

INV. 3 ACTIVITY—LIGHT AND SHADOWS

If we were in the classroom learning at school, we would spend the next few weeks exploring light and shadows. Today we will explore our own shadows inside and outside.

Investigation

1. Talk to your child about what they think of when they hear the word light. Then look around your home for light sources—both natural and human made.
2. Have your child explore a flashlight. Have them start with exploring what happens to the beam of light when it is close to the table/counter, what happens when they pull it back. What happens when they put their hand between the light source and the table? Discuss what they are seeing.

Here are some speaking frames you might want to use:

“I noticed _____.”

“When I _____, then _____.”

3. Identify the dark shape they made as a **shadow**.
4. **Record the focus question in their notebook: What makes a shadow?**
5. Discuss how to make a shadow. What is a general rule for making a shadow?
6. Now, go outside and use the Sun to make shadows with the following challenges:
 - a. Make a wide (fat) shadow and a narrow (skinny) shadow.
 - b. Hide your shadow.
 - c. Find a small stick to put on the ground. Make a circle around it with your shadow.
 - d. Make a shadow with three arms. With four arms.
 - e. Shake hands with a family member and look at the shadow. Now figure out how to make a shadow look like you're shaking hands without actually touching your partner's hand.
 - f. Make your shadow jump.
 - g. Make a shadow on the wall and the ground at the same time.
 - h. Find an object that makes an interesting shadow. Turn the object in some way to make a different shadow.
 - i. Find a natural shadow on the playground.
 - j. Make a shadow challenge for your partner. Have them make one for you.
7. Is the rule for making a shadow outside the same as it is inside with a flashlight? Write about what your favorite shadow challenge was.

INV. 3 ACTIVITY—SHADOW PUPPETS AND DRAWINGS

Art Extensions

Make Shadow Puppets

Provide your child with tagboard, construction paper, waxed paper, tape, and scissors. Have them make shadow puppets and demonstrate how they work.

You can also have them practice making shadow puppets with their hands. Or print out hand-shadow-puppet images from the Internet and see if they can re-create those shadows with their own hands. This is a good activity to get other family members doing.

Shadow Drawings

Do this on a sunny day. Have your child choose small objects with interesting shapes for this art project. Fallen leaves might be good objects to use.

First they place the object so that it casts a shadow. Next have them lay a sheet of paper under the object's shadow and trace the outline with a marker or crayon. They can take the paper back inside or find a shady location outdoors to color in the outline and add a background.