

Module 3: Sensation and Perception
Topic 2 Content: How Light Works

Introduction



HOW LIGHT WORKS

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EDUCATION

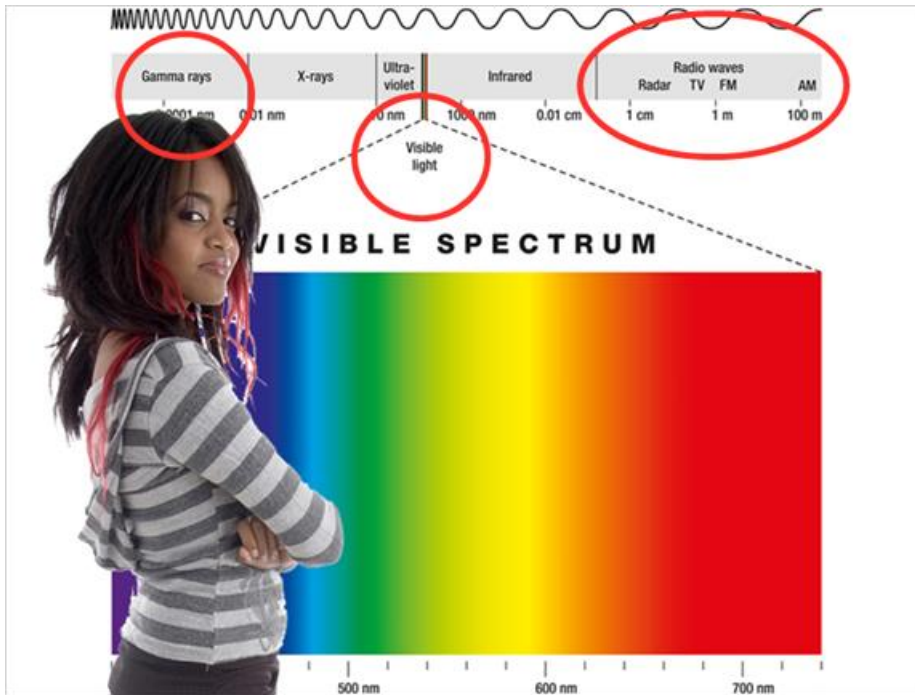
Click the *NEXT* button to continue.

Click the **NEXT** button to explore how light works.

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Electromagnetic Waves

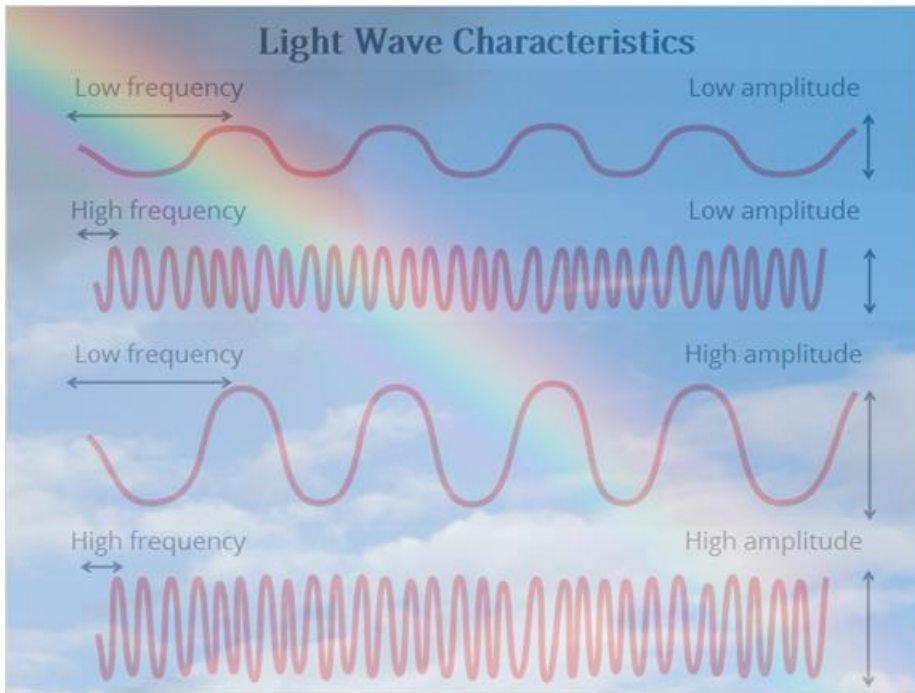


When considering how vision works, think of light in the form of waves. In particular, electromagnetic waves are all around you. In fact, whether you perceive it or not, you are probably being hit with many types of electromagnetic waves right now. Longer waves, like radio and television waves, pass through you, while shorter waves, like gamma rays, hit you. Because the energy from these light waves is so low, you are not affected by them unless the light enters your eyes rather than hitting your skin. In this case, the light contributes to your sight.

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Light Properties

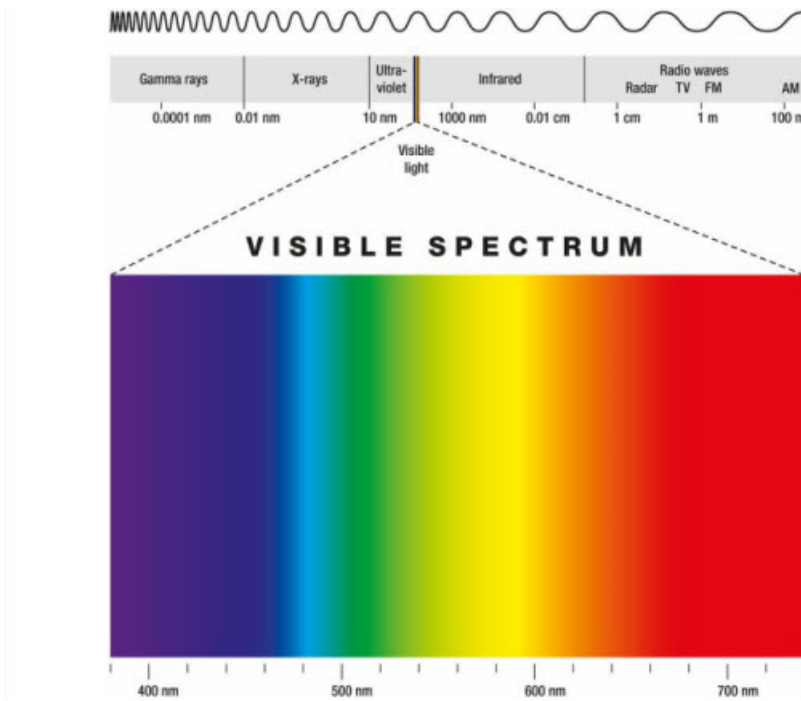


Light waves have two key properties: *frequency*, which you experience as hue or color, and *amplitude*, which you experience as brightness. For example, when you see a rainbow, you are actually seeing the light of the sun comprised of many different wavelengths, and separated out into streams of light with varying wavelengths.

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Light Frequencies



The color of visible light with the longest frequency, or distance between peaks, is red. Red is about seven hundred nanometers, or billionths of a meter. The color of light with the shortest frequency humans can perceive is purple, or violet. Violet is about four hundred nanometers. Waves with frequencies longer than red light are called “infrared” light. Waves with frequencies shorter than violet are called “ultraviolet” light. If you were a bumblebee, you would be able to perceive ultraviolet light, but would not be able to see red lights like humans.