



# LASER CLASSROOM

Bringing STEM to light®

## BIG IDEAS

- The shape of a lens impacts HOW light will bend.

## WHAT YOU'LL NEED

- A set of 3 Light Blox with the slit caps on
- 3 Lenses - concave, convex, trapezoid

## LENSES

### REFRACTION THROUGH A LENS

One of the ways we manipulate light to make it do what we want to do is by using lenses to change the direction of light. This is some background information for you, the teacher. Allow students to explore the materials, using worksheets for guidance, and then hold a classroom discussion to highlight the main learning points.

### CONVEX LENSES

A convex lens is thicker in the middle than at the ends and causes light to bend towards “normal”, or the center of the lens. As three rays of light pass into and through the convex

lens, you can see that they all converge to a point - that point is called the focal point. This focusing ability of convex lenses helps us to see images clearly - from the lenses in our eyes to the lenses in microscopes and telescopes.

### CONCAVE LENSES

A concave lens on the other hand, is thinner in the middle than at the ends, and causes light to bend away from “normal”, or the center of the lens. As three rays pass through the concave lens, you can see that they diverge, or spread out.

# ACTIVITY SHEET 6: LENSES

**PUT THE LINE CAP ON the front of the Light Blox.**

1. Turn on ALL THREE Light Blox. Using the template page, set up three Light Blox and the CONCAVE lens as directed. On the template page, draw the beams that pass through the lens. Describe what happens to the light beams as they pass through the CONCAVE Lens.

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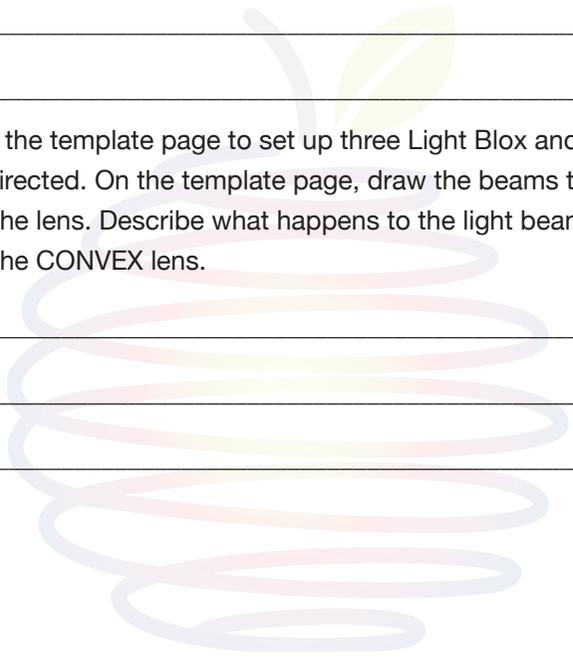
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2. Now use the template page to set up three Light Blox and the CONVEX lens as directed. On the template page, draw the beams that pass through the lens. Describe what happens to the light beams as they pass through the CONVEX lens.

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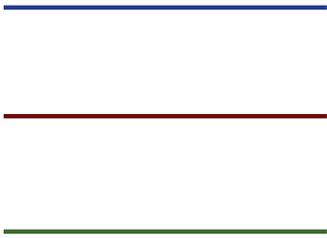
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# TEMPLATE: LENSES

Place the  
**CONCAVE LENS**  
Here



Place the  
**CONVEX LENS**  
Here

