



Shadow Puzzles

Standard Connection:
 ELA.SL.PK4.6
 M.CC.PK4.5
 S.ES.PK4.2
 SS.HE.PK4.1
 PD.GM.PK4.3
 PD.FM.PK4.2
 TH.CN11a.1.PK

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"> • <i>Dreams</i> • <i>Kitten's First Full Moon</i> • images of shadows (see Resource) • poster or tag board • Ziploc bags • basket or box to store puzzles • trays 	<p>blocked: closed off</p> <p>light source: a form of energy (artificial or natural) that helps us to see all the things around us</p> <p>shadow: the dark shape made when something blocks light</p> <p>solve: find an answer</p> <p>surface: the outer layer of an object</p>	

Intro to Centers	
Preparation: Set up materials	
“In <i>Dreams</i> , Roberto’s paper mouse fell from the windowsill. What do you notice?”	Show illustrations. Children respond.
“The mouse blocked the light shining from the streetlight. What do you notice?”	
“In <i>Kitten’s First Full Moon</i> , the kitten blocked the light from the moon. What do you notice?”	
“Today in Puzzles (Manipulatives), you can solve shadow puzzles.”	Show materials.
“We solved this puzzle of a _____. What do you notice?”	Model. Children respond.
“How is the shadow in the puzzle similar to or different from the shadows in <i>Dreams</i> or <i>Kitten’s First Full Moon</i> ?”	Children respond.

During Centers:

Encourage children to describe their puzzle-solving strategies (if they put all the edge pieces together first). Encourage children to count the number of pieces in the puzzles. Scaffold with images of completed puzzles.

Guiding Questions During Centers:

- What strategy did you use to solve your puzzle?
- How is the shadow in your puzzle similar to or different from the shadow in your friend's puzzle?
- How are the shadows in the puzzles similar to or different from the shadows in *Dreams* and *Kitten's First Full Moon*?
- Was the light source that created the shadow in this puzzle natural or artificial? How do you know?

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 and/or video of their process; use the documentation to launch a discussion during Thinking and Feedback.

Provocation:

Use children's Shadow Illustrations to create Shadow Puzzles. Attach magnet tape/velcro to puzzle pieces so children can solve puzzles on a vertical surface, i.e., magnet board, easel, etc. (see below), and use them as backdrops to Blocks/Dramatic Play.

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, adjust puzzles to children's level of challenge, i.e., puzzles with a range of number of pieces. Some children may also benefit from puzzles with knobs on the pieces.