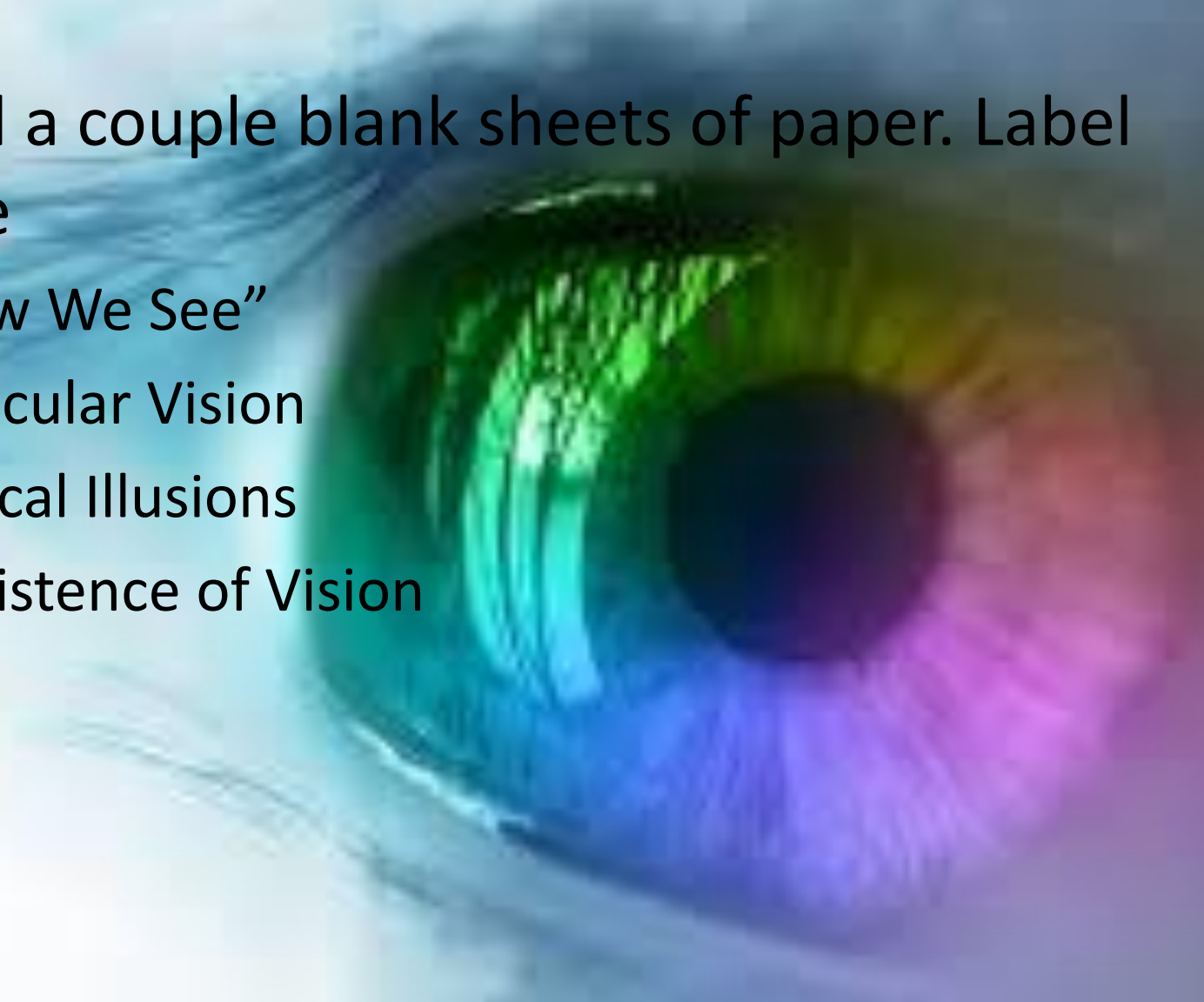


Chapter 11 Lesson 4

THE EYE

Eye Openers Museum of Vision

- You need a couple blank sheets of paper. Label each side
 - “#1 How We See”
 - #2 Binocular Vision
 - #3 Optical Illusions
 - #4 Persistence of Vision



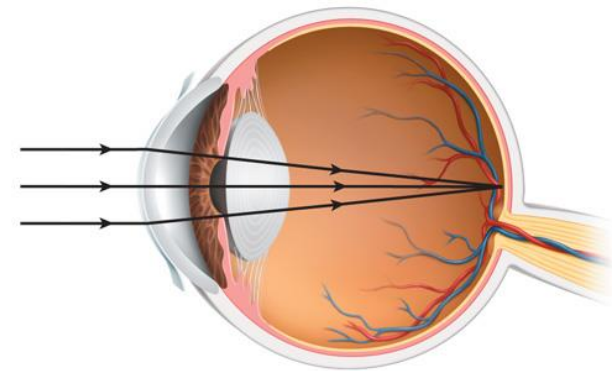
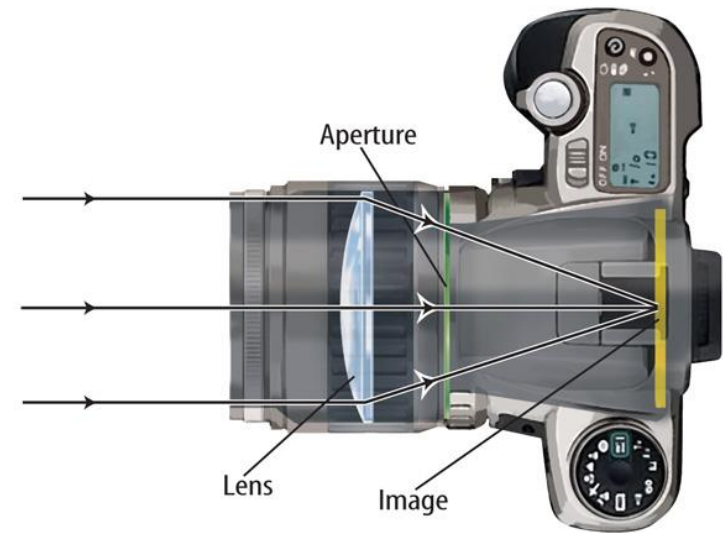
#1 How we See

- On Packet...



How the Eye Forms an Image

- As light enters your eye, lenses in your eye focus light to produce an image on the back of your eye.
- Special cells at the back of the eye convert the image into electrical signals that travel to your brain.



Cornea

- Light enters your eye through the **cornea**, which is a clear area of the sclera—the outer layer of the eye.

Brain
POP™

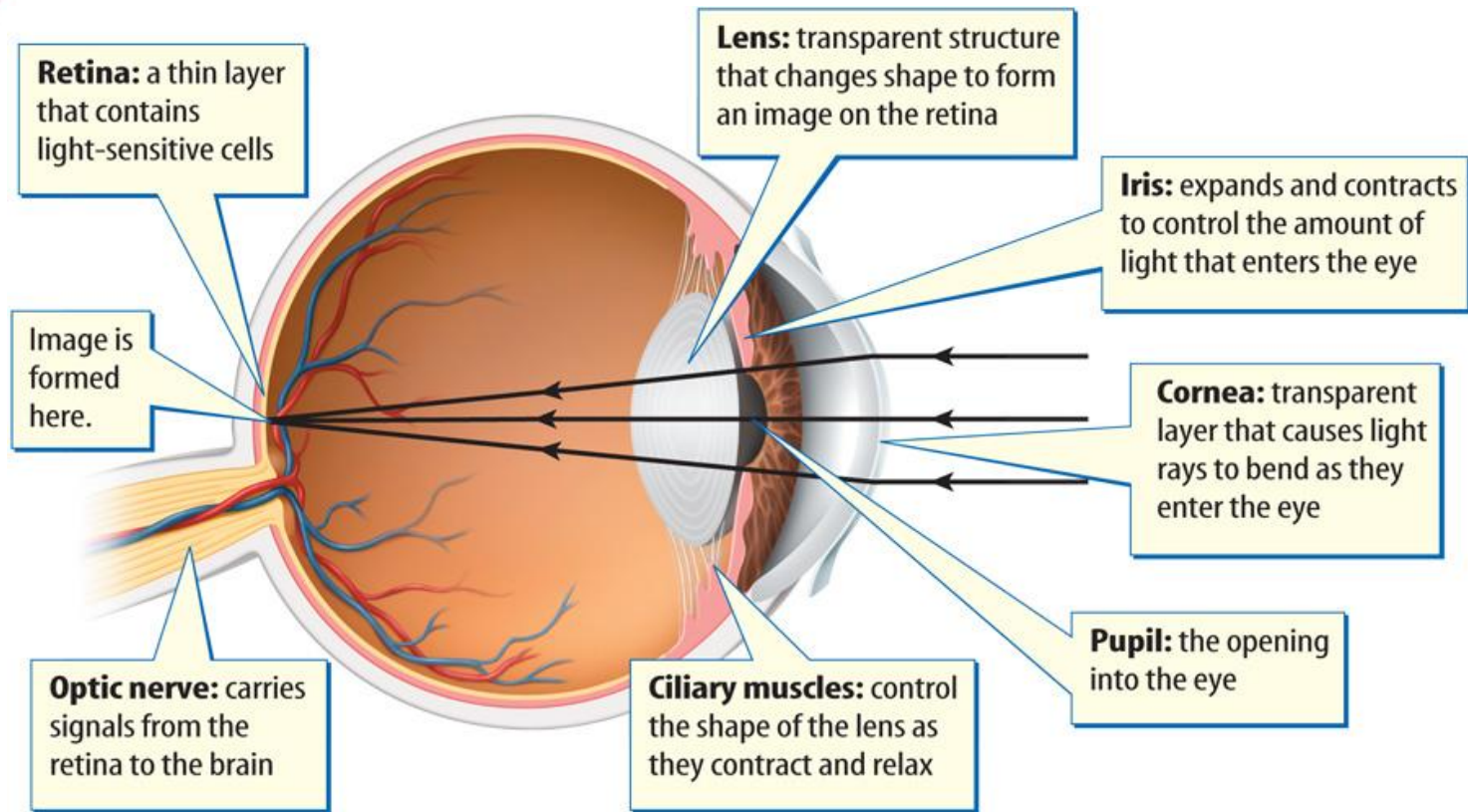
[The Eye](#)

Click here to learn more!



Resources





Interactive
Table



Parts of the Eye



Resources



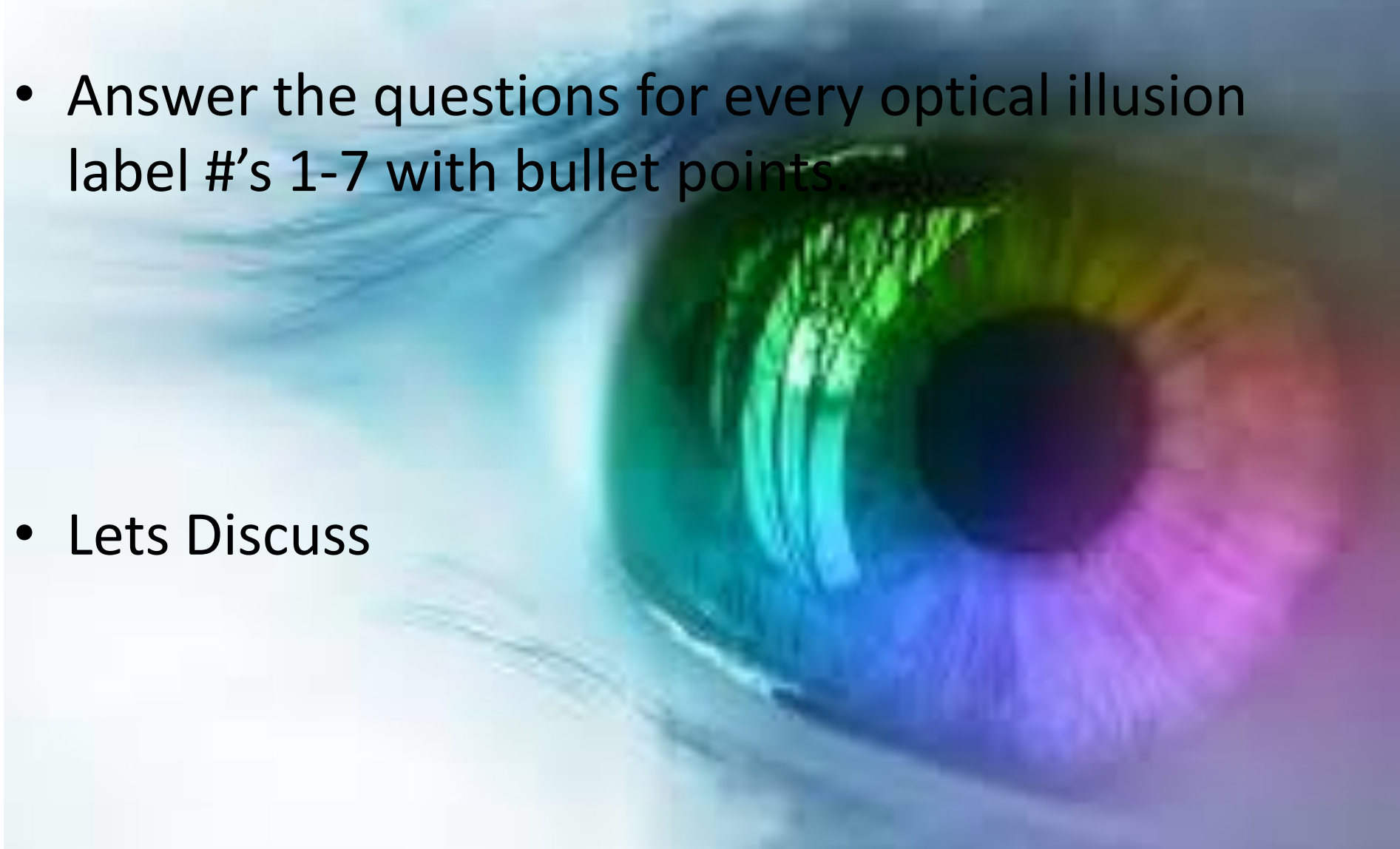
#2 Binocular Vision

- Activity 1: “The Finger Dance”
 - Explain what you saw
 - Why does this happen?
- Activity 2: “hole--ee Hand”
 - What did you observe?
 - Why does this happen?
- Activity 3: “Blind Spot”
 - What happened?
 - Why did that happen?



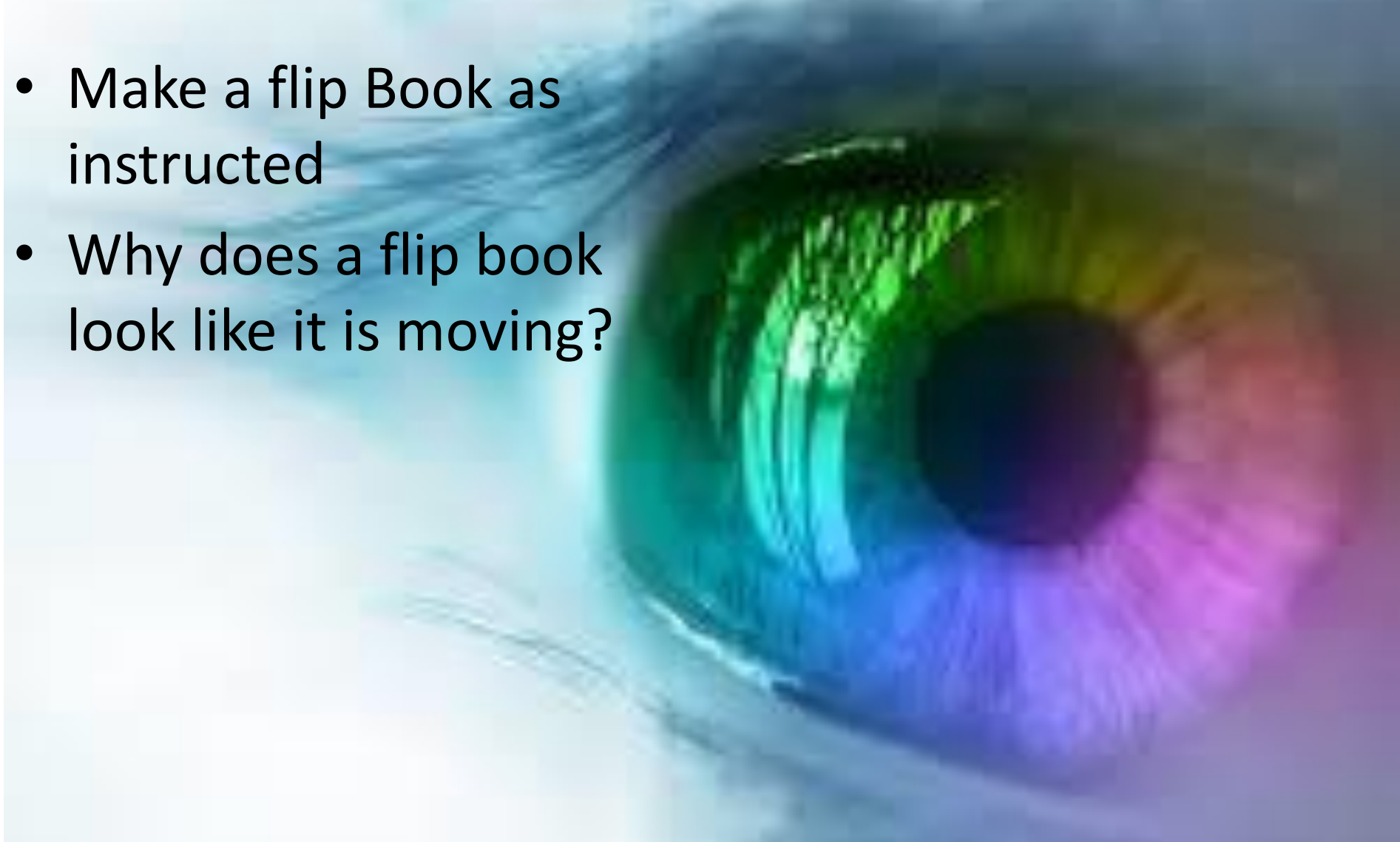
#3 The Eye-Brain Connection

- Answer the questions for every optical illusion label #'s 1-7 with bullet points.
- Lets Discuss



#4 Persistence of Vision

- Make a flip Book as instructed
- Why does a flip book look like it is moving?



Welcome To 7th grade Life Science!

Mrs. Winters

Hot Sync

Materials Needed

Today

Please take these materials out of your backpack.

- Pencil
- Eye Opener's Museum

Answer the following in complete sentences.

Wednesday 4/2/14

List and describe the function of as many parts of the eye that you can think of. (EX: eye lids, lashes, pupil....Etc...)

Welcome To 7th grade Life Science!

Mrs. Winters

Hot Sync

Materials Needed

Today

Please take these materials out of your backpack.

- Pencil
- Eye Opener's Museum

Answer the following in complete sentences.

Thursday 4/3/14

What part about the eye and seeing interests you the most and why? (5 sentences)

Welcome To 7th grade Life Science!

Mrs. Winters

Hot Sync

Materials Needed

Today

Please take these materials out of your backpack.

- Pencil
- Chapter 11 Lesson 4 Workbook Packet.






Answer the following in complete sentences.

Friday 4/4/14

**Please pass your
hotsyncs in 😊**

11.4 The Eye and Vision

LESSON Vocabulary

-  cornea
-  pupil
-  iris
-  retina
-  pigment



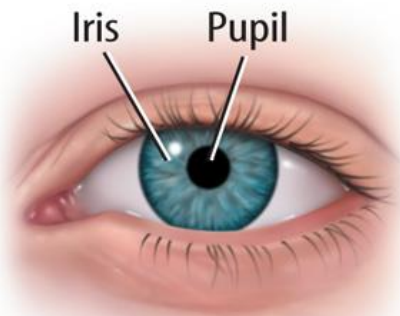
The innerworkings of the eye

- <http://www.youtube.com/watch?v=gvozcv8pS3c>

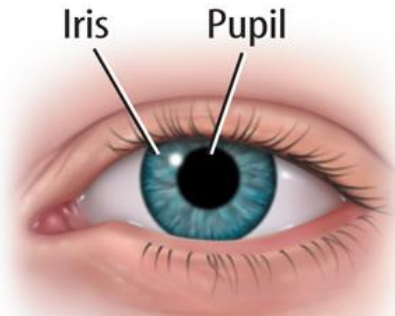


Iris

- The **pupil** is the dark opening into the interior of your eye.
- The pupil is surrounded by the **iris**—the colored part of your eye behind the cornea.



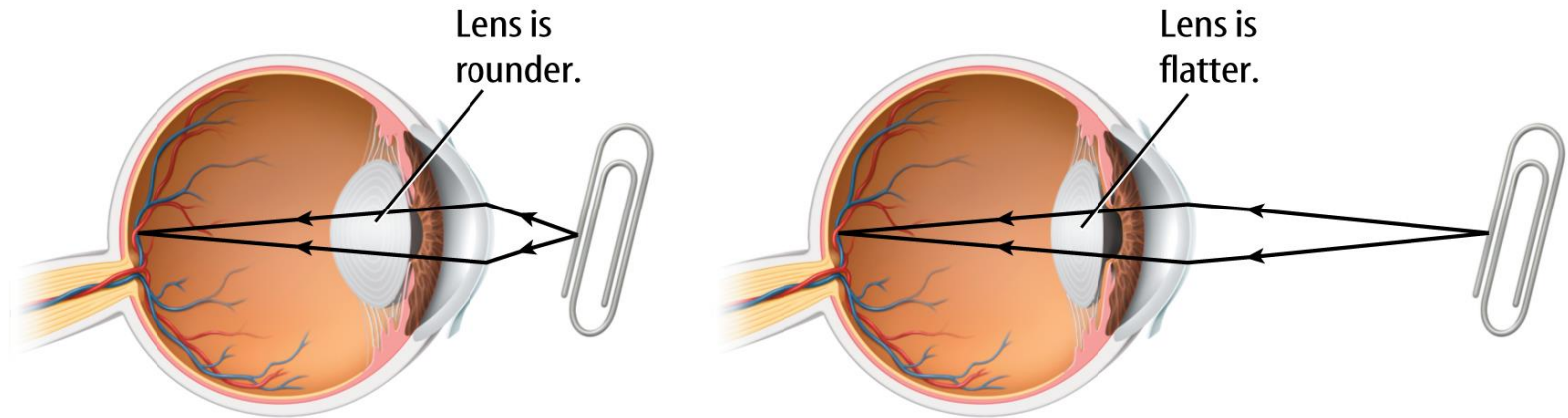
The iris expands
in bright light.



The iris contracts
in dim light.

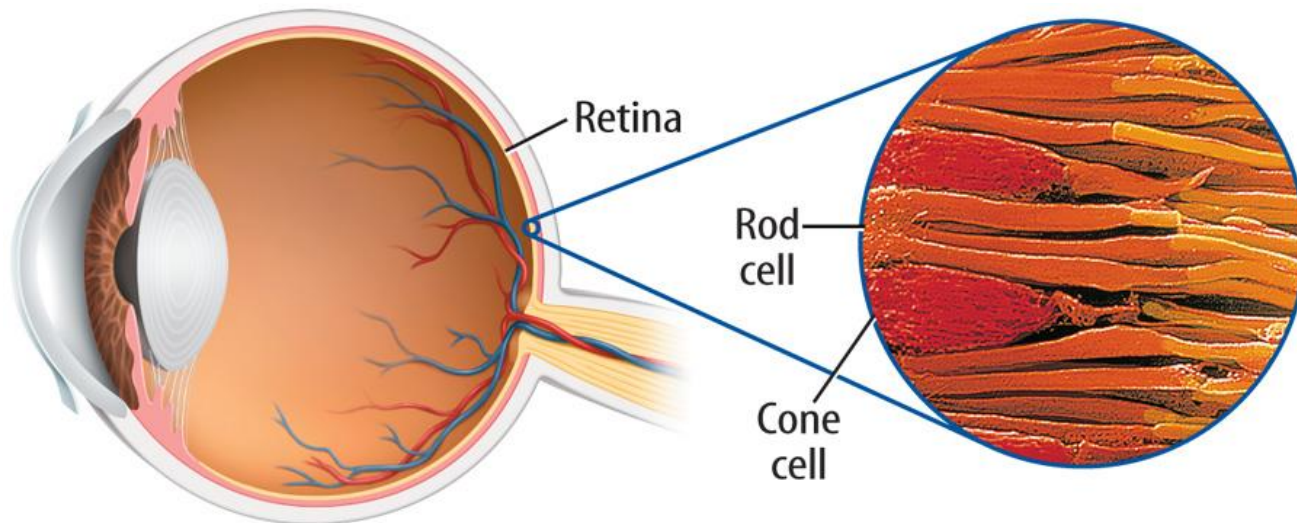
Lens

- The lens of your eye is convex and flexible.
- The ciliary muscles attached to the lens change its shape depending on the distance of the object being looked at.



Retina

- The **retina** is a sheet of light-sensitive cells in the back of the eye.
- Rod cells respond to dim light and cone cells enable you to see colors.



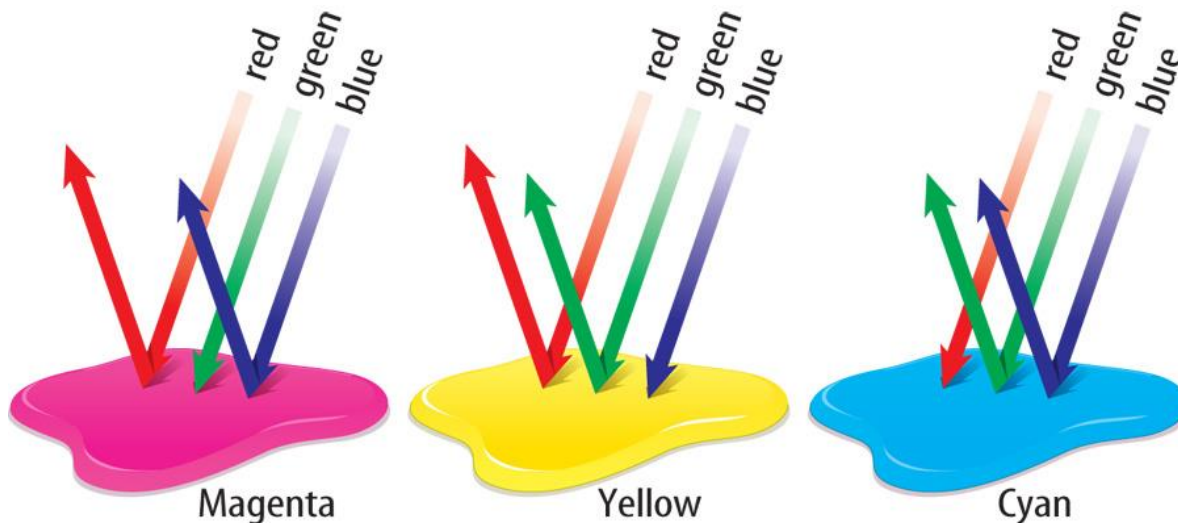
Seeing Color

- The response of cone cells to different wavelengths of light cause you to see objects as having color.
- Three types of cone cells:
 - One responds to the wavelengths of red and yellow light, causing you to see red.
 - One responds to yellow and green light, causing you to see green.
 - One responds to blue and violet light, causing you to see blue.



Pigment Colors

- A **pigment** is a material used to change the color of other materials or objects.
- The color of a pigment depends on the wavelengths of the light it reflects.



Pigment Colors (cont.)

Concepts In Motion

[Reflecting Light](#)

Click here to view!



Resources



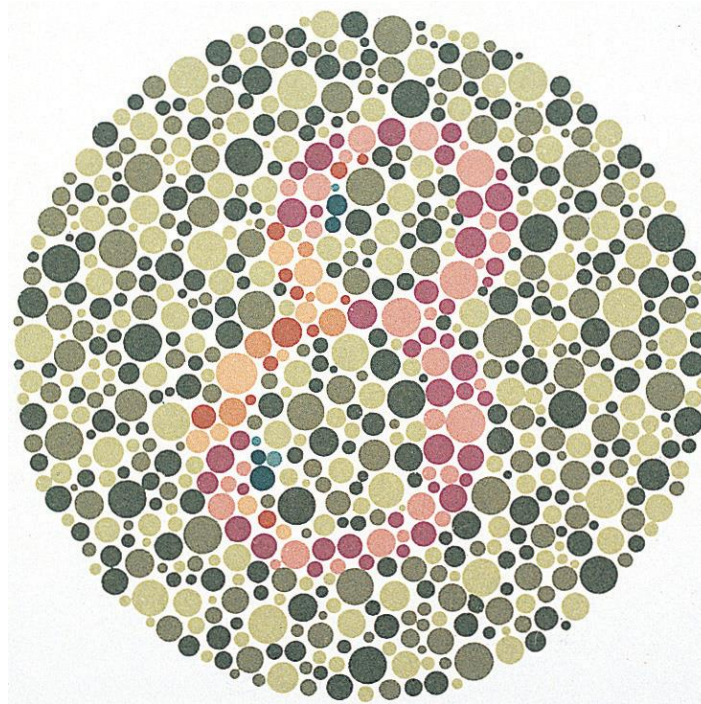
Color Printing

- The pictures in magazines are formed by many tiny dots of color.
- Usually, the primary colors of pigments, as well as black, are used.



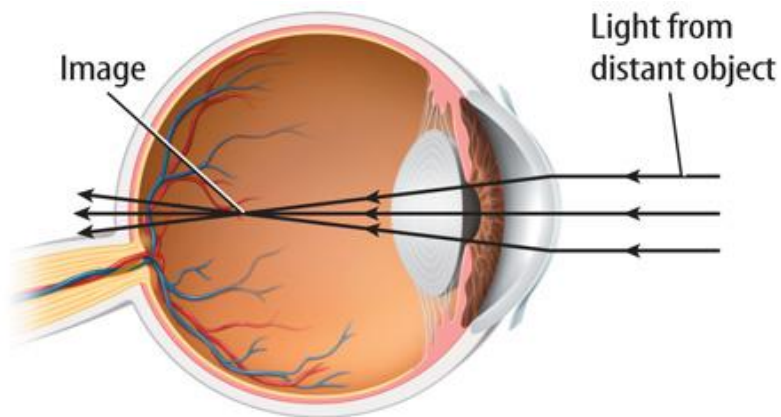
Common Vision Problems

- Color deficiency: either lack red or green cones, or the cones do not function correctly

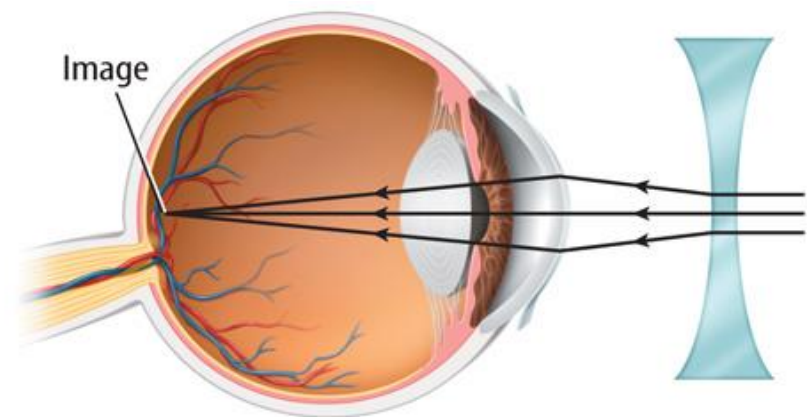


Common Vision Problems (cont.)

- Nearsightedness: cannot see faraway objects clearly



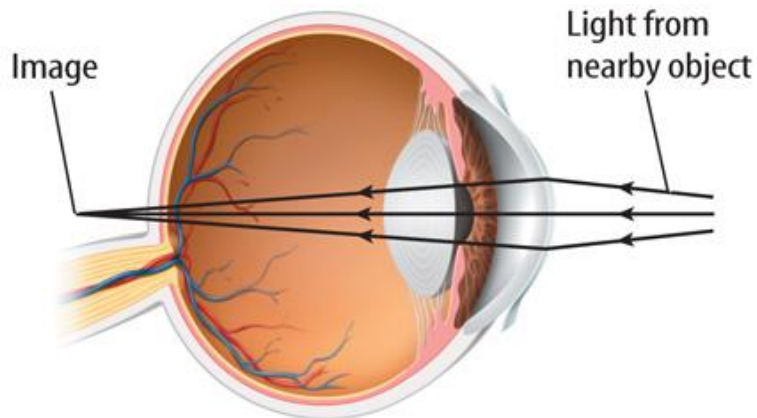
In a nearsighted eye, the eyeball is too long for the lens to form a sharp image of distant objects on the retina.



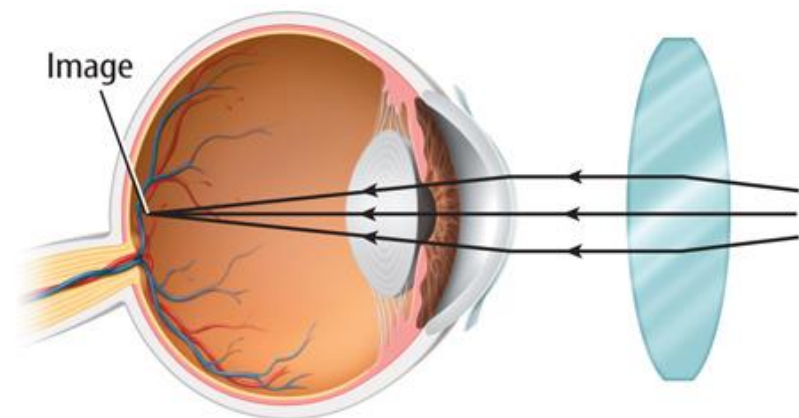
A concave lens in front of a nearsighted eye will diverge the light rays so the image is formed on the retina.

Common Vision Problems (cont.)

- Farsightedness: cannot see nearby objects clearly



In a farsighted eye, the eyeball is too short for the lens to form a sharp image of nearby objects on the retina.



A convex lens in front of a farsighted eye enables a sharp image to be focused on the retina.

Virtual
Lab



How are lenses
used to correct
vision?



Resources

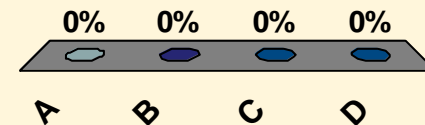


LESSON 4 Review



What controls the amount of light that enters your eye?

- A** ciliary muscles
- B** cornea
- C** sclera
- D** iris



Resources

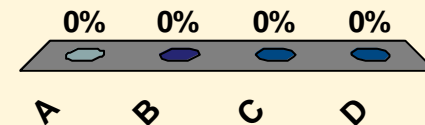


LESSON 4 Review



What part of the eye enables you to see colors?

- A pupil
- B rod cells
- C** cone cells
- D optic nerve



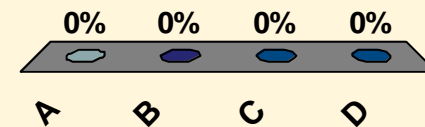
Resources



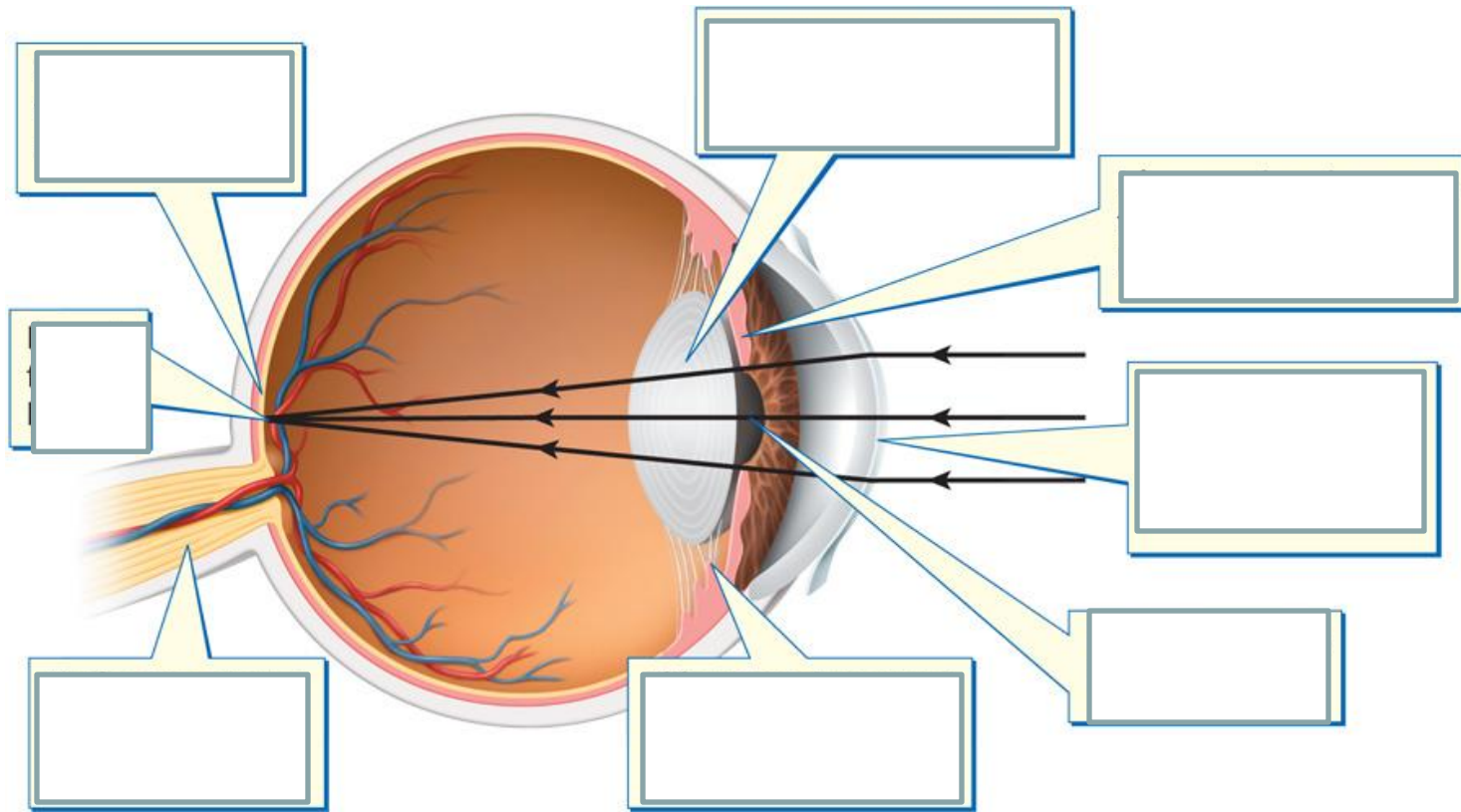
LESSON 4 Review

**Which describes a nearsighted eye?**

- A** it is missing some cone cells or the cones don't function properly
- B** the eyeball is too short for the lens to form a clear image
- C** the rods at the back of the eye do not function properly
- D** the eyeball is too long for the lens to form a clear image



THE EYE!!!



HOME

Resources

