

**Title:** Is It Warm? Is It Cool?

**Objective:** Discover the effect of sunlight on temperature.

**Time:** 30 minutes, Later 10 minutes

**Materials Needed:** Two outdoor thermometers and a sunny day

**Activity**

**Theme: Astronomy**

Topic: Temperature and Sunlight

Suggested Grade Levels: K-2

Indoors or Outdoors: Outdoors

**Directions:**

1. Circle up outside in a sunny location. Review what the students know about the sun and notice where it is in the sky.
2. Walk around your school grounds noticing where it is sunny and where it is shady. In each area ask students to touch both human made (building, sidewalk, playground equipment) and nature made (tree trunk, grass, rocks) items and decide if they feel cool or warm.
3. Put a thermometer in one of the sunny locations and one in a shady location. Continue on your walk.
4. Return to the thermometers to read and record the time and temperatures of each location in your journal.
5. Later in the day go back out to record the time and temperatures again in you journal.

*Note:* Make sure you pick locations that will be sunny and/or shady for a few hours so you can go back out a second time.

**Discussion Questions:**

1. What do you notice about the items in the sunny location? Explain your answer.
2. What do you notice about the items in the shady location? Explain your answer.
3. Did the temperature change from the morning to afternoon? Why?
4. Why was the temperature higher in the sunny location than the shady location?
5. Why is the sun important to earth?

## **Science and Engineering Practices:**

3. Planning and carrying investigations; 6. Constructing explanations (science).

## **Crosscutting Concepts:**

1. Patterns.

## **Disciplinary Core Ideas:**

Earth and Space Sciences: ESS1: Earth's place in the universe.

## **Background Information:**

- The Sun is our closest star, 93,000,000 miles away. It is a giant ball of hot gases, including hydrogen and helium.
- Every day the Sun emits huge amounts of solar energy or radiant energy which travels in rays to the Earth.
- Most solar energy is in the form of visible light, ultraviolet radiation, and infrared radiation.
- When the Sun's rays hit Earth, the solar energy is converted into heat.
- The solar energy warms the earth making it a viable place to live. The sun warms the water creating the water cycle which interacts with the atmosphere to create weather. The sun also helps plants create sugars for photosynthesis.

## **Additional Resources:**

- *The Sun Is My Favorite Star* by Frank Ash
- *Living Sunlight* by Molly Bang and Penny Chisholm
- *Sunshine Makes the Seasons* by Frankly M. Branley
- *Sun Up Sun Down* by Gail Gibbons

## **Correlates with:**

Greeting - Good Morning Sun, My Favorite Star (p. 10)

Interdisciplinary Lesson - The Sun's Energy Makes Me Move (p. 116)