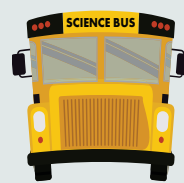
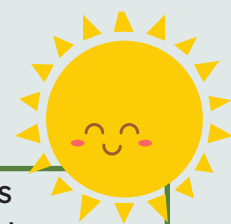


Water Art



VIRTUAL Field Trip

to the California Science Center



Focus

Question:

What happens when the sun shines on an object?

OBJECTIVE:

Students will use water, the sun and different surfaces to carry out their own investigations to explain what they think happens when the sun shines on a surface.

Buzzword:

Warmer

NGSS

Standards

Performance

Expectation: K-PS3-1

SEP: Planning and Carrying Out an Investigation

CCC: Cause and Effect

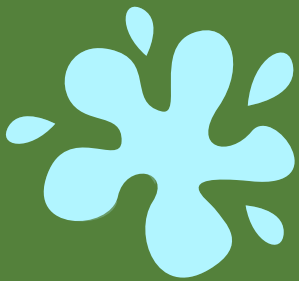
MODIFICATIONS

- **Alternate painting tools:** Any size paint brush, rag, sponge, or any tool that can brush or drip water.
- Students may paint on any hard outdoor surface such as: concrete ground, blacktop, a cinderblock wall, or a wooden fence.
- This experiment works best on a sunny day. If students are unable to conduct the experiment outdoors, recreate it inside by having students paint with water on a sheet of paper placed on a sunny surface by a window.
- This experiment can be done in one sitting or students can make multiple observations over the course of a single day or multiple days.



FACILITATING THE EXPERIMENT

Instruct students not to use too much water. They will see results faster if they create “streaks” with their brush rather than puddles.



Students are asked to feel the surface on which they are painting to determine its relative temperature. Be sure that the surface you are testing on is not so hot as to be a danger to touch.

- 1. Before Students Start the Experiment:** Read the situation together with the students and lead a discussion to help them share their hypotheses.
- 2. Set Up the Experiment:** Choose a sunny day to carry out the experiment with students (or see modifications). Prepare a small container of water and painting tool for each student or group.
- 3. During the Experiment:** Students may work alone, in pairs or in groups. It will be easiest for them to observe results if they work on a hard, sunny surface such as concrete or asphalt. Encourage students to create and compare multiple water art paintings over the course of 5-15 minutes. Allow students some freedom to experiment with different surfaces or painting methods. As they paint, circulate asking students to share their observations: How does the ground feel where you are painting? Do you notice any changes in your water art? How can you make your experiment more like the story?
- 4. Wrap Up:** Allow students to share their observations. Guide them toward constructing an explanation of why the water disappeared using the “What’s Going On?” questions.

WHAT’S GOING ON?



- 1. What happened to your water art over time?** “At first, I saw my art on the ground. Later, I saw only half of my painting was there.” Students may say that the water dried, was “soaked up”, or went away. Note: The temperature outside, and the type of surface that students paint on, will affect how quickly the water disappears (dries).
- 2. Why do you think the water disappeared?** “I think the water art disappeared because the sun made the ground warmer.” Help students to make a connection between the cause (the sun shining) and the effect (the warm ground drying the artwork). When the sun shines on the ground, it makes the ground warmer, and we see the water dry up. (Students do not need to understand evaporation or where the water goes when it dries). If students do not connect the water drying to the warmth of the ground, it may help to compare water art made in the shade or on a cool surface to water art made in the sun using the activity extension.



Additional Resources



Share your students' experiments with us on social media for a chance to be featured!



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Visit the California Science Center virtually or in person to explore this standard and extend the activity with related content.

- **Watch a free Virtual Field Trip video episode:** Join our educators to figure out what's causing different temperatures around the California Science Center.
- **Reserve a live interactive Virtual Field Trip experience:** Invite our educators to your classrooms virtually to learn about the effects of the sun on creatures at the California Science Center.
- **Visit us in-person:** Learn more about how light and sun affect different materials in the Polar Zone in the Ecosystems Gallery.

Website: www.californiasciencecenter.org

Phone: 213-744-7444



EXTENSION

What happens if there is no sunlight? Challenge students to repeat the experiment to test if sunlight really is causing the water to disappear. This can be done by having students compare paintings made in the sun vs. the shade, on warm sunny days vs. cloudy days, or in the day vs. at night. Students can also test a variety of surfaces in the sun to observe how some surfaces become warmer than others in the sunlight.