

Grade Level/Course:

Grade 7 Life Science

Lesson/Unit Plan Name:

Light Card Sort

Rationale/Lesson Abstract:

Light vocabulary building, students identify and share vocabulary meaning.

Timeframe:

10 to 20 minutes

Common Core Standard(s):

6. Physical principles underlie biological structures and functions. As a basis for understanding this concept, students know:

- a. visible light is a small band within a very broad electromagnetic spectrum.
- b. for an object to be seen, light emitted by or scattered from it must enter the eye.
- c. light travels in straight lines except when the medium it travels through changes.
- d. how simple lenses are used in a magnifying glass, the eye, camera, telescope, and microscope.
- e. white light is a mixture of many wavelengths (colors), and that retinal cells react differently with different wave lengths.
- f. light interacts with matter by transmission (including refraction), absorption, or scattering (including reflection).
- g. the angle of reflection of a light beam is equal to the angle of incidence.

Instructional Resources/Materials:

Light vocabulary cards – printed (class set) Enough for each student (See card sort below)

Activity/Lesson:

Each student takes a light vocabulary card and searches for the student with the matching definition.

Once a match is found, students sit down together and write out definitions. Students should write sentences using vocabulary words in the correct context. These can be added to a yearlong vocabulary booklet.

Assessment:

Oral check at the end of class “Who can give me a definition of”

Students write sentences using vocabulary words in the correct context.

Wave	A disturbance that transfers energy from place to place
Energy	The ability to do work or cause change
Medium	The material through which a wave travels
Vibration	A repeated back-and-forth or up-and-down motion

Crest	The highest part of a wave
Trough	The lowest part of a wave
Amplitude	The maximum distance the particles of a medium move away from their rest position as a wave passes through the medium
Wavelength	The distance between two corresponding parts of a wave

Frequency

The number of complete waves that pass a given point in a certain amount of time

Hertz

Unit of measurement for frequency

Electromagnetic waves

Waves that transfer electric and magnetic energy

Electromagnetic radiation

The energy transferred through space by electromagnetic waves

Electromagnetic spectrum

The complete range of electromagnetic waves placed in order of increasing frequency

Visible light

Electromagnetic waves that are visible to the human eye

Transparent

That which transmits light without scattering it

Translucent

That which scatters light as it passes through

Opaque	Reflecting or absorbing all of the light that strikes it
Primary colors	Three colors that can be used to make any other colors
Secondary color	Any color produced by combining equal amounts of any two primary colors
Complementary colors	Any two colors that combine to form white light or black pigment

Pigment	A colored chemical compound that absorbs light and can be used to color other materials
Reflection	The bouncing back of an object or wave when it hits a surface through which it cannot pass
Law of reflection	The rule that the angle of reflection equals the angle of incidence
Plane mirror	A flat mirror that produces an upright, virtual image the same size of an object

Image	A copy of an object formed by reflected or refracted rays of light
Virtual image	An upright image formed where rays of light appear to meet or come from
Concave mirror	A mirror with surface that curves inward
Optical Axis	An imaginary line that divides a mirror in half

Focal point

The point at which light rays parallel to the optical axis meet, or appear to meet, after being reflected (or refracting) by a mirror (or lens)

Real image

An upside-down image formed where rays of light meet

Convex mirror

A mirror with a surface that curves outward

Refraction

The bending of waves as they enter a new medium at an angle

Lens	A curved piece of glass or other transparent material that is used to refract light
Convex Lens	A lens that is thicker in the center than at the edges
Concave Lens	A lens that is thinner in the center than at the edges
Cornea	The clear tissue that covers the front of the eye

Pupil	The opening through which light enters the eye
Iris	The circular structure what surrounds the pupil and regulates the amount of light entering the eye
Retina	A sheet of light-sensitive cells at the back of the eye on which an image is focused
Rods	Receptor cells in the eye that work best in dim light and enable you to see black, white, and gray

Cones	Light sensitive cells in the retina that work best in bright light and enable you to see color
Nearsighted	A word used to describe a person who can see nearby things clearly, but objects at a distance are blurred
Farsighted	Able to see distant objects clearly
Camera	An optical instrument that uses lenses to focus light, and film to record an image of an object

Telescope

An optical instrument that forms enlarged images of distant objects

Refracting Telescope

A telescope that uses two convex lenses to form images

Objective

A lens that gathers light from an object and forms a real image

Eyepiece

A lens that magnifies the image formed by the objective

Reflecting telescope

A telescope that uses a concave mirror to gather light from distant objects

Microscope

An instrument that makes small objects look larger

Electron microscope

A microscope that uses a beam of electrons to produce a magnified image