

# Shadow Tracing

**Ages: 3 and up**

## Activity Summary

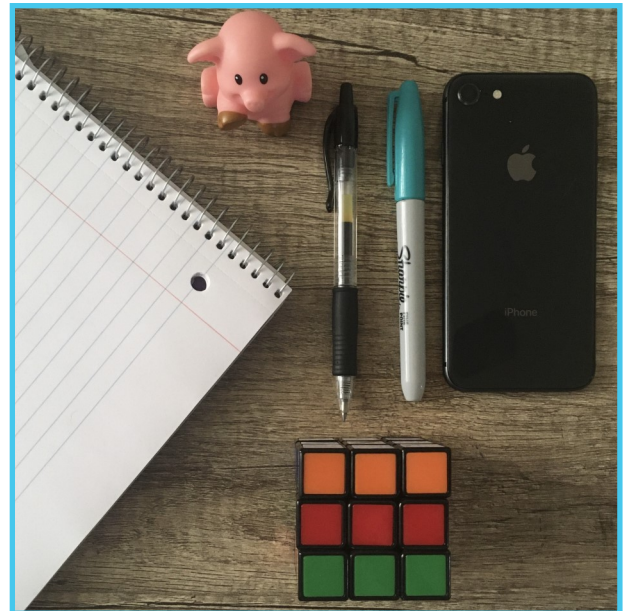
Explore light and shadows! Using flashlights, you can observe how the angle of your light source changes the shape and direction of a shadow. This activity requires two participants, which is also an opportunity to practice cooperation and communication skills.

## Learning Objectives

- Participants will use their observational skills to track an object's shadow.
- Participants will use their fine motor skills to trace the shape of a shadow.
- Participants will make inferences about how shadows are formed.

## Materials & Supplies

- Flashlight — you can use a standard flashlight or the flashlight feature on many phones.
- Paper
- Writing utensil
- Small object or toy (such as blocks, small animal figure, or empty container)



Small object, writing utensil, paper, light source

## Setup

Find a flashlight and check that batteries are working.

Gather materials and bring to a flat surface, such as a table top or the floor.

## Key Words

Shadow

Light

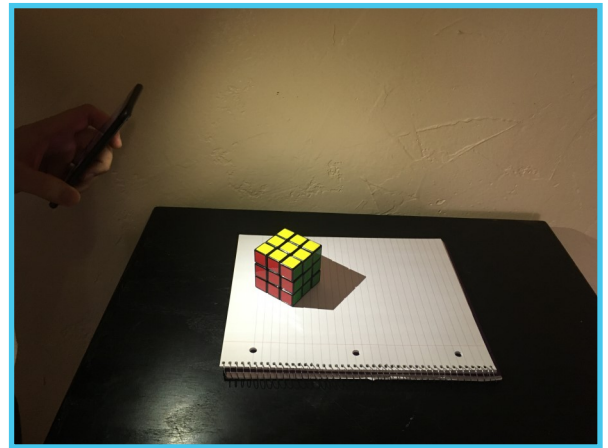
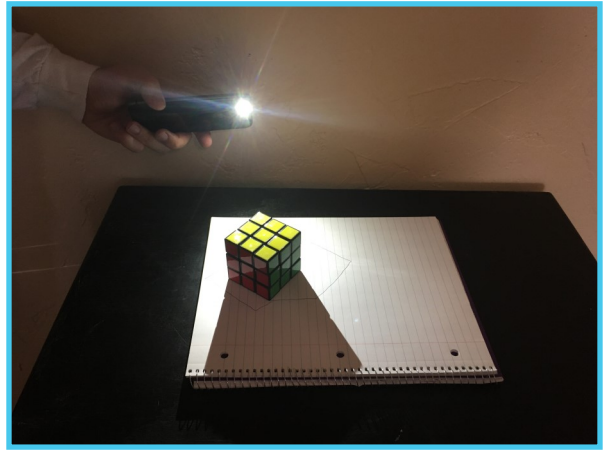
Outline

## Safety Precautions

Remind young children not to directly shine the flashlight into their eyes or others' eyes.

## Directions

1. Partially close any blinds or curtains, leaving the room semi-dark. You will want to be able to see the paper.
2. Place your object on the paper. This object will stay in the same spot throughout the experiment.
3. One partner will begin by holding the flashlight near the object, about 6 inches away.
4. Make observations. Where do you see the shadow?
5. Using a writing utensil, the other partner will trace the outline of the shadow.
6. Move the flashlight to a new position. It can be to the side, above, or even closer or further away.
7. Trace the new shadow and compare to the previous one. What do you notice? Did the shadow stay in the same place?
8. Taking turns between partner, try using other objects. Repeat as many times as you would like!



## Going Further

Questions to ask throughout the exploration:



- What do you think makes a shadow?
- How many shadows do you think could fit on one sheet of paper?
- Why do you think the shadow's shape is changing?
- How might you make your shadow really long? How might you make it really small?

## Adaptations

This activity can also be done outside with some chalk and nature's flashlight: sunshine! Place one object on your sidewalk, driveway, or other hard surface and trace the outline of the shadow. Leave the object in the same spot, and trace its shadow throughout the day. What do you notice happening? Is the shadow staying in the same area?

## Clean up

Return object(s), paper, flashlight, and writing utensils to their storage locations.

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