

Lesson One: Anatomy of the Eye

Objectives:

Educate students about how the eye works and teach them to identify varied parts of the eye. Give students an opportunity to test their knowledge.

Time Required:

One to two class periods.

Materials:

- Worksheet 1a
- Mirror

Instructions:

- Explain to students that our sense of sight is considered by many to be not just the most crucial of the five senses but also the most complex. Our eyes have over 2,000,000 working parts!
- Share some fun facts pertaining to our eyes:
 - A blink of an eye takes 1/10 of a second
 - An average person blinks approximately 17,000 times per day
 - Our eyelashes help keep airborne particles and sweat from entering our eyes
- Explain that our eye is much more complex than the visual part, or front, of our eye that we see when we look in a mirror. A human eyeball is actually the approximate size of a golf ball!
- Explain to students the various parts of the eye, using worksheet 1a:
 - Iris - the coloured part of the eye that is a ring of muscles that control how much light is passed in to the eye. It contracts to limit light intake and expands to allow more light intake. A pigment called melanin gives the iris its colour
 - Pupil - the opening in the centre of the iris that changes depending on the amount of light to protect the inside of the eye. In low light the pupil relaxes allowing more light. In bright light the muscles contract to allow less light
 - Lens - lies just behind the pupil and is the area that focuses light that enters the eye
 - Retina - a light-sensitive membrane that lines the inner eyeball and is connected to the brain via the optic nerve
- Explain how the eye works:
 - Light passes through the cornea and the pupil and is then focused by the lens into the vitreous humour and is projected onto the retina. The retina is like the film in a camera that captures the images.
 - Light sensitive receptor cells convert the light into messages that are sent to the brain via the optic nerve.
 - The eye is similar to the camera in how it works. With our eyes, light passes through the lens and cornea and bends or refracts. When it refracts the image turns upside down and backward onto the retina. With a camera light enters the lens and turns upside down and backward onto the film.

Activities:

- Ask students to draw an anatomically correct version of their entire eye and label at least five parts. Have them compare their drawing to worksheet 1a.
- Have students examine their own eyes, or work with a partner, to see how pupils dilate and expand. Have students look into a mirror, with lights off, allowing a minute or so for the eyes to adjust. Then, turn the lights back on and look in the mirror to see what happens to the pupil.

Conclusion:

- Lead a discussion where students discuss:
 - What did you see?
 - How does the pupil work?
 - Did your eyes feel differently when the lights were on? Off?

Anatomy of the Eye Worksheet 1a

