Ahh! My Eyes!

The Sensation of Vision
Structure of the Eye

- sclera (white of eye)
- pupil
- limbus where the sclera meets the cornea
- colour of iris seen through transparent cornea
The **cornea** is the curved, clear, outer covering of the eye that bends light and focuses the image toward the pupil.

Mnemonic: picture **corn** muffins over your eyes. This should help you answer questions about which part of the eye is the **outermost** part and that the **cornea** curves light so that it is focused on the retina in the back of the eye.
Parts of the Eye: Iris

The **Iris** is the round, colored part of the eye. It's also a muscle that becomes smaller when there is a lot of light (to prevent too much light from entering the eye) and larger when there isn't much light (to get as much light as possible into the eye).

Mnemonic: "Iris" is almost the word "Irish", which reminds me of Ireland, four leaf clovers, and the color green.

Picture a leprechaun with two circles of green clovers in his eyes (to show that the iris widens and shrinks).
Parts of the Eye: Pupil

The **pupil** is the space in the center of the eye, through which light enters.

Mnemonic: use the first part of the word "pupil" and go with "**peuuuu!**".

When you think of something smelly you think of a skunk, so picture a **skunk** right in the middle of your eyeball.
The lens in your eye is often compared to a camera lens because the lens focuses images on the back of your eye.

Mnemonic: use a lentil - it's shaped like the lens in your eye and can do what your lens does when it focuses on images - it changes shape. It becomes flatter when you look at faraway objects and shorter and wider when you look at close-up objects (this is called accommodation).
Parts of the Eye: Retina

The **Retina** lines the back of your eye and contains many important cells that help you see, like the rods and cones.

**Mnemonic:** think "Red Tin" and imagine that the back lining of your eye was all made out of red tin.
Who wants to see their retina?
Parts of the Eye: Fovea

The Fovea is a spot on the retina in the back of the eye where only cones are found, which means that you'll have great visual clarity when you move your eye to focus objects right on this spot.

Mnemonic: Make use of the fact that the words "fovea" and "only cones" all have long "O" sounds in them.
Rods & Cones

The diagram illustrates the distribution of rods and cones in the retina. Rods are primarily sensitive to black and white vision and are more prevalent at the periphery of the retina. Cones, on the other hand, are responsible for color vision and are more densely packed towards the fovea, the central part of the retina. The image on the left shows a cross-section of the eye highlighting the layers of rods and cones, while the image on the right presents a cross-sectional view of the retina, emphasizing the concentration of cones in the center.
Parts of the Eye: Rods

**Rods** are cells found within the retina which are NOT sensitive to color. We use them to help us see at **night**. They are longer in shape than cones.

Mnemonic: think of a fishing rod. Fishing rods are long and usually gray. More rods are found in the periphery of the retina.
Parts of the Eye: Cone

Cones are cells found within the retina which are sensitive to color. We use them to help us see details when there is light. Cones are shorter than rods.

Mnemonic: think of traffic cones, which are usually bright colors. Also, to help you recall that cones help us see more detail, picture a traffic cone with a tail.
Parts of the Eye: Bipolar Cells

BiPOLAR cells connect with rods and cones and pass electrical impulses from them to the ganglion cells.

Mnemonic: Picture POLAR bears standing on top of the rods and cones.

Light rays from the front of the eye

Back of the eye
Parts of the Eye: Ganglion Cells

Ganglion cells take the electrical impulse from the bipolar cells. The impulse travels down their axons and make up the optic nerve.

Mnemonic: Picture a "gang of lions" on top of the bipolar cells.

Back of the eye
**Optic Nerve**: The axons from the ganglion cells band together into a long strand (the optic nerve) and go through the retina at the back of the eye (your "blind spot").

Mnemonic: Picture the **tails** of the "gang of lions" as all twisted together into one nerve and all going through the retina at the back of the eye.