

Lesson 2: Teacher Reference 1

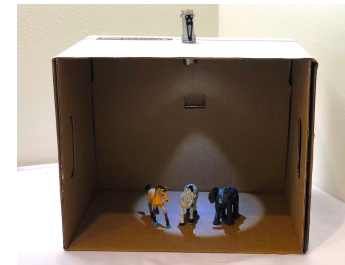
Box Model Modification Instructions

Materials needed for each box model (multiply by 6 for a class set):

- box model with 1 toy in Room B and 1 toy in Room A
- 2 2"-x-2" pieces of cardboard or dark paper to cover the flashlight holes in Rooms A and B
- 1 box cutter
- packing or duct tape
- 1 cylindrical flashlight (with focusing and dimming capabilities)

1. Cut a flashlight hole in the top of Room B (if you didn't do this in Lesson 1) and add the flashlight.

The hole should be about $\frac{2}{3}$ of the way toward the back of the box. Trace the flashlight's diameter and cut a hole a little smaller than that. Flip the box upside down and insert the flashlight partway through the hole. The end of the flashlight with the on/off switch should be sticking out the top of Room B.



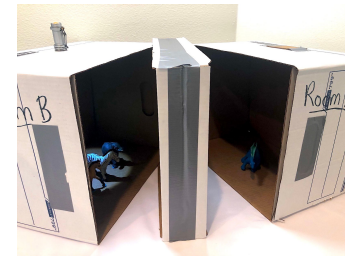
2. Cover the flashlight hole in Room A.

Cut a small piece of cardboard or dark paper that is large enough to cover Room A's flashlight hole. Tape it over the hole. Students may want to remove this piece of cardboard as an idea for an investigation. Tell them this is a great idea that they can add to the list.



3. Assemble the completed box model.

Insert Room A and Room B into the lids. Turn the flashlight on in Room B.



4. Check to make sure you're seeing the desired effect.

Dim the lights in the classroom. When you look through the viewing hole in Room B, you should see Room B's toy in the light and reflected in the one-way mirror.

When you look through the viewing hole in Room A, you should see Room A's toy in the dark and see through the one-way mirror to the toy in Room B.

You will use the second piece of cardboard later in Lesson 2 to cover the flashlight holes in Rooms A and B.

