

## Setup

### Activity 2.1

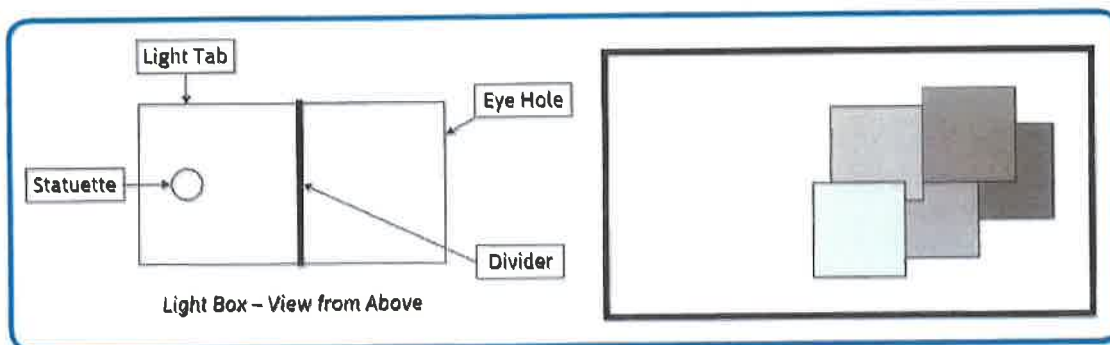
Before class, place six to eight easily identifiable objects around the room. Objects should be visible to some students but not others (with some students' view of the object being blocked). Place a stuffed animal, for example, on the floor next to a desk or table so that only students sitting to that side of the table can see it; students on the other side will not be able to do so. Place one object so that no students can see it. Place another so that all students can see it. The placement of objects so that most can be seen by only some students is necessary to establish key concepts about a straight, unblocked path for light to travel from an object to someone's eyes.

### Activity 2.2

Prepare light boxes from shoeboxes with lids. If available, shoeboxes with hinged lids work well because the lids are less likely to fall off as students pass the light boxes around. On the short end of the shoebox, cut a small round hole (about the size of a penny) near the bottom. Label it eye hole.

When the light box is held up to the eye, it should look completely dark inside. If there are places where light is coming in, cover them with construction paper or tape to prevent light from entering. On the long side of the box, away from the side where you cut the round hole, cut a square, 1.5" tab that can be folded up to create an opening and then folded down again to seal the opening. This will allow light to enter the box (when needed) by folding up the tab. After cutting, tape a piece of construction paper or cardboard over the tab to prevent light from entering the box (around the slits) when the tab is closed. Label this light tab.

The statuette should be small enough to fit standing up in the light box with the lid completely closed. All the light boxes should contain identical statuettes. They should be asymmetrical, so students cannot guess what the entire statuette looks like if they are able to view only one side of it. Statuettes should also be relatively easy for students to draw. Using glue or tape, fix the statuette in each light box in the same place and the same orientation, so that the light boxes are as close as possible to identical.



Prepare dividers—pieces of cardboard that fit into the light box—but do not put them in the light boxes until the appropriate point in the lesson. Each divider should have a 2in square hole cut in a different place so that the light boxes will provide different views of the statuette. Dividers can be taped to the sides of the boxes so that they remain upright and in position. See to the drawings and photograph images for reference. The time to add the dividers to the boxes will be specified in the lesson.

