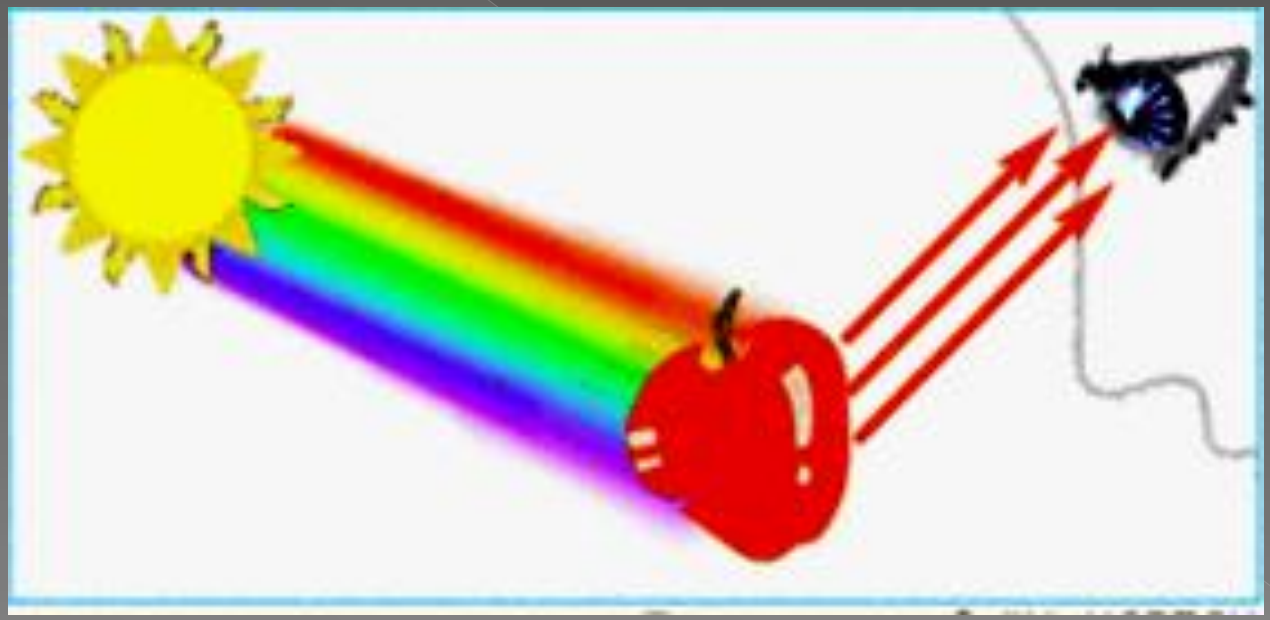
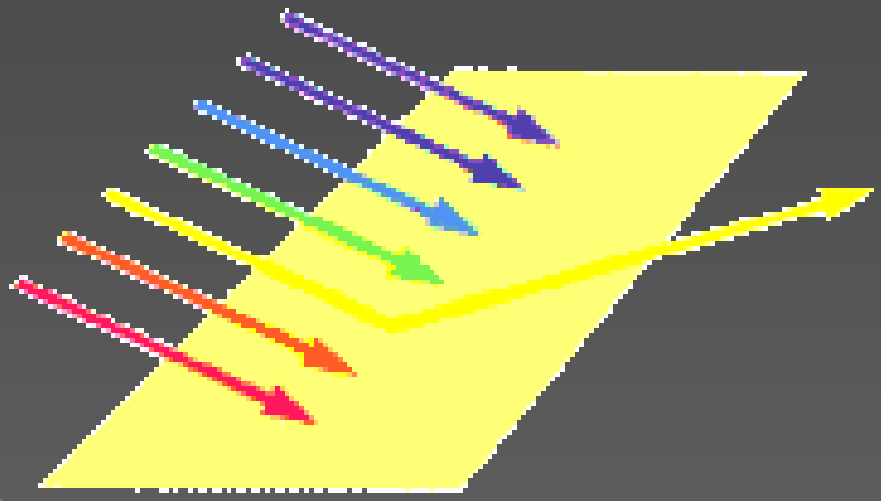
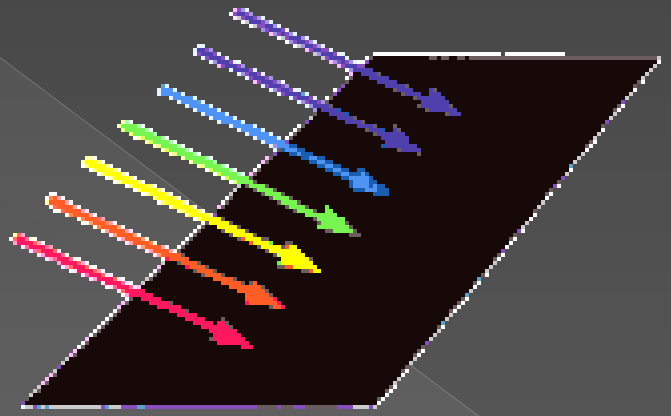
COLOR

We see the colors that are not absorbed.

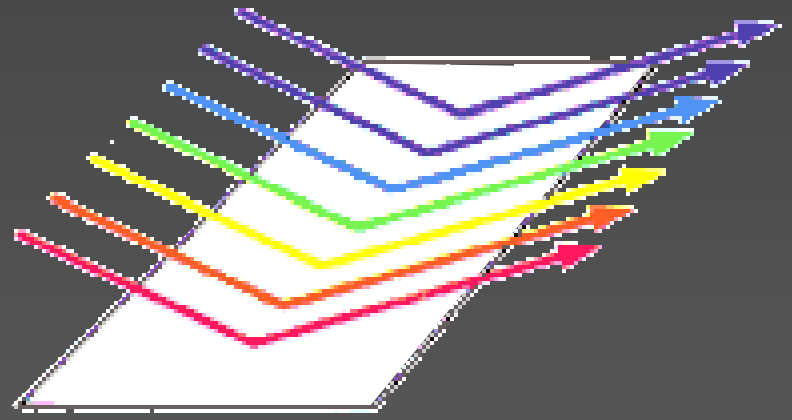
We see the reflected wavelengths.







An object that absorbs all the frequencies of light is seen as BLACK



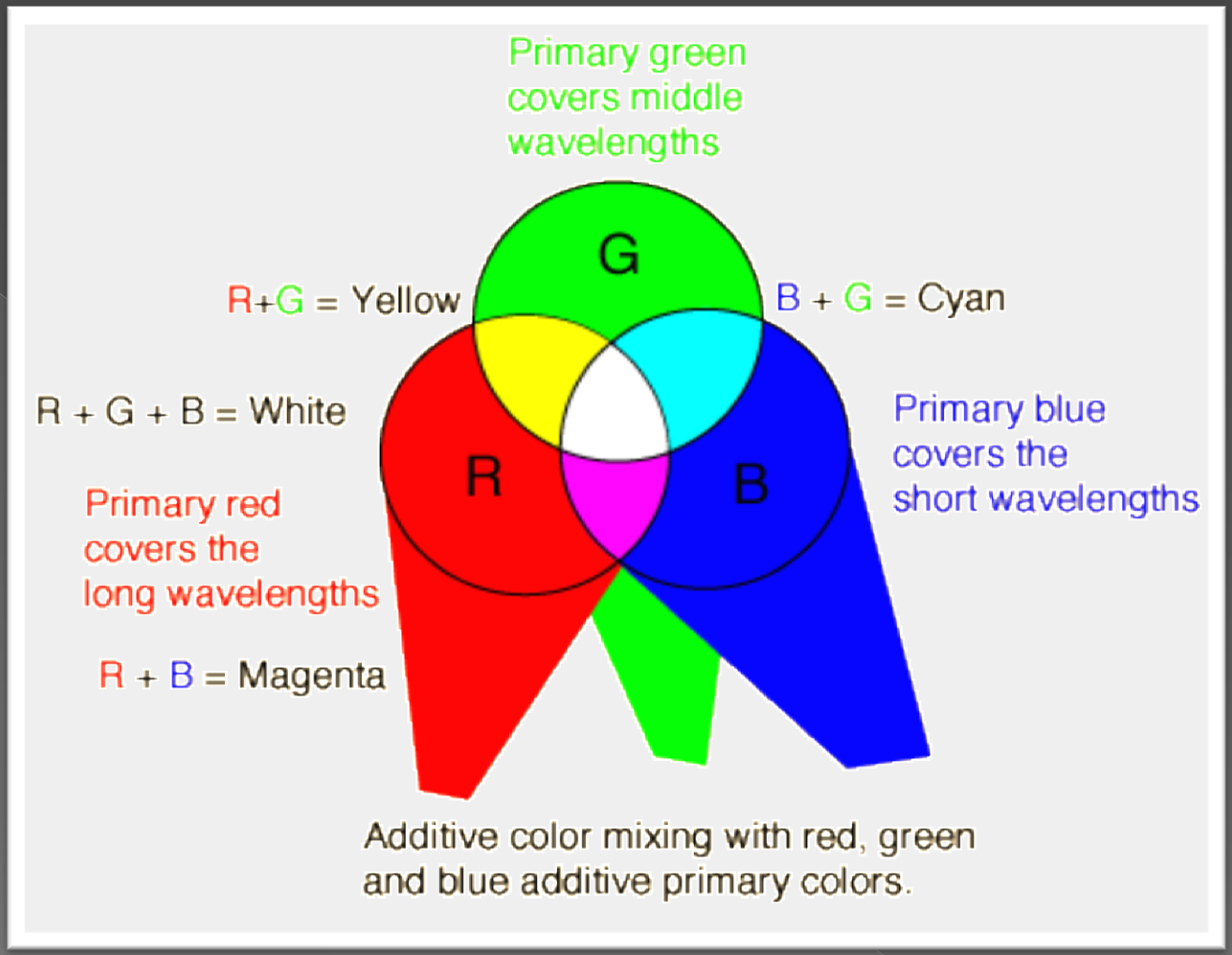
An object that reflects all the frequencies of light is seen as WHITE

Producing Color

Primary colors = Colors that cannot be created by mixing other colors.

Secondary color = created by mixing primary colors

LIGHT

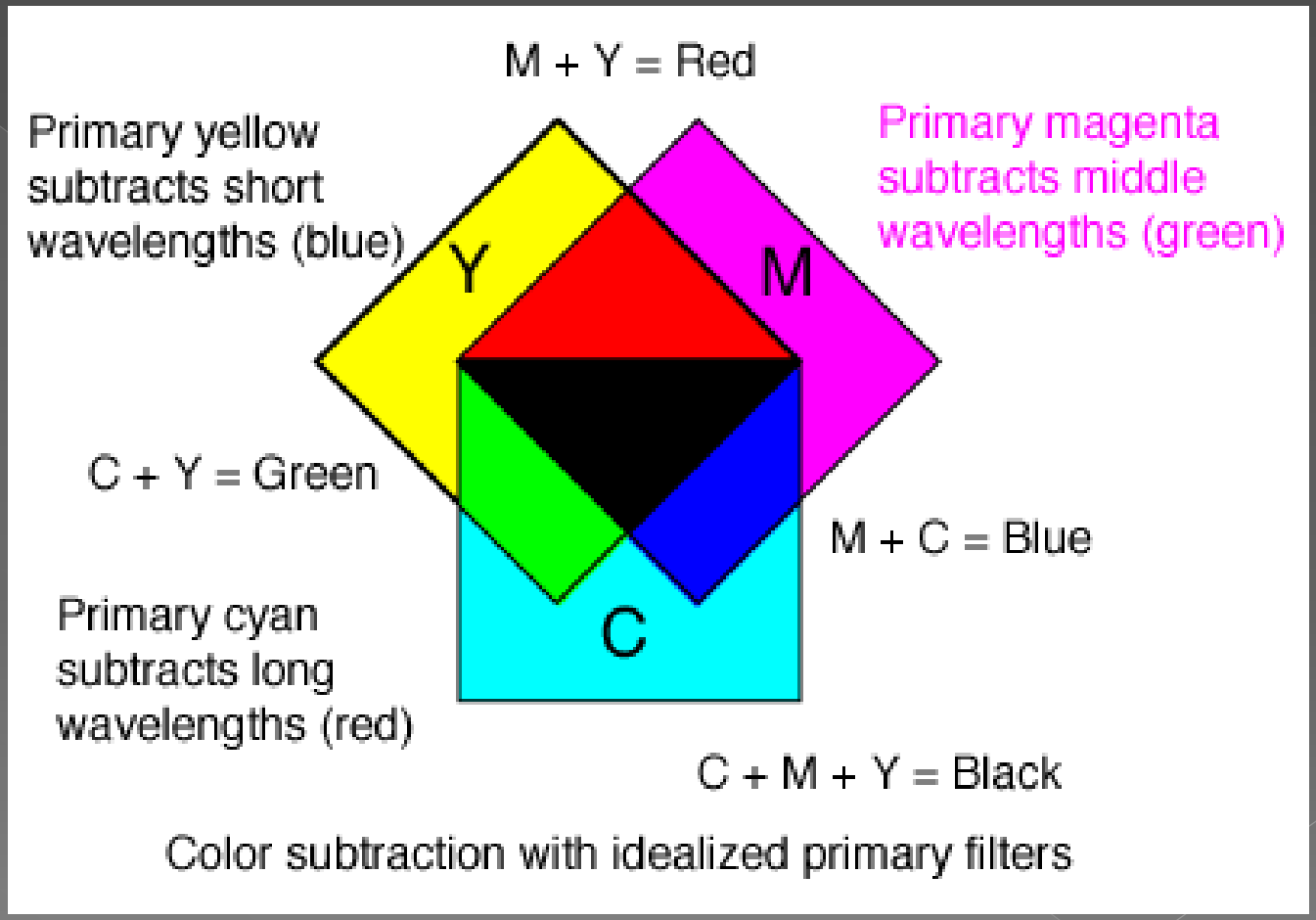


This type of color mixing is used in computer monitors, TV sets, and stage lighting.

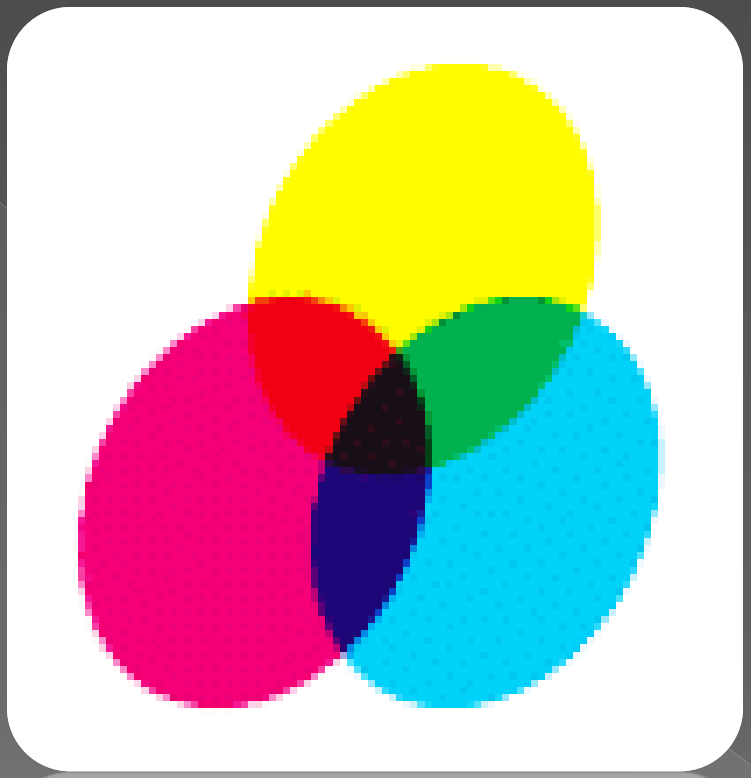
http://www.youtube.com/watch?v=JxwzoSMqq1U&feature=PlayL
4B61B3EBDD671135&playnext=1&index=13

http://javaboutique.internet.com/ColorFinder/

PIGMENT


M + Y = Red
Primary yellow subtracts short wavelengths (blue)
Primary magenta subtracts middle wavelengths (green)
Y
M
C + Y = Green
M + C = Blue
C
Primary cyan subtracts long wavelengths (red)
C + M + Y = Black
Color subtraction with idealized primary filters

Pigments or Light?

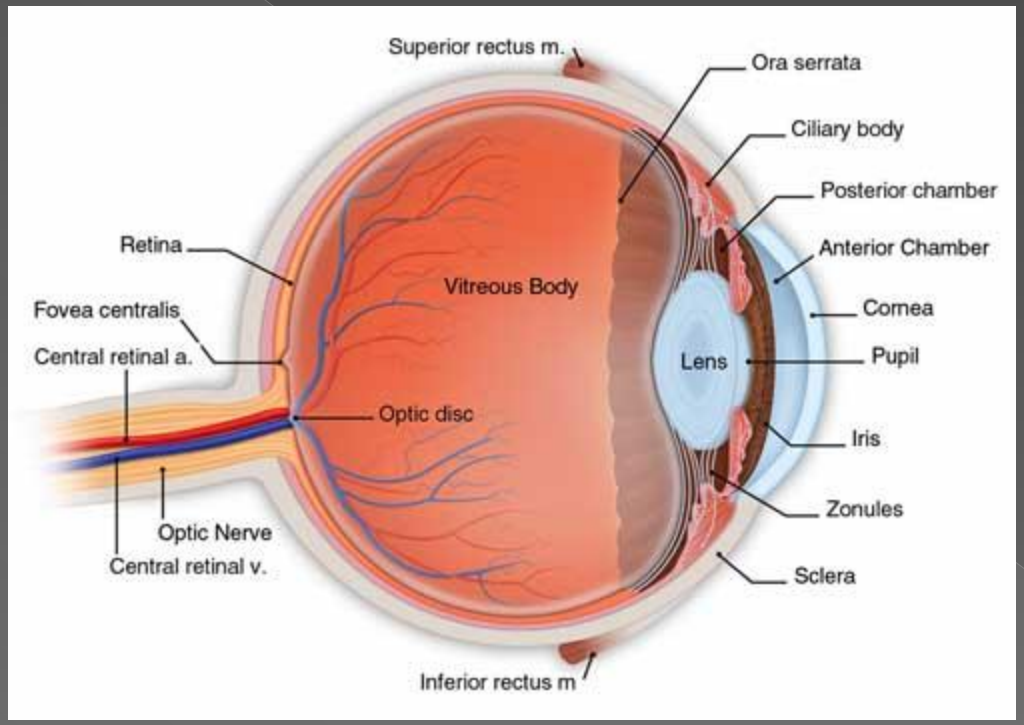


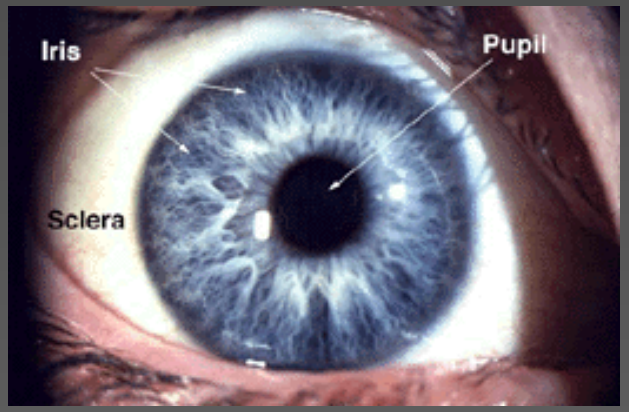
Pigment is Correct!!!!

Pigments or Light?

Light Is Correct!!

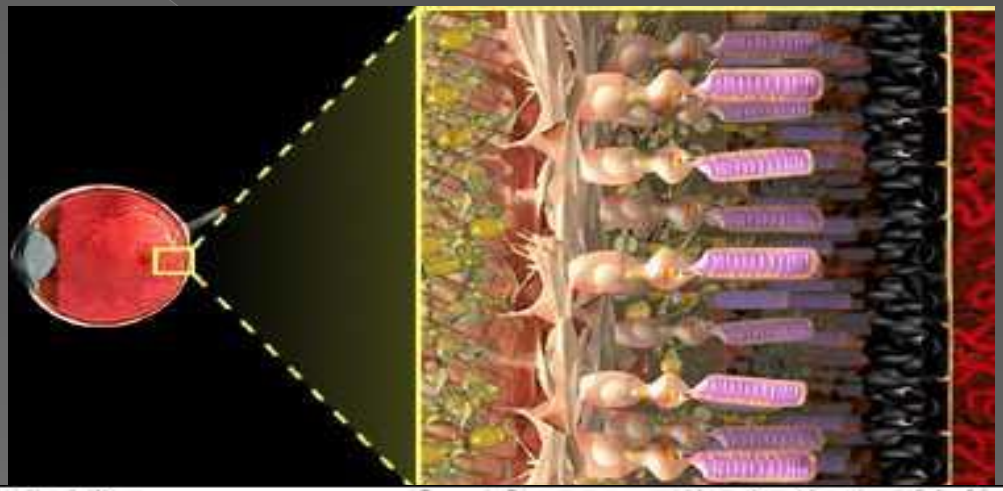
The Parts of the Eye

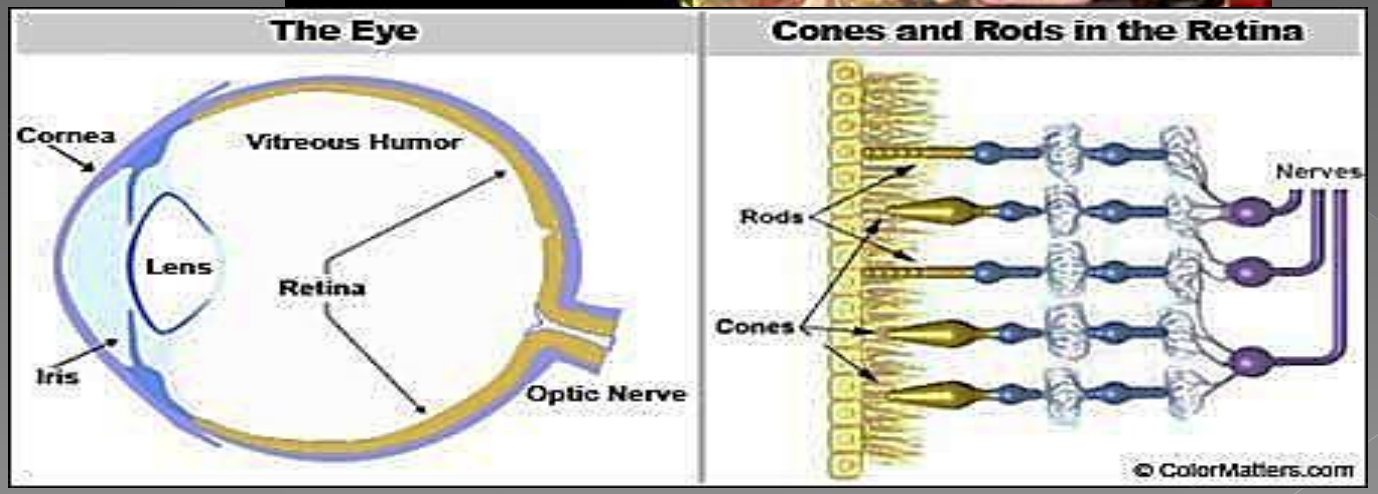




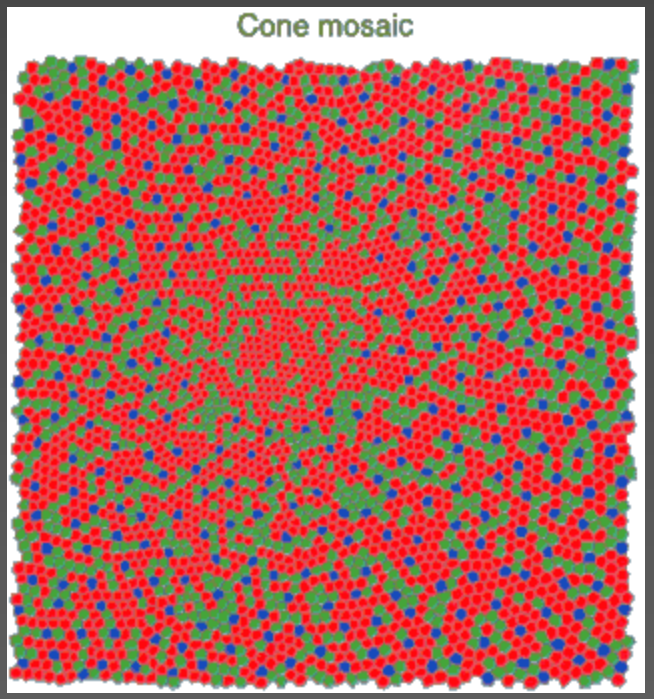
Retina **photoreceptors cells**

- **RODS**- 120 million, light sensitive
- **CONES** - 6 to 7 million, color sensitive

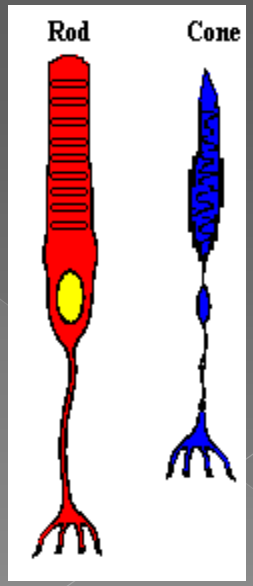


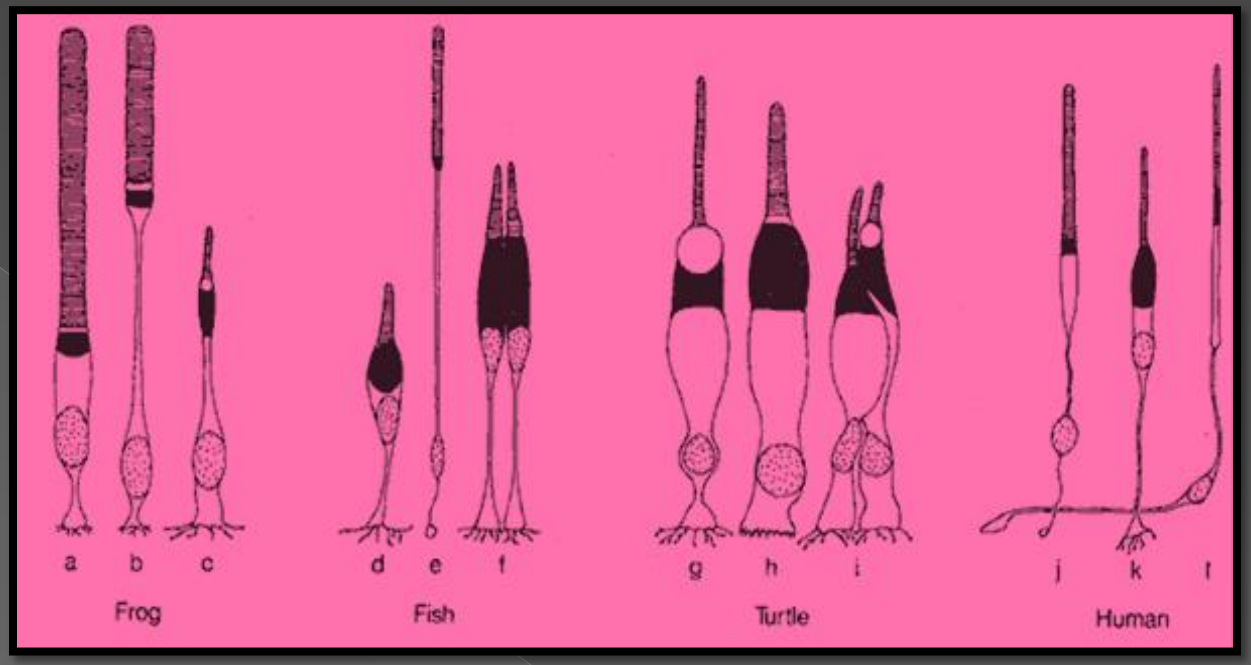


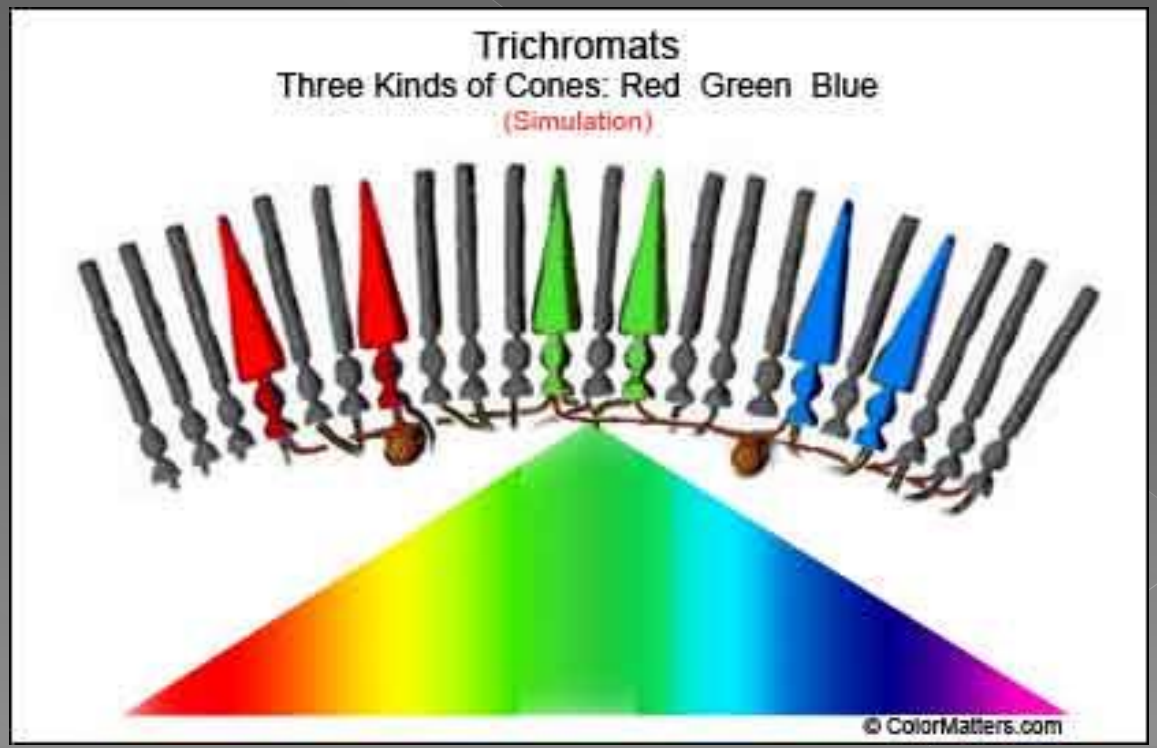
- **Cones-** 64% "red" cones
  32% "green" cones
  2% "blue" cones



- **Rods-** dark-adapted for night vision, better motion sensors and peripheral vision.




a b c
Frog
d e f
Fish
g h i
Turtle
j k l
Human


Trichromats
Three Kinds of Cones: Red Green Blue
(Simulation)
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Refraction
= light rays bend

Concave lens diverge
Convex lens converge