Bear's Shadow - NISEnet

Materials:

1. Flashlight "sun"
2. Toy bear
3. Toy tree
4. Landscape mat with pond and fish
5. Challenge cards
6. Bear's Shadow information sheet
7. Activity and facilitator guides
8. Optional: Moonbear's Shadow storybook by Frank Asch
9. Optional: Moon's Shadow information sheet (for 2017 solar eclipse connections)

Resources:

http://www.nisenet.org/catalog/exploring-earth-bears-shadow Activity guide, facilitator guide, info sheets, table sign, illustrated table mat, and instructional video.

Learning Goals

- A shadow is created when an object blocks light from falling on a surface.
- An object's shadow always appears on the opposite side from the light source.
- Shadows change when the relative positions of the light source and the object change.
- A solar eclipse occurs when the Moon passes directly between the Sun and the Earth, blocking the Sun's light and casting a shadow on Earth.

Intro:

Shadows are created when light falls on, and is blocked by, a surface. The size and position of a shadow can tell you about the source of the light. We are going to experiment with shadows, read a story, and discover the geometry of eclipses.

Steps:

1. Let's pretend the flashlight is the Sun and use it to learn about shadows! Shine the Sun onto the toy bear. Where is Bear's shadow?
2. Try moving the light. What happens to Bear's shadow as the Sun moves?
3. In Moonbear's Shadow, Bear discovers his shadow and has many other adventures. Choose a challenge card and try new things with Sun and Bear!
   • Move the Sun across the sky, from sunrise to sunset. What happens to Bear's shadow as the Sun moves?
   • Shine the light straight down on Bear from above his head. Where is his shadow?
   • Try to make Bear's shadow appear in front of him and behind him.
   • Try to make Bear's shadow longer and shorter.
   • Bear wants to hide in the shade of the tree. Can you help him?
   • Try to make Bear's shadow touch the fish in the pond. (In the story, Bear's shadow scares the big fish away.)

Reflection (Throughout): Does light curve around objects or go in a straight line? How does this relate to phases of the moon? **Relevance:** Look at your own shadow!

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