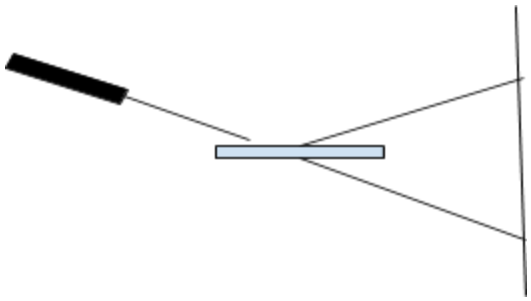
Properties of Light - Teacher Notes

For the following materials, predict whether the material will *absorb*, *diffract*, *reflect*, or *transmit* the laser light. Now shine the laser at the materials and check the boxes corresponding to the behavior(s) you observe.

Note: Have the students shine the laser at the object at an angle. This will allow them to see if there is reflection. They can shine it towards a piece of paper or the wall to see the reflected light.



Item	Expected Results (red laser)
Aluminum Foil	Reflect (the reflection will be smeared out)
Black Paper	Absorb
Cardboard	Absorb
Diffraction Slide	Diffract (you will see a grid of spots)
Tissue Paper	Absorb (mostly, you will see a little bit of transmission/reflection)
Wax Paper	Transmit (the spot will be blurry, indicating a bit of diffraction) (you can also see a bit of reflection)
Red colored slide	Transmit (and some reflection)
Green colored slide	Absorb (and reflect, see a very small amount of transmission)
Blue colored slide	Absorb (and reflect, see a very small amount of transmission)
Yellow colored slide	Absorb (and reflect, see a very small amount of transmission)

Place a piece of paper on one end of the plastic box, and shine the laser through the other end of the box. Where can you see the laser light? *On* the box? *In* the box? On the paper? Sketch and describe your observations.

Observations	Sketch
Students will see the light on the paper, but will not see the laser light inside the box.	

Shine the laser through the upper part of the box (through the smoke). What do you observe now? Sketch and describe your observations. What is this phenomenon called?

Observations	Sketch
The particles from the smoke reflect the light rays in all directions, so we can now see the laser light. This is called scattering.	

Holding the laser at an angle, shine it from the top of the box, 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 from the side of the box, 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
Path of the laser will change direction ("bend") when it travels from one medium into another. This is refraction.	