



## SUPER FAB LAB INVESTIGATION: **Shadow Investigation**



**Episode:** Shadow Smile

**Cycle:** Light & Shadow

### **Purpose** (What We're Going to Explore and Learn)

When something or someone blocks light, a shadow is created. Shadows have a similar shape to the item that blocked the light. If the item is striped or polka-dotted, though, those patterns do not show up on the shadow.

### **Materials** (The Stuff We Need)

- Stiff paper or thin cardboard cut into different puppet shapes (animals, human faces, stars, etc.)
- Craft sticks and tape
- Markers to draw patterns on the puppets
- Other decorative items for the puppets (optional)
- Flashlight

### **Procedure** (What to Do)

1. Allow children to choose the shape they would like to decorate. Encourage them to decorate their shapes, perhaps by drawing patterns on them.
2. Tape a craft stick to the back of each shape to make the puppet.
3. Explain that you are going to darken the room a little, then shine a light on their puppets to create shadows. Before each child takes a turn creating a shadow, ask the class to predict what the shadow will look like. For example: What shape will it have? Will it be striped like the puppet? Will it have eyes like the puppet? Will it be blue?
4. Turn on the flashlight and check your predictions. Be sure to describe each shadow. What shape is it? Is it patterned? Is it blue?

### **Other Stuff You Might Want to Know or Do**

- Have children draw their predictions of what their puppet's shadow will look like. Then draw what it actually looked like.
- After children have explored with their basic puppets, you might create some that have simple cut-outs in them. What happens when you shine a light on a shape with a hole in it? What does the shadow look like? Why? Help the children think about the fact that shadows are created when light is blocked. If there's nothing to block the light, then there's no shadow.
- On a sunny day, go on a shadow hunt. Talk about where the sun is, what object is blocking the sun's light, and what the shadow looks like.
- You might add flashlights to your classroom or home toy box so children can continue to explore with shadows.