

Particle Model of Light Worksheet 1a: Light Sources

1. 1. a. What is the shape of the path that light takes? What evidence do you have for your answer?

b. How can you accurately draw the path of light in your diagrams?
2. a. Does light move? What evidence do you have for your answer?

b. How can you show the direction of light in your diagrams?
3. In a darkened room, a lit light bulb is enclosed in a box that has a hole in one side.
 - a. Can any of the eyes not see the light coming from the portion of the bulb marked with a dot? Explain.
 - b. Accurately draw the path of the light to each eye that would be able to see light coming from the dot on the bulb.
 - c. Considering all the other locations for eyes that could see the light from the dot on the bulb, what can you conclude about the number of rays of light coming from the dot?
 - d. If the light bulb were turned off, would any of the eyes be able to see the dot on the bulb? Explain.
4. The three eye locations pictured can see a bug.

- a. Use the given light rays to locate the position of the bug.
- b. Add several light rays from the source that would be needed in order to see the bug.

5. At a concert, a performer is lit with spotlights in the ceiling.

- a. Draw light rays to indicate how an audience member can see all of the performer's body.
- b. What can you conclude about the number of rays of light coming from the source?
- c. Can the audience member see the light source? Why or why not?
- d. Can the performer on the stage see the light source? Why or why not?
- e. Unless there is fog in the air, it is not possible to see the beam of light from the source to the performer. Explain why.