**Topic 3: Refraction Reading Assignment Key**

**Refraction**

1. What is refraction? Why does it occur? What does the resulting image of the object “look” like?

Refraction is the bending of light when it travels from one medium, (substance), to another. Light bends because it changes speeds when it moves through different materials. The resulting image of an object will appear to be in a different position from where it really is.

**Around a Bend with Light**

1. When will light bend towards the normal? Why?

When light travels into a denser, (thicker), medium it will bend toward the normal, because the light slows down.

1. When will light bend away from the normal? Why?

When light travels into a less dense, (thinner), medium it will bend away from the normal, because the light speeds up.

1. Copy figure 3.27 on Page 204 below. **Make sure to use a ruler and label all aspects of the diagram.**
2. What is another example of when refraction can occur? What is the result?

Refraction will occur when light travels through air at different temperatures, the air at different temperatures have different densities. This refraction can result in a mirage if the light is travelling through hotter air near to the ground and cooler air higher up. The light bends upward as it enters the cooler air creating a “pool” like effect.

**Is that All There is to Light?**

1. What are the three behaviours that can happen to light? Give an example of when this can happen all at the same time.

Light from the Sun can reflect off a puddle to produce a reflection, while the water in the puddle is absorbing the light and producing thermal energy. Objects “inside” the puddle will not appear in the correct location due to the refraction that is taking place.

1. Copy table 3.1 on Page 205 below. **You may summarize the information.**