

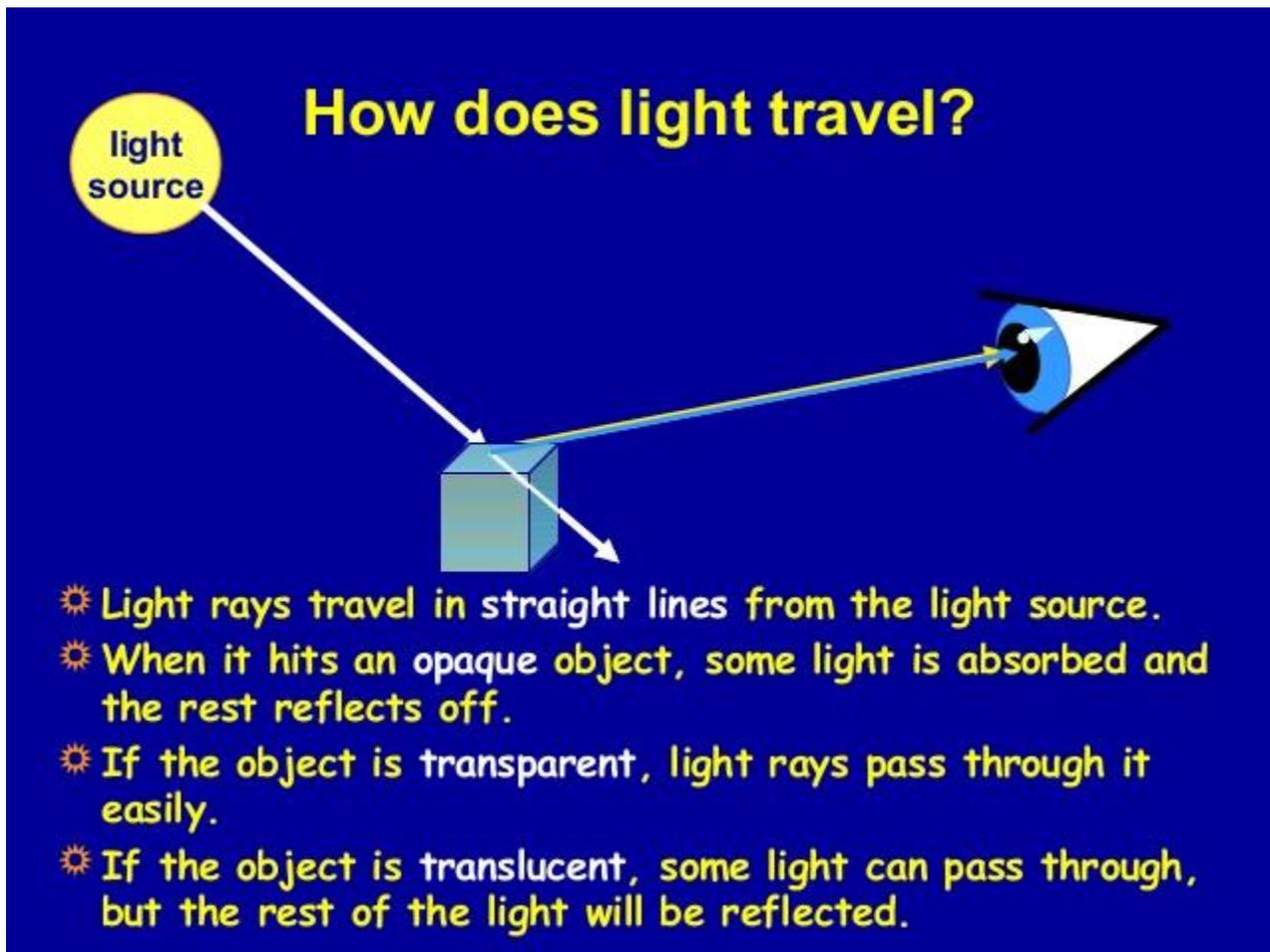
Light Energy

Why? Students to understand light is a form of energy that behaves in predictable ways depending upon the medium (solid, liquid, gas) it encounters.

P#1

Light travels in straight lines

Once **light** is produced, it will travel in a straight line until it interacts with a medium(s). Shadows are evidence of light traveling in straight lines. Some objects, that are opaque, block light so that it cannot reach the surface where we then see the shadow.



P#2 What happens when light hits a surface?

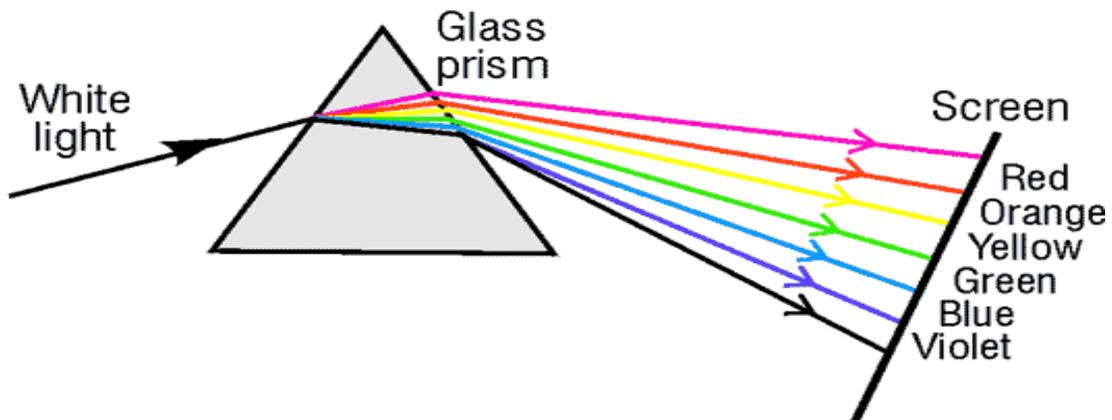
When light hits a surface, it can be reflected, transmitted, or absorbed. What happens to the light depends up on the material (medium) it strikes.

P#3

Light can **reflect**, or bounce off, the surface of some materials. When you see your reflection in a pool of water, it is because light reflects from the water's surface. When you see your reflection in a mirror, it is because the light reflects from the surface of the mirror!

P#4

Light can also be passed, or **transmitted**, through a material. All light waves travel at the same speed through the same material. However, as light moves from one material to another, its speed changes. This change in speed causes light to bend, or **refract**. When visible light is transmitted through a **prism**, each color is bent a slightly different amount. That is because each color has a slightly different frequency. This bending separates the colors, allowing us to see each one.



P#5

Eyeglass lenses **refract** light to help people see better. Refracting telescopes and cameras also use lenses to refract light and form images.

P#6

When light strikes an object, some colors of light are **absorbed**, or taken in, by the object. Other colors of light are reflected. The color you see is the color of light that the object reflects. A cherry appears red because it reflects red light and absorbs all other colors.

When light is absorbed by certain materials, it can also produce heat.