

ARE OUR SHADOWS LONG?

TEACHING OBJECTIVES

1. Demonstrate how shadow length can indicate the time of day when the sun's rays are more harmful.
2. Discuss sun safety superpowers:
 - Shade
 - Be SUPER-protected when shadows are shorter



MATERIALS

- Sidewalk chalk

Optional: String, tape, scissors, butcher paper, markers/crayons, flashlight, tall object (e.g., a cup or building blocks) and camera (if desired)

PREPARATION

None

SUNBEATABLES PARENTS: Take photos of the children and their shadows during the activity and post the pictures on your school's bulletin board or email the photos to parents with a summary of the activity.

DIRECTIONS

Note: This activity works best on a sunny day.

1. Take children outside in the morning (before 10:00 AM) or in the late afternoon (after 4:00 PM) on a sunny day.
2. Pair/group the children and ask them to find their shadows.
3. Ask one child to stand still or hold a fun pose while another traces his/her shadow with sidewalk chalk. Then, ask the children to switch tasks. You may need to help them trace their shadows.



THE SUNBEATABLES™ PROGRAM

THE UNIVERSITY OF TEXAS
MD Anderson
Cancer Center
Making Cancer History®

ARE OUR SHADOWS LONG?

Note: Instead of using sidewalk chalk to trace the shadows, you can use butcher paper and markers/crayons. Provide each child with a piece of butcher paper. The paper should be longer than the child's height. Follow the same directions provided in the activity, but use markers/crayons instead of sidewalk chalk.

4. Label each shadow with the child's name and time of day.
5. Repeat the steps above at midday. Ask children to draw over existing shadow outlines using different colors, so they can compare their different shadow lengths.

Note: Be sure children stand in the same spot (labeled with their name) as they did earlier in the activity to compare their shadows. There will be little or no shadow at 12:00 PM. There will be longer shadows before 10:00 AM and after 4:00 PM, in opposite directions as the sun rises and sets.

6. During and after the activity, discuss with children what their shadows look like.
7. Discuss that the sun's rays are more harmful when shadows are shorter. They are shorter when the sun is high in the sky and directly overhead.
8. Highlight the importance of coming inside or playing in the shade when shadows are shorter.



ANOTHER WAY TO MEASURE SHADOWS: OUTDOORS

Instead of using sidewalk chalk or markers/crayons to trace the shadows, use string and scissors.

Note: Use two colors of string to identify morning shadows and midday shadows.

1. Ask each child to stand still and step on one end of the string.
2. Run the string along the child's shadow and cut the string at the top of the child's shadow.
3. Fold a piece of tape in half across one end of the string (it should look like a flag). Label the string with the child's name and time of day.
4. Repeat the process with a different colored string at midday.

ARE OUR SHADOWS LONG?

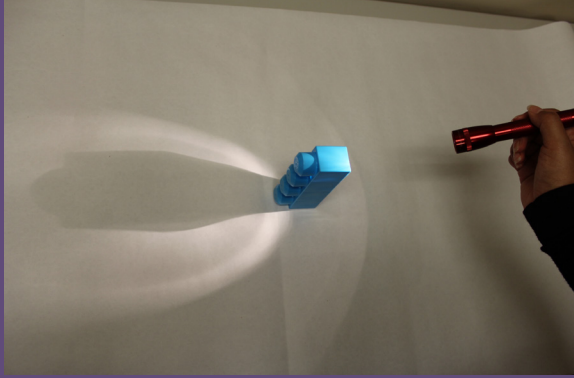


Photo 1

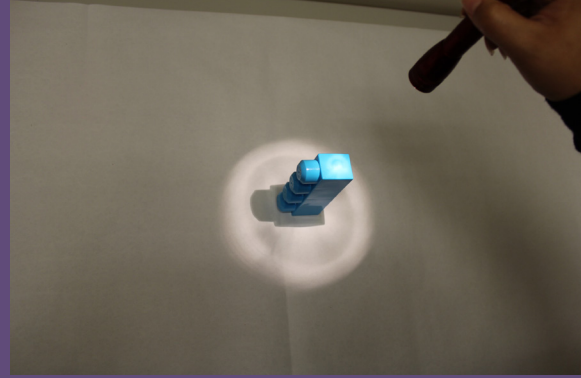


Photo 2

ANOTHER WAY TO MEASURE SHADOWS: INDOORS

To conduct the activity indoors on a cloudy or overcast day when shadows are not as visible, use a flashlight and a standing object.

Note: This object can be a tall cup, building block or other item.

1. Place the standing object on a flat surface, such as a table.
2. Tell the children that the flashlight represents the sun. Shine the flashlight against the side of the object, so that the object's shadow appears long (*see Photo 1*). Explain to children that our shadows are longer in the early morning or late afternoon, when the sun is rising or setting.
3. Then, hold the flashlight directly over the object, so that the object's shadow appears short (*see Photo 2*). Explain to children that our shadows are shortest during peak sun hours, when the sun is directly overhead.

Note: While this option can be used on cloudy days, it is recommended that you repeat this activity with chalk and/or string outside on a sunny day to help children learn more about their shadows.