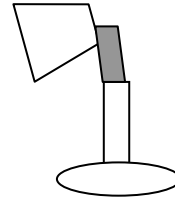


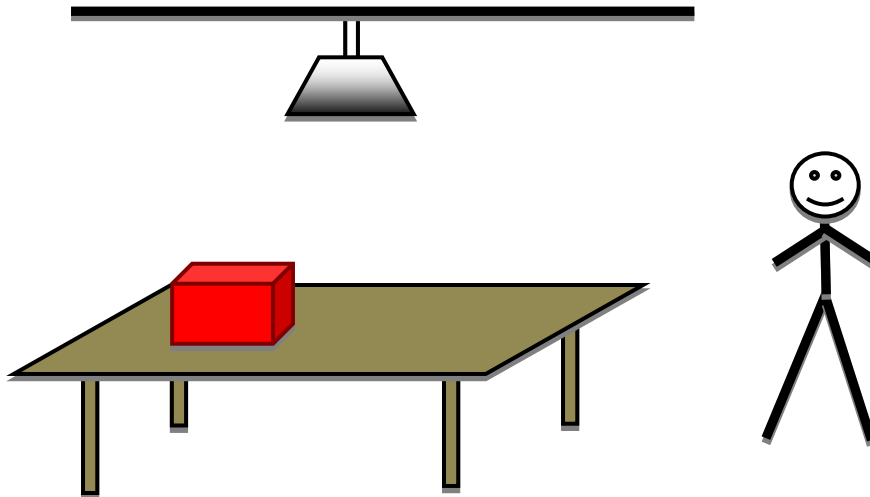
Name: \_\_\_\_\_

Grade: \_\_\_\_\_

**Topic: Light and Color-The Photon Model**



Draw photons as little circles coming out of the lamp and put in arrows to show the direction they are going.



How has to happen so that we see the box? Draw photons as little circles coming out of the lamp and what has to happen so that we can see the box on the table.

1. Get a mirror. Place a pencil on your table. Put a book halfway between the pencil and your eyes so that you cannot see the pencil. Next, find a way to hold the mirror so that, without moving your head, you can see the pencil by looking at the mirror. Why can you see the pencil in the mirror? Draw a picture showing the path of the photons starting from the lamp and ending up in your eyes. Include arrows in your diagram to show which way the photons are going. (In your drawing, include a light source, mirror, pencil, and your eyes.) Be ready to share with the class!
2. Hold a book an inch above your table and observe that the table below the book is darker than the rest of the table. How can you explain what you notice using the photon model?

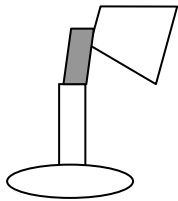
3. Watch the teacher demonstration using a laser pointer. Using what we have learned about the photon model, let's answer these questions about why we couldn't see the laser beam until chalk dust was in the air:

How do photons leaving the red laser pointer get into our eyes?

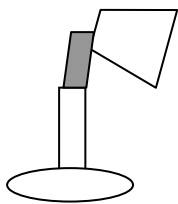
Why weren't photons going into our eyes before chalk dust was present?

Draw a picture showing the photons reflecting off the chalk dust and entering your eyes.

Using our new and improved photon model that now includes color, draw in the colored photons. Use arrows to show the direction they photons are going.



White Light



Green Light



What color photons come out of the room lights? How do you know?

Which photons do you think go into your eyes from my shirt?

If photons of different colors hit my shirt, then why might only orange ones go into your eyes?

What happens to all the other colors?