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**Study Guide - Light**

S4P1. Students will investigate the nature of light using tools such as mirrors, lenses, and prisms.

a. Identify materials that are transparent, opaque, and translucent.

b. Investigate the reflection of light using a mirror and a light source.

c. Identify the physical attributes of a convex lens, a concave lens, and a prism and where each is used.

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| Explain the following terms:  Reflection- when light hits a smooth surface and bounces off a surface.  Refraction- when light bends or changes based on the amount of light rays. (speed of light slows down). also change speed and angles. | Describe the physical features of each type of lens:  Concave: caves in. When light rays go through a concave lens spreads out light.  Convex- when light goes through convex lens, it meets in the middle and focuses in at certain point. |
| Describe the path of light when it is reflected off a mirror- the path of light bounces off in the same direction. | Describe what happens to light when it passes through a prism.  When it reflects through a prism the white lights separates into different colors (all part of the white light) |
| What tends to happen to light when it hits a white surface? The light gets reflected rather than absorbed.  What tends to happen to light when it hits a black surface? The black material absorbs the light, and much light doesn’t go through. | Define the following terms:  Opaque- is a property of a material that light cannot penetrate through.  Translucent-a property of material that permits some light to go through; but not all- Some if reflected or absorbed.  Transparent-property of a material that allows all light to come through where you can see completely through the material |