One-Way Mirror Model

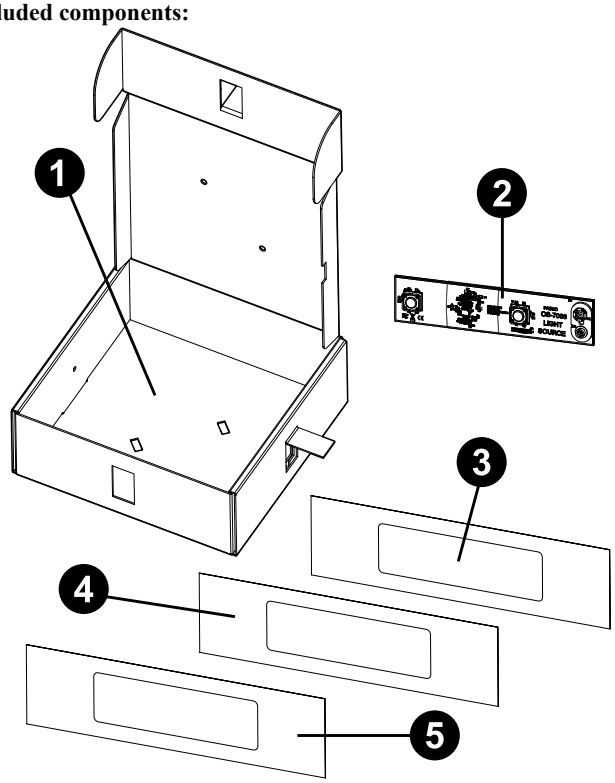
OS-7066

Introduction

The One-Way Mirror Model is used to study the way in which light passes through and is reflected from certain surfaces. The model consists of a cardboard box, a light source, a pair of figurines, and three cards which can be inserted into the box to act as a window or mirror. The One-Way Mirror Model is used in the PASCO Version of the OpenSciEd curriculum, Unit 6.1.

Components

Included components:



1. Light box
2. Light source
3. Mirror card
4. One-way mirror card
5. Clear card
6. 2× block person figurines (1× red, 1× blue; not pictured)

Required equipment:

- 9-volt battery

Recommended equipment:

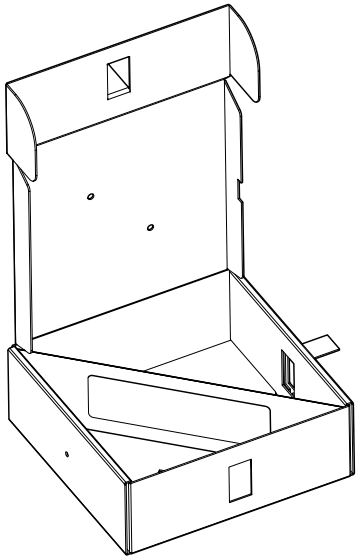
- Wireless Light and Color Sensor (PS-3248)

Controlling the light source

The lights on the light source can be controlled using the buttons on the opposite side from the lights. Briefly press each button to turn the adjacent light on or off. You can also put a light into dimming mode by pressing and holding the button for at least one second. In this mode, each subsequent press of the button will slightly dim the light by one stage. After the light is dimmed four times, the next press will turn off the light and return it to normal operation.

One-way mirror demonstration

1. Place one of the cards into the light box along the line marking the division between the two "rooms".



2. Insert the two figurines into the small rectangular holes in the bottom of the box.

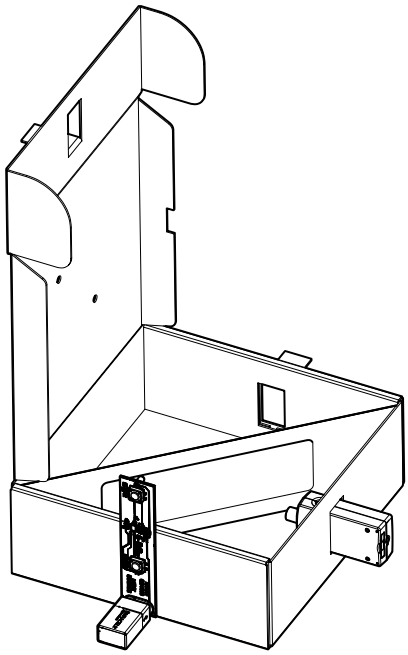
> **TIP:** To ensure the figurines remain in place even as the box moves, place tape over the underside of these holes before inserting the figurines.

3. Close the lid of the box, inserting the tabs on the front to prevent it from opening.
4. Place the light source onto the top of the box so that the lights extend through the small circular holes.
5. Plug a 9-volt battery into the battery terminals on the light source.
6. Press one or both buttons on the light source to turn on one or both of the lights.
7. Observe the interior of the box using the rectangular holes on the sides of the box.
8. *Optional:* Place the lights into dimming mode. Observe how varying the brightness of each light alters what you observe in each "room".

Measuring reflected and transmitted light

This experiment uses a Wireless Light and Color Sensor (PS-3248) to measure how much light is reflected versus how much is transmitted for each card.

1. Place the one-way mirror card into the light box along the line marking the division between the two "rooms".
2. Position the light source so that the bulb closest to the battery is inserted into the small circular hole on the side of the box, as shown below.



3. Close the box, then turn on the light that has been inserted into the box.
4. Insert the Light and Color Sensor into each of the rectangular holes on the side of the box. For each hole, measure the light intensity.
5. Compare the light intensity measurements from each "room" using data collection software.
6. Open the box and replace the one-way mirror card with the clear card. Repeat Steps 3 through 5.
7. Open the box again and replace the clear card with the mirror card. Repeat Steps 3 through 5.

Specifications and accessories

Visit the product page at pasco.com/product/OS-7066 to view the specifications and explore accessories. You can also download experiment files and support documents from the product page.

Experiment files

The One-Way Mirror Model is designed to be used with the PASCO Version of the OpenSciEd curriculum, Unit 6.1. Contact PASCO for more information on how to access the curriculum.

Technical support

Need more help? Our knowledgeable and friendly Technical Support staff is ready to answer your questions or walk you through any issues.

Chat	pasco.com
Phone	1-800-772-8700 x1004 (USA) +1 916 462 8384 (outside USA)
Email	support@pasco.com

Product end-of-life disposal

This electronic product is subject to disposal and recycling regulations that vary by country and region. It is your responsibility to recycle your electronic equipment per your local environmental laws and regulations to ensure that it will be recycled in a manner that protects human health and the environment. To find out where you can drop off your waste equipment for recycling, please contact your local waste recycle or disposal service, or the place where you purchased the product. The European Union WEEE (Waste Electronic and Electrical Equipment) symbol on the product or its packaging indicates that this product must not be disposed of in a standard waste container.

CE statement

This device has been tested and found to comply with the essential requirements and other relevant provisions of the applicable EU Directives.

FCC statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.