

The Ray Model of Light (Science 8)

ACTIVITY 1: THE RAY MODEL

Shine the laser pointer through the entire length of the rectangular block.

1) **Draw** what you see below.



2) **Describe** your observations in one or two sentences.

ACTIVITY 2: FUN WITH RAY BOXES

Plug in your ray box and experiment with how the different slit attachments affect the light that is cast onto the table.

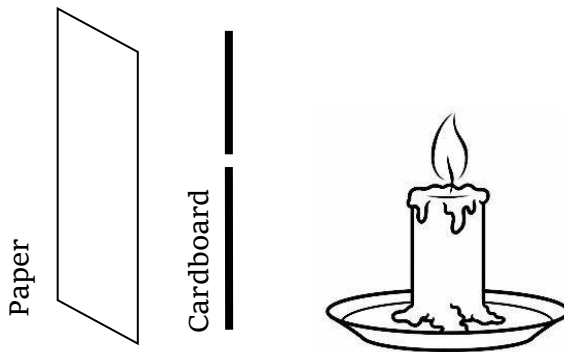
3) **Draw** your observations below.

Single Slit <div data-bbox="555 1486 818 1560" style="border: 1px solid black; width: 100%; text-align: center; padding: 5px;">Ray Box</div>	Three Slits <div data-bbox="1190 1486 1453 1560" style="border: 1px solid black; width: 100%; text-align: center; padding: 5px;">Ray Box</div>
Five Slits <div data-bbox="555 1745 818 1818" style="border: 1px solid black; width: 100%; text-align: center; padding: 5px;">Ray Box</div>	Wide Slit <div data-bbox="1190 1745 1453 1818" style="border: 1px solid black; width: 100%; text-align: center; padding: 5px;">Ray Box</div>

- 4) What does the “ray model of light” state? Explain how your observations from activity 1 support this model.

ACTIVITY 3: HOLD A CANDLE TO ME!

Light the candle and set up your experiment as shown below.



- 1) Place the candle fairly close to the cardboard (about 3 cm away). One of your group members should watch the cardboard carefully at all times to ensure it does not catch fire accidentally.
 - a) Observe the image of the candle flame on the white piece of paper. Does it appear to be right side up or upside down? _____
 - b) Draw the image of the flame on the ‘piece of paper’ in the diagram above. Then, draw straight lines (to represent light) from the candle through the hole onto the sheet of paper.
 - c) How does this experiment give evidence to support the idea that light travels in straight lines?

- 2) Observe what happens to the size of the flame ‘picture’ projected on the white sheet of paper when you:

- a) Move the cardboard towards the candle (but not too close!)

- b) Move the cardboard away from the candle

