Color and the Electromagnetic Spectrum

By Genevieve Florez

Easy e-book

Color and the Electromagnetic Spectrum

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Genevieve Florez

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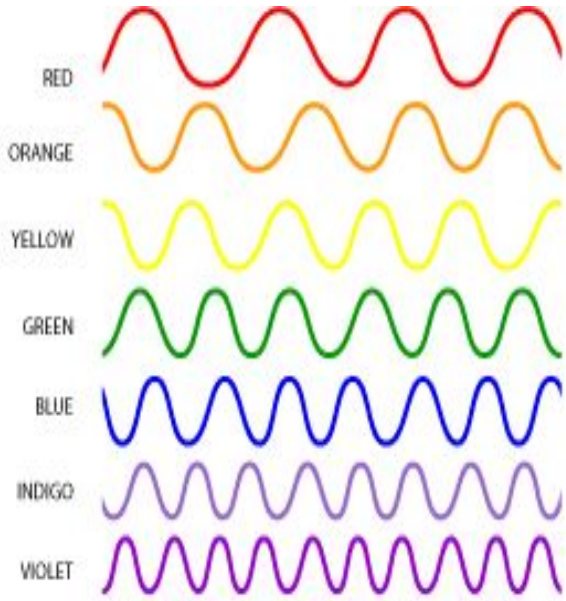
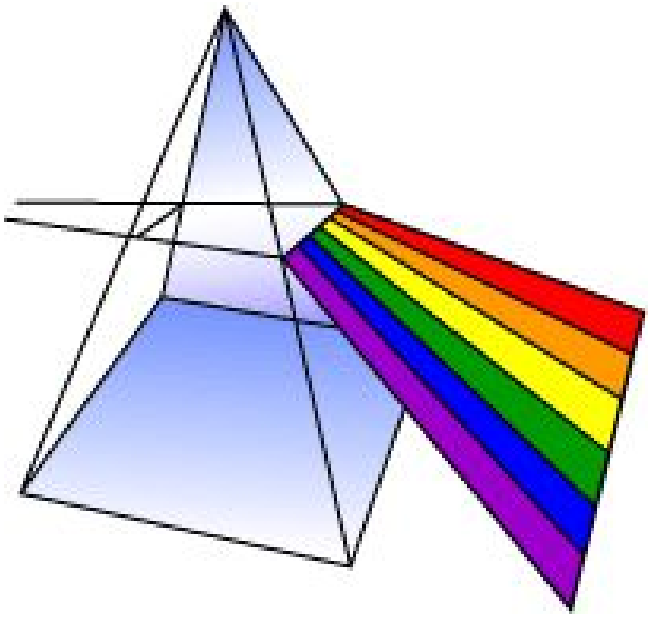
Chapters

What is the Electromagnetic Spectrum?

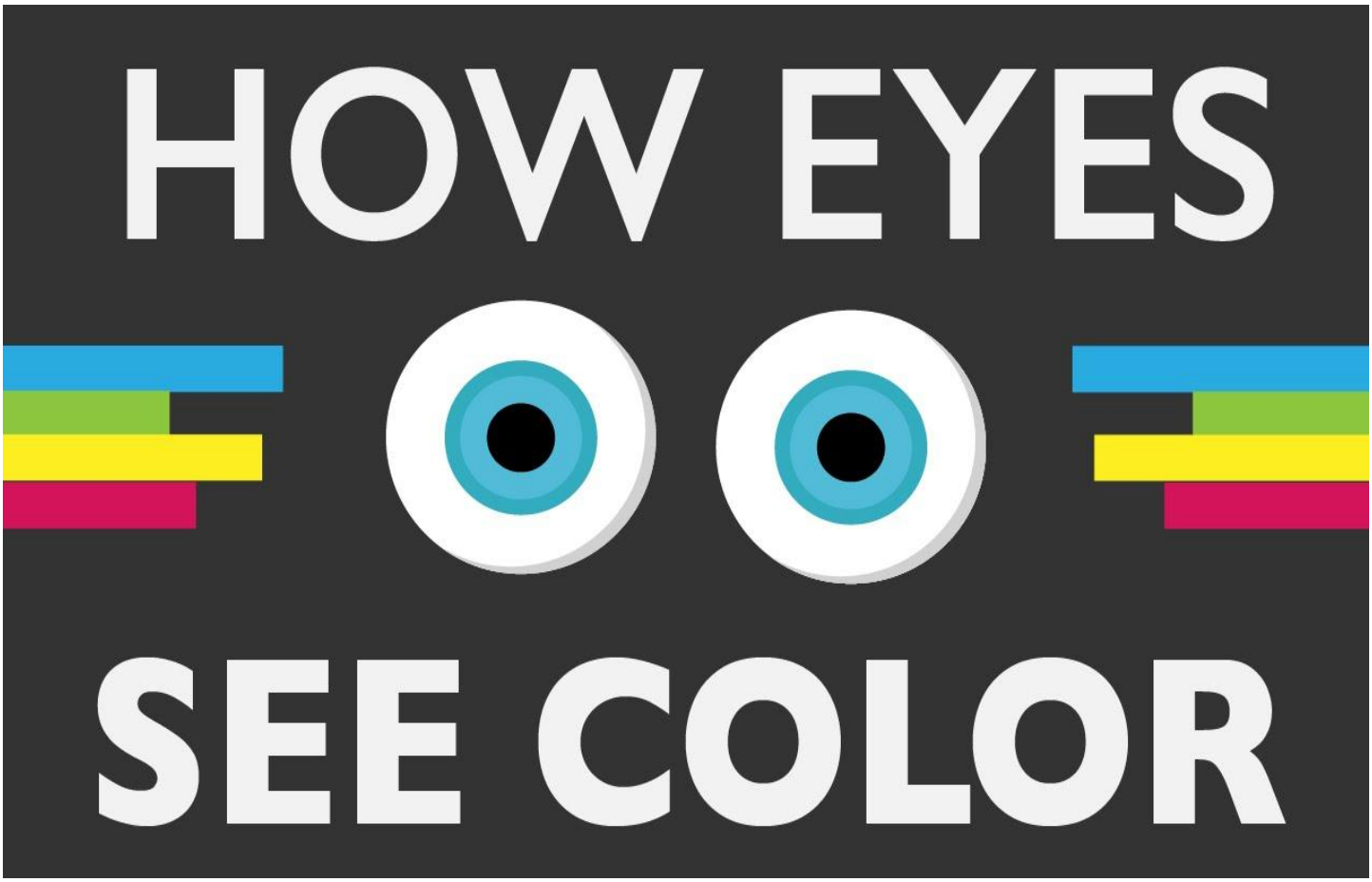
Electromagnetic spectrum is the collective term for all possible frequencies of electromagnetic radiation.

Types of electromagnetic radiation





For information on how eyes see color watch the short video linked below



Click here to watch

How Does the Color of Light Relate to It's Frequency and Wavelength?

The human eye and brain both help us see frequency of light as a certain color.
The frequency of light increases from red to violet. Wavelength decreases from red to violet. Low frequency have a longer wavelength. Waves with high frequency have a shorter wavelength. The color of light is determined by the frequency of the light wave.
Wavelength and frequency of light are closely related. The higher the frequency, the shorter the wavelength all light waves move through a vacuum at the same speed number of wave crests passing by a given point in one second depends on the wavelength.

Types of Electromagnetic Radiation

Gamma radiation

Contains extremely high-frequency of electromagnetic radiation and consists of high-energy photons (the quantum of all forms of ER).

Radio waves

They use antenna to pick up radio waves that travel through the air.

Ultraviolet radiation

Another part of the electromagnetic spectrum is where wavelengths are just shorter than those of ordinary, visible violet light but longer than those of x-rays

Infrared radiation

Infrared alone refers to energy in the region of the electromagnetic radiation spectrum. Wavelengths longer than those of visible light, but shorter than those of radio waves.

Terahertz radiation

A tremendously high frequency.

Visible radiation

Is one type of ER and is seen unlike other radiation.

X-ray radiation

Microwave radiation

How Does a Surface of a Material Affect the Color of a Material?

Materials take some wavelengths of light and reflect other wavelengths reflected light determines color. The light strikes non-transparent surface it will absorb some frequencies of light and reflect others.

Frequencies of a surface absorbs and reflects determined by the chemical makeup of the surface.
The frequency of light that is reflected from a surface determines the color of that material.

To watch a short explanation on the Electromagnetic Spectrum see link below

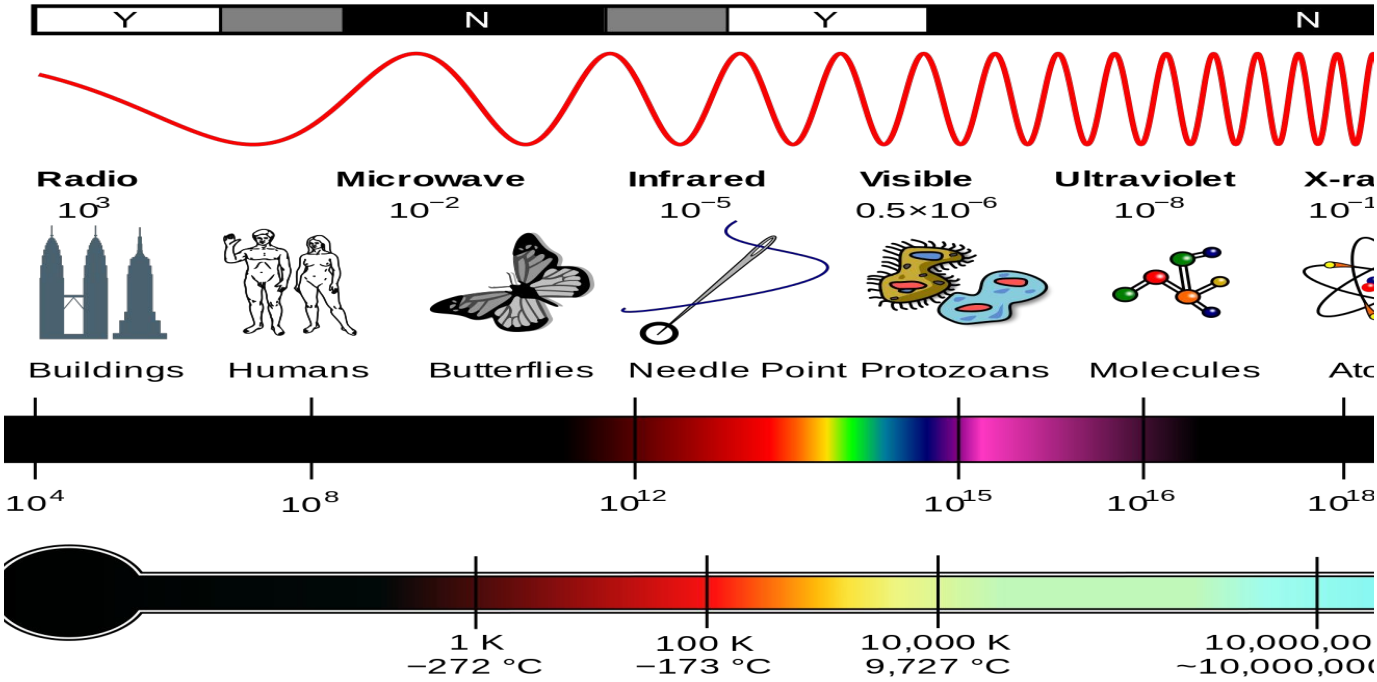
Click Here to Watch

Real Life Application

In daily life we see Electromagnetic Radiation everywhere. As you turn on the radio a part of Electromagnetic Radiation is being used and when you turn on the microwave it also is using a part of it. Or even when you see light.

For an interactive Electromagnetic Spectrum

Click Here



Work Cited

http://science.hq.nasa.gov/kids/imagers/ems/ems.html

http://www.scienceclarified.com/everyday/Real-Life-Physics-Vol-3-Biology-Vol-1/Electromagnetic-Spectrum.html

https://www.youtube.com/watch?v=KoUyMuMVJQY

https://www.youtube.com/watch?v=pMIdzlLycTY

https://app.discoveryeducation.com/me/students#v=tab1

(Chapter 1.5)