



# Experimenting with Shadows

Standard Connection:  
**ELA.SL.PK4.1b**  
**M.MD.PK4.2a**  
**M.MD.PK4.2b**  
**S.PS.PK4.4**  
**S.T.PK4.2**

**Enduring Understanding(s):**

- Light affects people, animals, and things.

**Essential Question(s):**

- How does light affect the way things look?

Materials	Vocabulary	Books
<ul style="list-style-type: none"> <li>• <i>Dreams</i></li> <li>• <i>Guess Whose Shadow?</i></li> <li>• variety of materials (blocks, pretend animals, Beautiful Stuff, etc.)</li> <li>• flashlight</li> <li>• images of shadows (see Resource)</li> </ul>	<p><b>flashlight:</b> a device that produces light (artificial)</p> <p><b>light source:</b> form of energy, either artificial or natural</p> <p><b>shadow:</b> the dark shape made when something blocks light</p> <p><b>snarl:</b> to growl/show teeth</p> <p><b>windowsill:</b> the shelf below a window</p>	

Intro to Centers	
<b>Preparation: Set up materials.</b>	
<p>“In <i>Dreams</i>, Roberto's paper mouse fell from the <b>windowsill</b>. What do you notice?”</p>	<p>Show illustrations. <b>Children respond.</b></p>
<p>“Why did the mouse's <b>shadow</b> scare away the <b>snarling</b> dog?”</p>	<p><b>Children respond.</b></p>
<p>“Here are images of <b>shadows</b>. What do you notice?”</p>	<p>Show materials. <b>Children respond.</b></p>
<p>“Today in Science, you can experiment with <b>shadows</b> using these materials. What do you notice?”</p>	
<p>“You can use a <b>flashlight</b> as the <b>light source</b>.”</p>	<p>Model.</p>

### **During Centers:**

Encourage children to compare and contrast the shadows they create to the illustrations in *Dreams*/images of shadows. Encourage children to experiment with positioning objects and light sources at different angles. Encourage children to make two or more shadows overlap/touch. Compare and contrast shadows' lengths and widths.

### **Guiding Questions During Centers:**

- How can you change the size of your shadow?
- What happens to your shadow(s) if we turn off the classroom lights?
- How is your shadow similar to or different from illustrations in *Dreams*?
- How can you measure the length/width of your shadow?

### **Thinking and Feedback:**

Invite children to share their processes. Encourage children to describe the challenges they might have encountered.

### **Documentation:**

Collect samples of the children's work as well as photographs of their processes; use the documentation to launch a discussion during Thinking and Feedback.

### **Provocation:**

Encourage children to create shadows on the playground. Compare and contrast the sizes of shadows at different times of the day.

### **Differentiation/Accommodation:**

For Intro to Centers, children with limited verbal skills can use a pre-programmed voice output device to answer questions about the story. (Keep in mind these will likely be closed-ended questions, as those are easiest to program into devices.) This can also be used to help students answer Guiding Questions. During Centers, provide lights of various sizes and shapes to meet students' fine motor needs.