

Shadow Tracing

Activity Summary

Students draw outlines of their shadows to observe changes in sunlight over time. This activity was inspired by an episode of *Curious George*: pbskids.org/curiousgeorge/

- Class time: 20 minutes to trace shadows, 10 minutes to review the results later
- Grade level: PreK-5

Learning Objectives

- Rotation of the Earth causes day and night.
- As the Earth rotates, the Sun appears to move through the sky: from low in the East, to higher midday, to low again in the West.
- Any shadow cast by sunlight will change its size and shape as the angle of that sunlight changes.

Materials Needed

- Sidewalk chalk

Activity

1. Stand in a sunny spot where you can cast a shadow on a concrete surface.
 2. Have a friend trace your feet onto the concrete using chalk.
 3. Keep your feet in that outline and move any other part of your body to make a shadow that you like.
 4. Now have the friend trace your shadow. Try to keep your feet in the same position and try to stay still while they trace your shadow.
 5. Write your name and the time of day inside your shadow.
 6. Now let your friend pose while you trace your friend's feet and shadow.
 7. Students who finish early should write predictions for their shadows.
 8. Come back to the shadow outlines later in the day (it is good to wait at least 30 minutes), put your feet in their outlines and stand the same way as before.
- What happened to your shadows?
 - Why do you think this happened?
 - When would your shadow be the smallest? When would it be the biggest?