Moonbear’s Shadow

Summary:
During this sequence of activities students will be introduced to the idea of a shadow, how it is formed, how it moves, and where it can be found. Using Frank Asch’s book “Moonbear’s Shadow” as an activator for the sequence, students become engaged with the idea of why shadows change and move. This leads a time where students use flashlights to reveal the properties of light traveling in a straight line. Using this knowledge, students can explore the way the direction that light falls on an opaque object creates shadows differently. To create a connection with the students’ real world experiences outside, this sequence is concluded with outdoor activities where students are able to explore how the sun’s movement throughout the sky causes their shadows to move.

Learning Goals:

- **Key Science Concepts**
  - Shadows are formed when an object blocks light
  - The objects that block light can be your body or other objects
  - The shape of the object can be seen in the shadow, but details are lost in opaque objects
  - Shadows change in size, length, and clearness as the light source moves
  - When outdoors shadows change as the sun’s position moves throughout the day

**Grades:** Pre-K, K-3

**Time:** varies by class and depth of inquiry

**Materials:**

- Moonbear’s Shadow by Frank Asch
- Flashlights
- Moonbear’s Shadow Kit from NOAO
- Sidewalk Chalk
Sequence:

1. Read Moonbear’s Shadow book aloud during circle time

2. Exploring Light activity
   from *Big Science for Little Hands: “Reflections and Shadows”* (page 3)

3. Introduce Lamp Shadows
   from *Peep and the Big Wide World: “Explore Shadows”* (page 15)

4. Moonbear’s Shadow activity
   (kit available to check out from NOAO)

   *Similar Activities and Guides:*
   Explore Lamp Shadows activity
   from *Peep and the Big Wide World: “Explore Shadows”* (page 16)

5. Exploring My Shadow activity
   from *Big Science for Little Hands: “Reflections and Shadows”* (page 4)

   OR

   Moving Shadows activity
   from *Peep and the Big Wide World: “Explore Shadows”* (page 13)