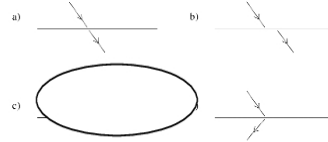


P. Sci. Unit 7 Worksheet.

Key

Part A.

- Which property of light is *not* explained by the wave model of light?
Blue light can knock electrons off a plate but red light cannot
- The particle model of light explains how light can travel through empty space without a medium
- The amount of energy in a photon of light is proportional to the frequency of the corresponding light wave
- The rate at which light energy flows through a given area of space is referred to as its intensity
- Which type of electromagnetic waves has slightly longer wavelengths than red light? infrared
- Which type of waves has wavelengths longer than microwaves?
Radio waves
- Which type of electromagnetic waves has the highest frequency?
Gamma rays
- Which type of electromagnetic radiation is used to kill cancer cells?
Gamma rays
- Short-range radar works by sending a signal out from a control tower that is reflected off a plane back to the control tower
- The law of reflection states that when light rays reflect off a surface the angle of incidence equals the angle of reflection
- An image that results from an apparent path of light rays is called a virtual image
- You look at a red tulip, with green leaves, under green light. What would you see? A black flower with green leaves
- The color that an object appears to be depends on the wavelengths of light that the object reflects
- A virtual image caused by reflection of light in the atmosphere is called a mirage
- Light rays that pass through a lens change direction because they are refracted



- Which drawing illustrates the law of reflection? c
- The two most common models of light describe it as a wave or as a stream of particles
- In the particle model of light, individual "packets" of light are called photons
- The energy of light is proportional to the frequency of the corresponding light wave.
- The amount of light that illuminates a given surface area is referred to as intensity.
- In a vacuum, all light travels at the same speed, which is 3×10^8 m/s or 186000 mi/s
- All possible kinds of light, at all energies, frequencies, and wavelengths, make up the electromagnetic spectrum
- The electromagnetic waves with the highest energy and shortest wavelengths are classified as gamma rays
- Microwaves are used for cooking as well as for communication
- A(n) infrared sensor can be used to measure the heat that objects radiate
- The theoretical line perpendicular to the surface where light hits a mirror is called the normal
- The law of reflection states that the angle of incidence is the same as the angle of reflection
- The image that you see in a mirror that results from the apparent path of light rays is called a(n) virtual image
- In a(n) real image, light rays really exist at the point where the image appears
- An object looks red if it reflects red light and absorbs all other colors
- Light may bend when it changes mediums because the speed of light is different in each medium
- Light inside a fiber optic cable bounces off the walls of the fiber because of total internal reflection
- A lens that bends light inward is called a(n) converging lens