**NOTES 6.1: Human Vision**

**Parts of the eye**

The outer eye

The inner eye

The Eye is surrounded by **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** which help move and protect the eye (pulling on lens when focusing is needed).

Around all these muscles are large quantities of **\_\_\_\_\_\_\_\_** which helps insulate the eye and protect it from knocks and bumps.

The eye is hollow and inside this hollow area is a fluid/gel called the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, this helps the eye keep its shape.

A second fluid/gel (similar to the first) is located between the Lens and the Cornea, it is called the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** and aids the eye in magnification and also holding its shape.

The only solid part in the eye is the outer coating which is divided into three layers…

 **\_\_\_\_\_\_\_\_\_\_\_\_\_\_** – tough outer white region of the eye

 **\_\_\_\_\_\_\_\_\_\_\_\_\_\_** – middle region which is blood filled, brings nutrients to the eye

 **\_\_\_\_\_\_\_\_\_\_\_\_\_\_** – inside region that contains light-sensitive cells that detect the image

Light enters the eye through an opening called the \_\_\_\_\_\_\_\_\_\_\_\_\_. The \_\_\_\_\_\_\_\_\_\_\_\_ is the colored circle muscle surrounding the pupil

The iris controls the amount of light entering the pupil.

In dim light the iris \_\_\_\_\_\_\_\_\_\_\_\_\_ or expands. In bright light the iris \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the pupil to reduce the amount of light entering the eye

The white region surrounding the iris is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Covering the iris and pupil is a transparent material called the cornea

**Forming an image**

Light rays begin to refract as soon as they pass through the cornea

The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ does most of the focusing by the eyes

The \_\_\_\_\_\_\_\_\_\_\_ does the rest of the focusing

The lens fine tunes the focus by changing its shape

A \_\_\_\_\_\_\_\_\_\_\_ lens focuses on objects that are nearby

A \_\_\_\_\_\_\_\_\_\_ lens focuses on images far away

Light rays pass through the lens and are focused at the back of the eye on a layer called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The image formed by the lens is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The image is sent to the brain by the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Your brain interprets the image to be \_\_\_\_\_\_\_\_\_\_\_\_\_\_

The point at which all the light rays come together is called the \_\_\_\_\_\_\_\_\_.

**The Pathway of light**

Stimulus (light) -> \_\_\_\_\_\_\_\_\_\_\_\_ -> \_\_\_\_\_\_\_\_\_\_\_\_ -> \_\_\_\_\_\_\_\_\_\_\_\_ -> \_\_\_\_\_\_\_\_\_\_\_\_ -> \_\_\_\_\_\_\_\_\_\_\_\_ -> \_\_\_\_\_\_\_\_\_\_\_\_ -> \_\_\_\_\_\_\_\_\_\_\_\_ -> \_\_\_\_\_\_\_\_\_\_\_\_ -> \_\_\_\_\_\_\_\_\_\_\_\_ ->

Interpret the message and respond (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)

**Blind Spot** – area where the optic nerve enters the retina (no light-sensing cells are present)

**Activities:**

**Rods and Cones**

These are the sensory cells in your eyes that detect light.

**\_\_\_\_\_\_\_\_\_\_\_** – detect low levels of light (dim light)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cells that detect shapes, movement and shades of light and dark (black-and-white vision system)

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_** – detect bright light

\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that help see the many \_\_\_\_\_\_\_\_\_\_\_ of the rainbow. There are three kinds depending on their pigment (red, green and blue)

Complete vision activities