

Name _____

Date _____

Properties of Light

Pre-Class Activity:

Visit the following website and read about the characteristics and behaviors of waves.

Short URL: <http://goo.gl/eHok8o>

Full URL: http://www.pbslearningmedia.org/asset/npe11_int_lightbehaviors/

Aim of this activity:

To observe how light behaves as it travels through different materials and to classify that behavior.

Materials:

Plastic box Laser Incense stick Aluminum foil Tissue paper
Wax paper Cardboard Color paddle set

Activity:

____ 1. Place a piece of paper on one end of the box, and shine the laser through the other end of the box. Where can you see the laser light? Can you see the light in the box? Sketch and describe your observations.

Observations	Sketch

____ 2. Have your teacher light an incense stick and place it in the hole in the side of the box.

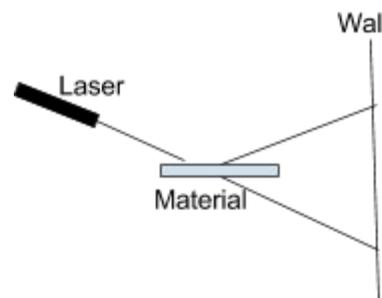
____ 3. Shine the laser through the box as before. What do you now observe? Sketch and write down and your observations. What is this phenomenon called?

Observations	Sketch

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____ 4. Now, we're going to investigate whether certain materials will **absorb**, **diffract**, **reflect**, or **transmit** light from the laser. Write your predictions below for each material. Holding the laser and material, shine the laser at an angle towards the materials onto a wall or paper. Record your observations.



Item	Prediction	Results
Aluminum Foil		
Black Paper		
Cardboard		
Diffraction Slide		
Tissue Paper		
Wax Paper		
Red colored slide		
Green colored slide		
Blue colored slide		
Yellow colored slide		

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____ 5. Fill the box up to the halfway point with water, and put the lid on the box. Have your teacher fill the rest of the box with smoke as in Step 2.

____ 6. Shine the laser through the smoky air and into the water. What do you notice about the light as it passes from the smoky air to the water? Now shine the laser through the water and into the smoky air. What do you notice as it passes from the water to the smoky air? Sketch and explain your observations. What is this phenomenon called?

Observations	Sketch

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Reflect:

You have now observed each of the terms listed below. As a group, identify which observations describe each term, and come up with a short definition for each term. Think back to the pre-lab activity you completed.

Term	Where Seen	Definition
Absorption		
Transmission		
Reflection		
Refraction		
Scattering		
Diffraction		