How do we see?

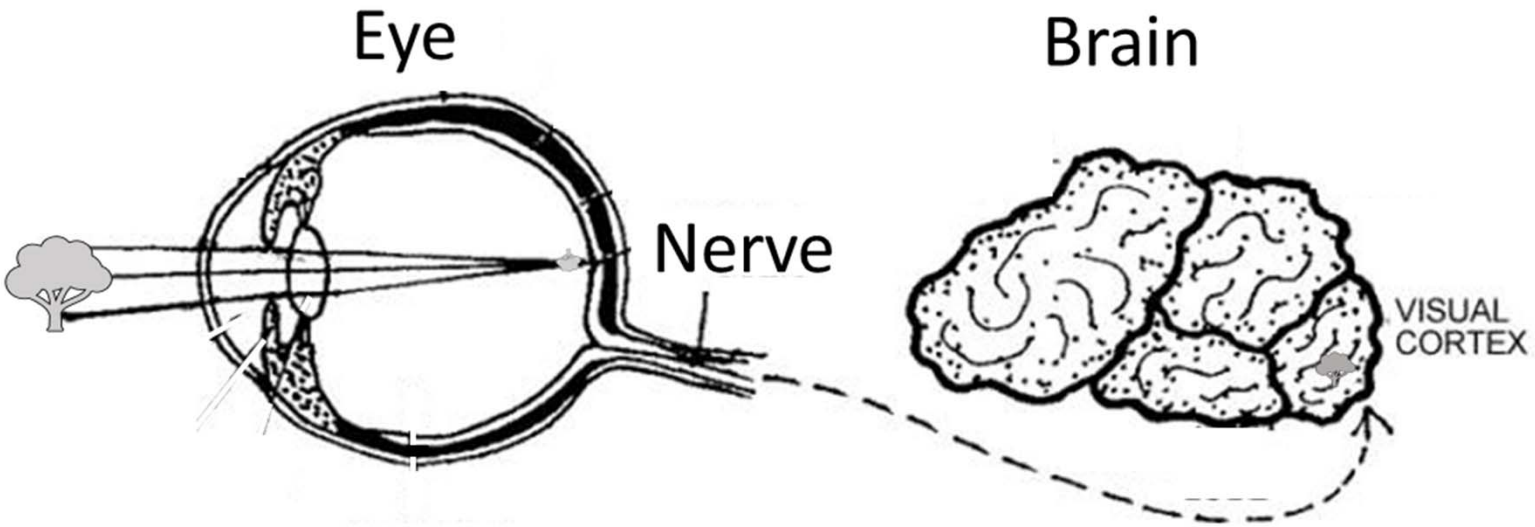
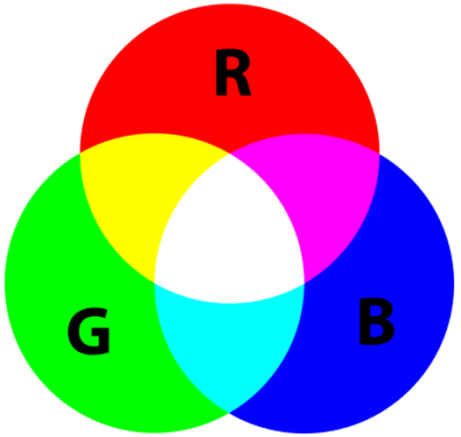


Image of our visual system

How do we see color?

1. Cone cells register color

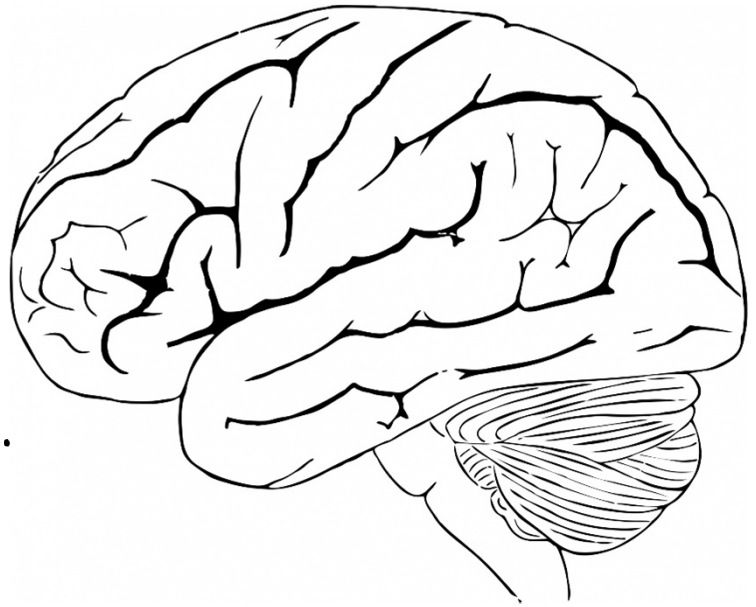
2. Combining colors results in a spectrum of colors



Role of the brain

1. The brain receives signals from both eyes.

2. The brain reconstructs an image. It uses assumptions while reconstructing an image.



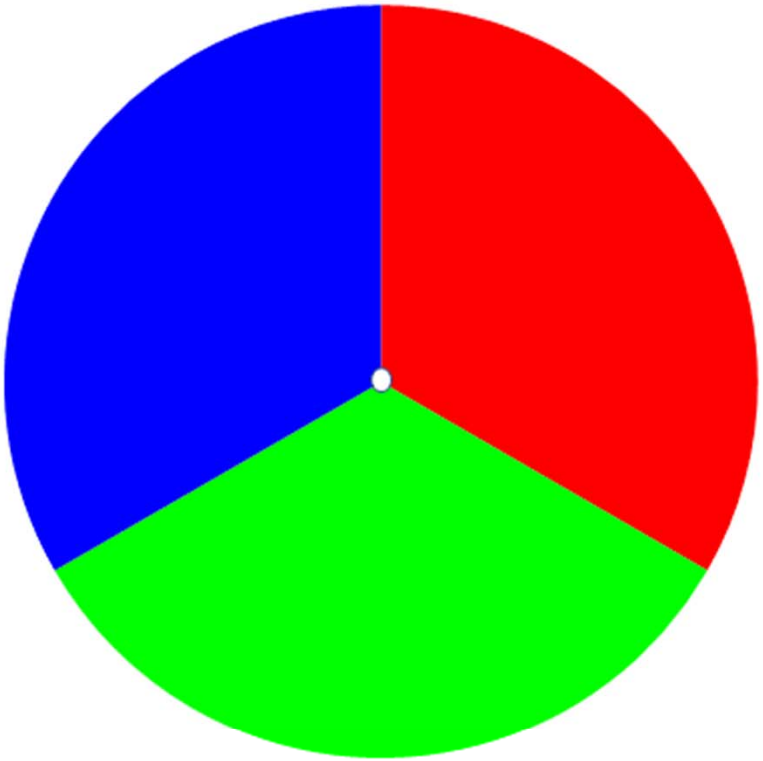
Experiment 1: Afterimage

1. Observer: Stare at the center of the color wheel on the next slide for 30 seconds.
    Timer: Inform when 30 seconds has passed.

2. Observer: After 30 seconds, instantly look at the white space next to the color wheel.

3. Observer: Record your observations.

4. Switch roles.



Experiment 2: Looking Through a Tube

1. Roll a piece of paper into a tube.

2. Look through the tube with one eye. Hold the other hand against the tube. Look straight ahead with both eyes.

3. Notice what you see.

4. Closing one eye at a time, notice what each eye separately sees.

5. Switch eyes, holding the tube in front of the other eye.

6. Record your observations.

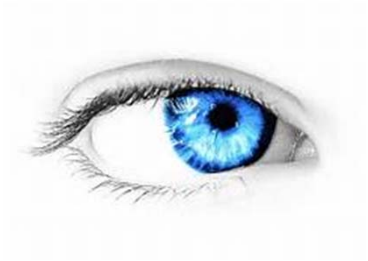
Analyze your data

For each experiment:

1. Why would you call what you saw an optical illusion?

2. Formulate and defend an explanation for your observations.

Only go to next slide after formulating your own explanations!



Explanation

Experiment 1: Afterimage

Cone cell fatigue: the cones of the original color did not fire, yielding an afterimage of the same size and form, but with the complementary color.

Experiment 2: Looking Through a Tube

The brain assumed both eyes were looking at the same object while processing visual information received from the eyes. As a result, you see a hand with a hole.