LASER CLASSROOM
Bringing STEM to light®

BIG IDEAS

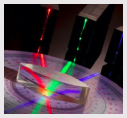
- Shadows are created when light is blocked.
- Shadows change shape and size, depending on the location of the light and the object.

WHAT YOU'LL NEED

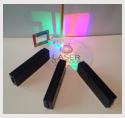
- The Shadows worksheet
- Light Blox
- A piece of plain white paper
- A pencil or pen
- A mirror stand

RELATED PRODUCTS

Click the below to be taken right to the product page.



Light Blox



Elementary Light, Color & Shadow Kit

Tech Light Lab

LIGHT & SHADOWS

SHADOWS

Very young children think of shadows as actual objects. But by grade school, most kids will understand that a shadow is a phenomenon caused by blocking light. Most, however will not be able to articulate the relationship between the location of the light and the size and shape of the shadow. This exploration will give them a chance to develop an intuitive sense of light and shadow.

Set up each group of students with one Light Blox with the slit caps removed, and the worksheet for Activity 5: Shadows. Have students complete the worksheets and then hold a classroom conversation that incorporates student's findings and covers the main discussion points.

You can extend the exploration by inviting students to make predictions about what they think will happen before they explore on their own.

MAIN DISCUSSION POINTS

- A shadow "grows" in the same direction as the light travels. If you point the light from left to right, the shadow appears to the right of the object. If you point the light from right to left, the shadow appears to the left of the object.
- A shadow gets bigger as the light moves further from the object - just like the light got "bigger" as it moved further from the wall in activity 1.
- A shadow disappears when light strikes an object from directly above it.

ACTIVITY SHEET: SHADOWS

1. Remove the line cap from the front of the Light Blox
2. Stand the pencil up in the mirror stand
3. Turn on one Light Blox. Shine the Light Blox at the pencil and observe the shadow.

How can you make a shadow shine to your left?

How can you make the shadow bigger? How do you make the shadow smaller?

How can you make the shadow disappear while still shining the light on the pencil?

Turn on two light blox. Experiment with shadows made from two light sources coming from different directions. What do you notice?