

Science Learning Progression

Grade: Middle School

Prerequisite skills/knowledge:

Heat, light, sound, and electrical *energy* can be transferred from place to place.
4-5 PS3

Sub skill/knowledge:
Light acts like a wave in many ways and particles in others. This can explain how light behaves.

Sub skill/knowledge:
Something can be “seen” when light waves that are emitted or reflected by the object enter the eye.

Sub skill/knowledge:
Light from the sun is made up of a mixture of many different colors even though it looks white to the eye.

Sub skill/knowledge:
Other things that emit or reflect light have a different mix of colors.

Big Idea
Standard 6-8 PS3D

Visible light from the Sun is made up of a mixture of all colors of light. To see an object, light emitted or reflected by that object must enter the eye.

Later big ideas that build on this big idea include:

9-11 PS3A Energy can be *transferred* or *transformed* but not created or destroyed (*Conservation of Energy*).
9-11 PS3E *Electromagnetic waves* differ from physical *waves* because they do not require a medium and they all travel at the same *speed* in a vacuum. This is the maximum *speed* that any object or *wave* can travel. Forms of *electromagnetic waves* include X-rays, ultraviolet, visible light, infrared, and radio.