



# Color And The Electromagnetic Spectrum

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# Table of Contents

[Chapter 1- Light](#)

[Chapter 2- Wavelengths And The Speed Of Light](#)

[Chapter 3- Color](#)

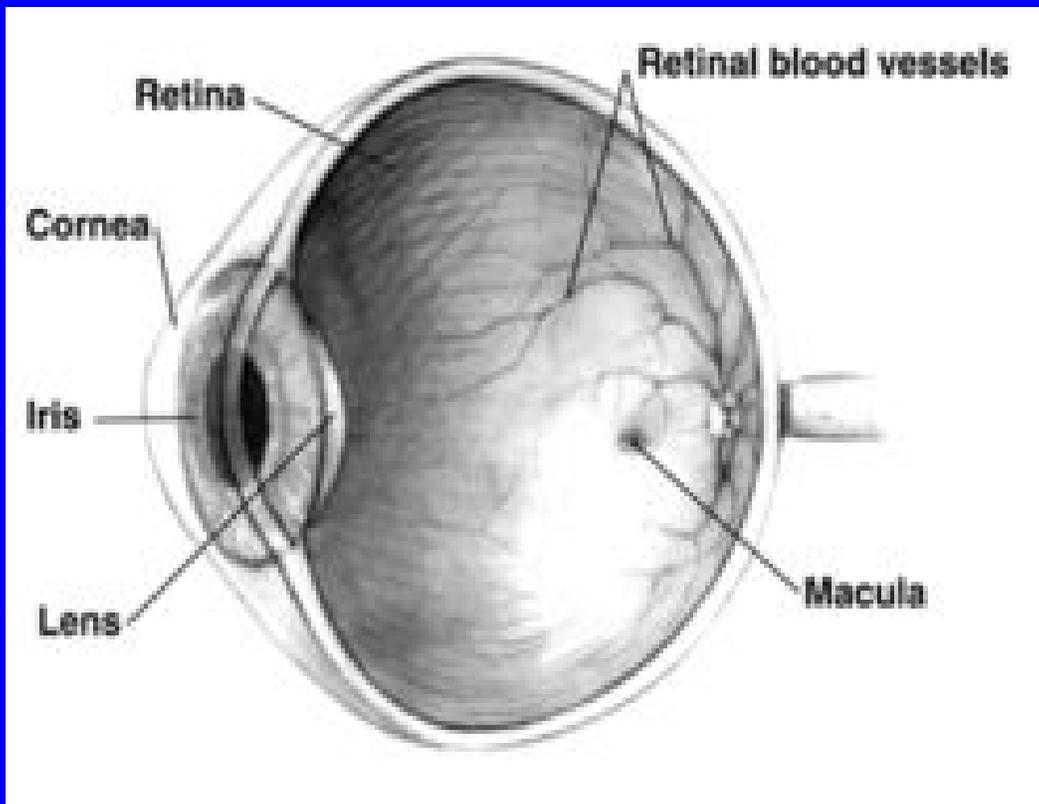
[Chapter 4- The Light That The Eye Cannot See](#)

# Chapter 1

## How The Eye Perceives Light

When light enters the eye, it passes through the cornea first. After it will proceed to the retina (a light sensitive layer of tissue in the eye).

Two types of cells are located in the retina - rods and cones. Rods control vision in low light, cones handle color vision and detail. When light comes in contact with these two types of cells, a series of chemical reactions occur.



# Chapter 2

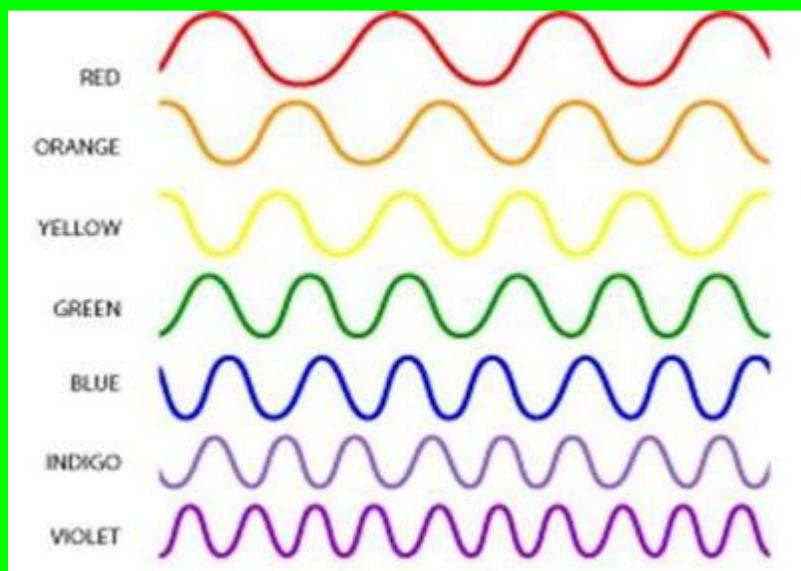
## Wavelengths and Light Speed

Wavelengths decrease from red to violet. Objects absorb some wavelengths of light and others are reflected. Electromagnetic radiation in this range of wavelengths is called visible light or simple light.

A typical human eye will respond to wavelengths from about 390 to 700 nm.

The colors bend at different angles because they travel at different speeds. Violet is bent the most because it is the slowest. Red is fastest because it doesn't bend much.

Light travels slower through glass and water than in air.



# Chapter 3

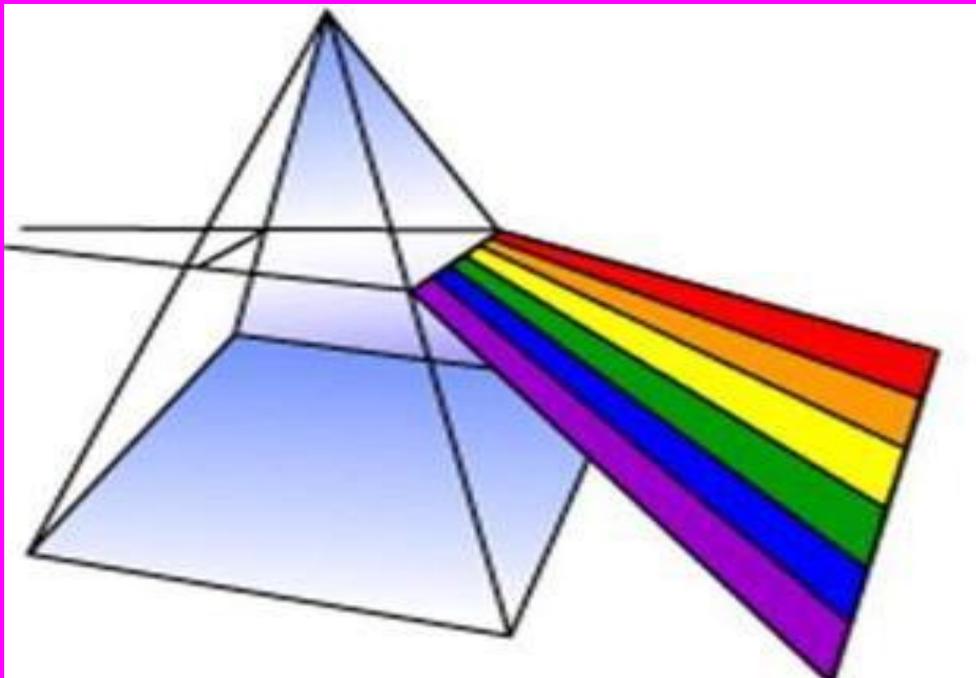
## Color

The three primary colors of light are red, green, and blue. (This is different from the primary colors of pigment which are red, blue, and yellow).

The visible spectrum is made up of seven colors which when combined makes white. Black is a total absence of light while white is every color combined. The reflected light determines the color.

For example, a banana peel mostly reflects wavelengths that correspond to a yellow color.

The spectrum does not contain all the colors that the human eye and brain can distinguish. Unsaturated colors such as pink, or purple variations such as magenta, are absent. These colors can only be made by a mix of multiple wavelengths.



# Chapter 4

## The Light That The Eye Cannot See

The visible spectrum which is a very small part of the electromagnetic spectrum, is the only part that can be seen with the naked eye. On either sides of the the visible spectrum are two rays that cannot be seen.

On the side just beyond violet on the electromagnetic spectrum, there is something called Ultraviolet radiation. it's rays are very damaging to the skin and can cause skin cancer.

On the other side it of red is infrared. it is heat energy.

