

## Lesson Plan: Mechanism of Our Eyes

*Mentors:* Arti and Wendy  
*Area:* Biology / Anatomy and Physiology  
*Age Group:* 3<sup>rd</sup> to 4<sup>th</sup> grade

### *Supplies Needed:*

- Photographs
- Small dry erase board and markers
- Supplemental teaching materials

### *Introduction:*

- Tell kids we're going to learn about our eyes
- What do our eyes do? We use them to see the world.
- Ask them to pair up and observe their partner's eyes, make a sketch on the white board of a generic eye
- Define: Eye – organ of vision detecting light
  - simple eyes – detect whether surroundings are light or dark
  - complex eyes – can detect shapes, depth, color, etc
- Make a quick reference to the evolution of parts of the eyes
- Bring their attention to the pupil and iris
  1. Pupil -- The round, dark center of the eye, which opens and closes to regulate the amount of light the retina receives.
  2. Iris -- A pigmented membrane that lies between the cornea and the lens; it acts as a diaphragm to widen or narrow the opening called the pupil, thereby controlling the amount of light that enters the eye.

### *Demonstration:*

- By turning the lights of the classroom on and off, we can see the pupils contract and dilate.
- If lights don't work well, we'll ask one partner to close their eyes for ~15 seconds, then open them so the other partner can see what happens when the eyes open.

### *Directions:*

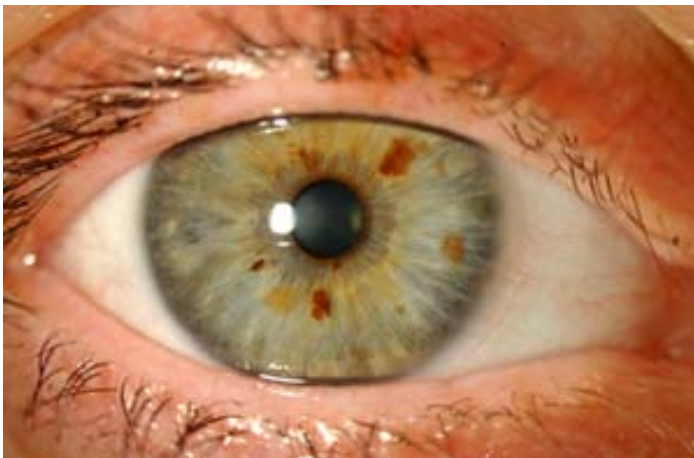
- With their partners, ask the kids to sit across from each other and look at their partner's eyes.
- Tell them we're going to look at what happens when we turn the lights down low.
- If eyes are still clearly visible with lights off, ask them what happened to the other person's pupils. If not, tell the kids to pay attention, ask you are about to turn the lights back on. They will have to make observations.
- Turn the lights back on after ~20 seconds of darkness. Ask them what they saw.

### *Follow-up:*

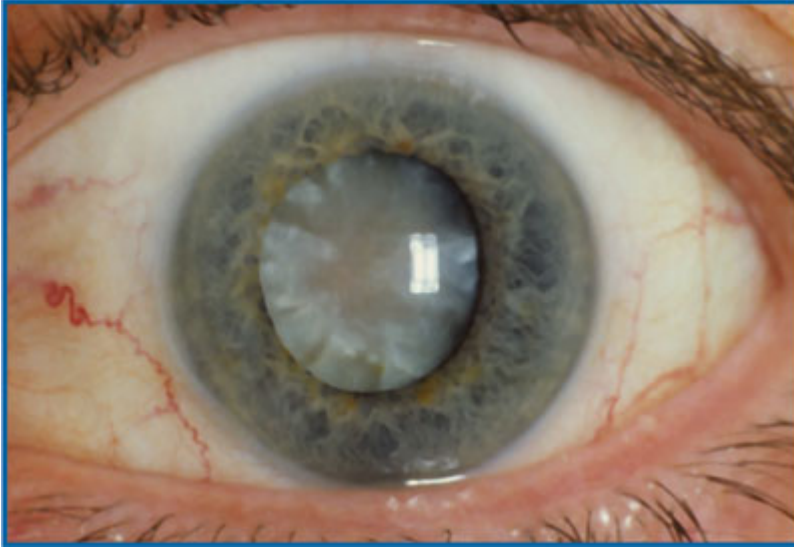
- Explain what the pupil and the iris do. Why does the pupil shrink when there is more light? Why is this important and how does this protect our eyes?
  - Pupil – where light enters the eye
    - 1.5mm in diameter usually
    - Bright light constricts pupil, so does intense anger
    - Arousal tends to dilate the pupil (exercise judgment when deciding whether or not to share this fact with the group - take the maturity of the students into consideration)
  - Iris – colored part of the eye
    - Controls light levels in the eye
    - Is a muscle that helps dilate or constrict the pupil
- Common Eye Diseases
  - Glaucoma – pressure inside eye is too high and eye is filled with too many fluids
  - Cataract
    - Opacity of the lens
    - The lens is behind the iris
- Discuss eyeglasses and contact lenses with kids. Ask them if any of them wear contacts or glasses? Do their parents? Grandparents?
  - Your eyes (cornea) can't bend light rays in the way they are supposed to
- (time permitting) – ask students to color the attached diagram of an eye and discuss the activity/remaining questions

*Supplemental Teaching Material: (each image will be printed on a separate page):*

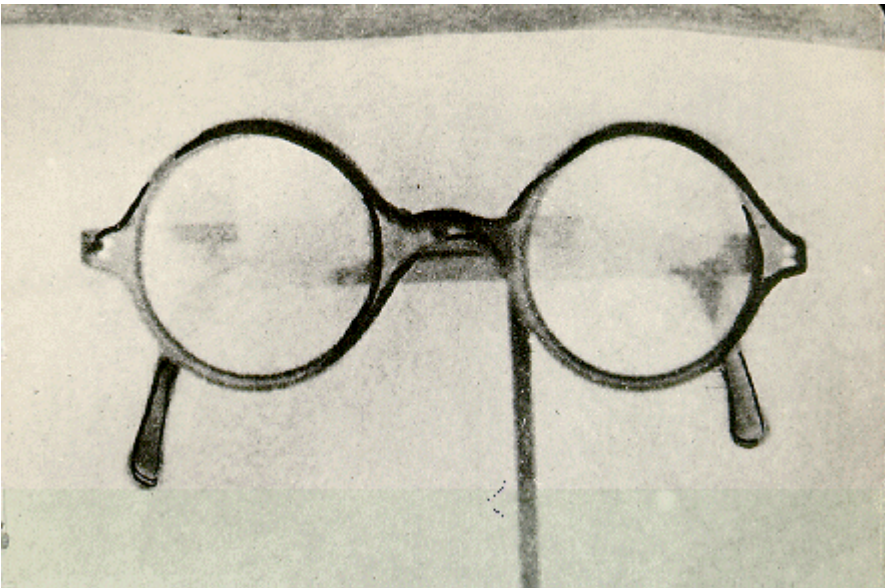
An eye



Eye with cataract:



Glasses



Color the Eye

