

## Light is a form of **electromagnetic radiation**.

This means that it is a combination of <u>electrical</u> and <u>magnetic</u> energy.

Light energy is transmitted – or given off – by electrons in an object.



<b>Compare and Contrast Chart</b>	
How light is like sound.	How light is different than sound.
Like sound, light travels in waves	Light is not a vibration of particles.
that have a certain wavelength &	
frequency.	However, light can be described as
	part waves/part particles called
Like sound, its speed is different in	photons. These photons do not
different materials.	vibrate in the way that particles
	vibrate in sound energy.
Like sound, light can be reflected or	
absorbed by certain materials. It	Capable of transmitting its energy
can also pass through certain	through a vacuum.
materials.	

<u>Electromagnetic Radiation</u> encompasses a range or spectrum of different types of light.

Different types of light have different wavelengths and frequencies. As a matter of fact, <u>light is categorized or</u> <u>identified based upon its wavelength and frequency</u>.

Visible light (which is the light that we can see) makes up a very small part of the electromagnetic spectrum.

In visible light, different wavelengths are seen by us as different colors. (See attached sheet.)

But, there are all kinds of other light energy that we cannot see. (See attached sheet from NASA and pictures on pages 458-459 in textbook.)

Some types of electromagnetic radiation have wavelengths that are <u>shorter</u> than visible light. These are <u>ultraviolet, x-</u> <u>ray, and gamma ray radiation</u>. They have <u>higher</u> <u>frequencies</u> and <u>MORE ENERGY</u> than visible light.

**Infrared waves, microwaves, and radio waves** have wavelengths that are **longer** than visible light. **Longer waves have lower frequencies** and **LESS ENERGY**. Stars, including our Sun, give off most of the light in the universe. Our sun gives off visible light, ultraviolet, infrared, x-ray, and other radiation.

## Most sources that give off visible light also give off heat.

All stars give off radio waves.

Let's discuss mixing paint colors vs. mixing light.

Complete exercise sheets and watch relevant BrainPop movies.