations and environments.

SOUTH CAROLINA STANDARDS

Curriculum Standards	Arts Standards
<p>Grade 2: 2-PS1-4. Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.</p>	<p>Anchor Standard 3: I can act in improvised scenes and written scripts.</p> <p>Anchor Standard 8: I can relate theatre to other content areas, arts disciplines, and careers.</p>

KEY VOCABULARY

Content Vocabulary	Arts Vocabulary
<ul style="list-style-type: none"> • <u>Heat energy</u> - The form of energy that is transferred between systems or objects with different temperatures • <u>Physical change</u> - A change in the form or physical properties of a substance without any change in its chemical composition; the molecules themselves are not changed, only the arrangement or state of the molecules 	<ul style="list-style-type: none"> • <u>Pantomime</u> - Conveying a story by body movements or facial expressions only • <u>Improvisation</u> - A creation that is spoken or written without prior preparation

MATERIALS

- Optional background music to set the tone

INSTRUCTIONAL DESIGN

Opening/Activating Strategy

- Play “Stop, Go”.
- Tell students to stand up at their tables or desks.
- When the teacher says, “Go” and another word or phrase, students should act like that word or phrase.
 - Say, “Go – cold. Go – hot. Go – in a desert. Go – in Alaska. Go – in the snow. Go – in the rain”.
 - Have students return to their seats.



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- Ask students to share how they moved in different ways to represent feeling cold or hot. Ask them why.
- Ask them what made things go from cold to hot (location, precipitation, etc.) What makes things hot?
- Ask students:
 - What makes the air hot? Why does the air get cold? If you place an ice cube on concrete in the sun on a summer day, why does it melt?

Work Session

- Tell students that they will be acting out scenarios that demonstrate the effects that the sun has on the earth.
 - Discuss heat energy with students and why some changes caused by heating or cooling can be reversed and some cannot.
 - Discuss improvisation and pantomime with students.
- Play “The Snowman”.
 - Ask how many students have ever seen a snowman melt when the weather suddenly turns warmer. Show students an image.
 - Ask students to describe what happens to the snowman.
 - Does it change its shape? How? Is this a change that can be reversed by heating or cooling?
 - Ask the students to imagine themselves as snowmen with a hat on their heads, sticks for arms, and a cane in their hand. Ask students to pose as the snowman and freeze in that position.
 - Tell students that you will narrate a scenario to them and that they should act out the scenario. Say to students:
 - “The sun begins to shine, and for the first time, your body feels warm. You grow warmer and warmer, and your hat slips, slides and falls off. Now you feel the sun shining on your shoulders. Your arms are melting. Your cane slips from your hand and falls to the ground. Your body no longer holds you up, and you, too, begin to slump. Finally, you are completely melted and become a puddle.”
 - Question the players:
 - What did it feel like when the sun began to shine on your head? Your shoulders?
 - Your legs and body?
 - How did your body feel when you became a puddle?
 - What happens to the water after a snowstorm, when all the snow melts?
 - Is this a change that can be reversed by heating or cooling?
- Play “Apple Seed” Pantomime. (*Teacher note: Be sure to narrate this story slowly enough, and with appropriate pauses, so that the students are able to fully experience each phase as they enact the story.*)
 - Tell students to find their own personal space on the floor and make themselves as small as possible. Again, you will narrate a scenario to them. They should enact the scenario as you narrate.
 - Tell students,



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- “You are an apple seed, crammed tightly into your hard seed pod and buried under the cold ground. It is winter and you are barely awake. Above you, snow covers the ground. It is totally dark under the ground.

Now it is spring. The earth around you is growing a little warmer, and you start to feel more awake. The snow above you melts and the water soaks into the earth around you. The earth feels warmer, and you seem to be able to pull energy out of the soil. It is time to come out of your seed pod. You feel strong and energetic. Using all your strength, you push up against your seed pod and break through, like a bird breaks out of the egg. You reach upwards into the warm earth with your tendrils. The earth around you is moist, and you soak in the life-giving moisture. You don't know why, but you know you want to push upwards. Finally, with one great push, you emerge from the soil and see, for the first time, the SUN! The sun's energy flows into you and you feel stronger and stronger. You stretch upwards and outwards until you are a healthy seedling. The gentle spring rains nourish and refresh you. Just take a moment to enjoy it.

Now let's move ahead a few years. You have grown into a strong young sapling—a tree about the size of a young person. You have beautiful green leaves that soak up the sun and make you strong. But you want to grow taller. You want to be a tree. So you summon all your energy and you push out and up. As the years go by you become a strong, tall apple tree. You stand proud in the sun and enjoy your own strength and beauty.

Now it is fall. You have grown healthy, nourishing apples all over your strong branches. The apples contain seeds which might someday become new apple trees. The apples are heavy. Your branches are strong, but there are so many apples. You feel weighed down. You feel as if your branches might break. Here come some children. You can't talk to them, but you know they are coming for the apples. They have baskets. They are laughing and singing. The children pick your apples, and your branches feel light. You know they will take them away and eat them. You know they will throw away the seeds, and that some of those seeds might grow to be new apple trees. Almost all of your apples are gone. But you know you will grow more next year. You feel grateful to those children. You hope they will enjoy the apples.

Now it is winter. All of your leaves have fallen. But you know you will grow more next spring. Now it is time to rest. You rest. The End.

- Discuss how the sun made the apple grow. Ask students:
 - What happens in winter?
 - Why does the tree lose its leaves?
 - What if the seed had been dropped in a shady spot where there was very little sun? Ask students to show you what this would look like.
 - What if the seed had been dropped in Alaska? Ask students to show you what this would look like.



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- What if the seed had been dropped in the ocean? Ask students to show you what this would look like. Emphasis that the seeds need the sun in order to grow.
- What if no seeds ever grew? What would happen? Ask students to imagine a world where there is nothing growing.

Closing/Reflection

- Ask students to reflect on the role that heat energy played in each scenario.
- Reflect on how the sun provides all heat and energy for the world.

ASSESSMENTS

Formative

The teacher will assess students' learning by observing students' responses to class discussion and observing participation in acting out the scenarios. Teachers will observe which students seem to understand the concepts versus which students are simply following the actions of other students.

Summative

CHECKLIST

- Students can demonstrate their understanding of the effects of the sun through pantomime and improvisation.
- Students can explain the effects that the sun has on various scenarios.

DIFFERENTIATION

Acceleration:

- Have students illustrate one of the scenarios and explain the effects of heat energy in the scenario.
- Have students create their own scenario that demonstrates the effects of heat energy.

Remediation:

- Chunk the scenarios. Pause and comment on how students are demonstrating each phase of the scenario to help students who are struggling.

ADDITIONAL RESOURCES

NA

**This integrated lesson provides differentiated ideas and activities for educators that are aligned to a sampling of standards. Standards referenced at the time of publishing may differ based on each state's adoption of new standards.*



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Ideas contributed by: Mary Gagliardi

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10 Glenlake Parkway, Suite 130, Atlanta, GA 30328
www.artsnowlearning.org