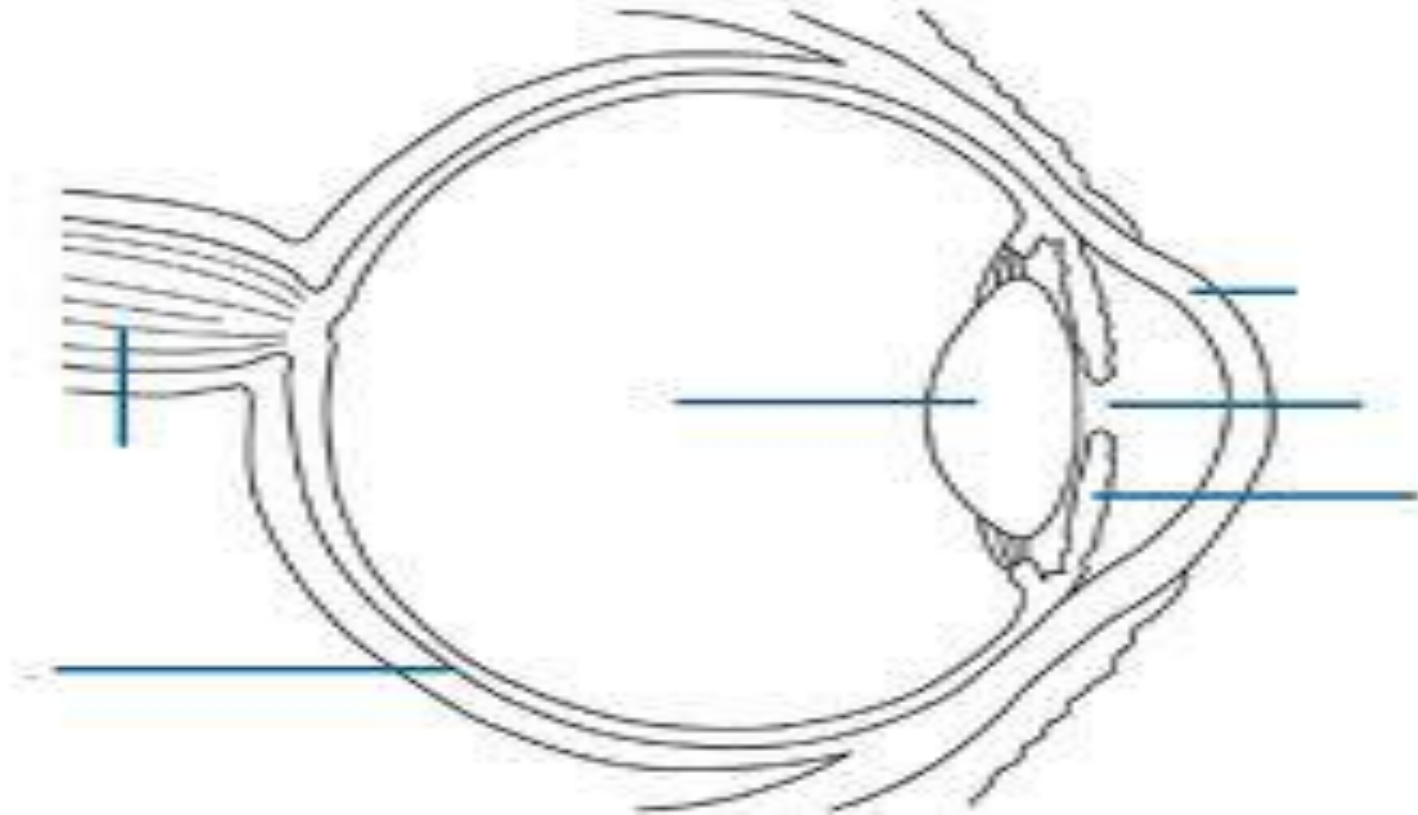
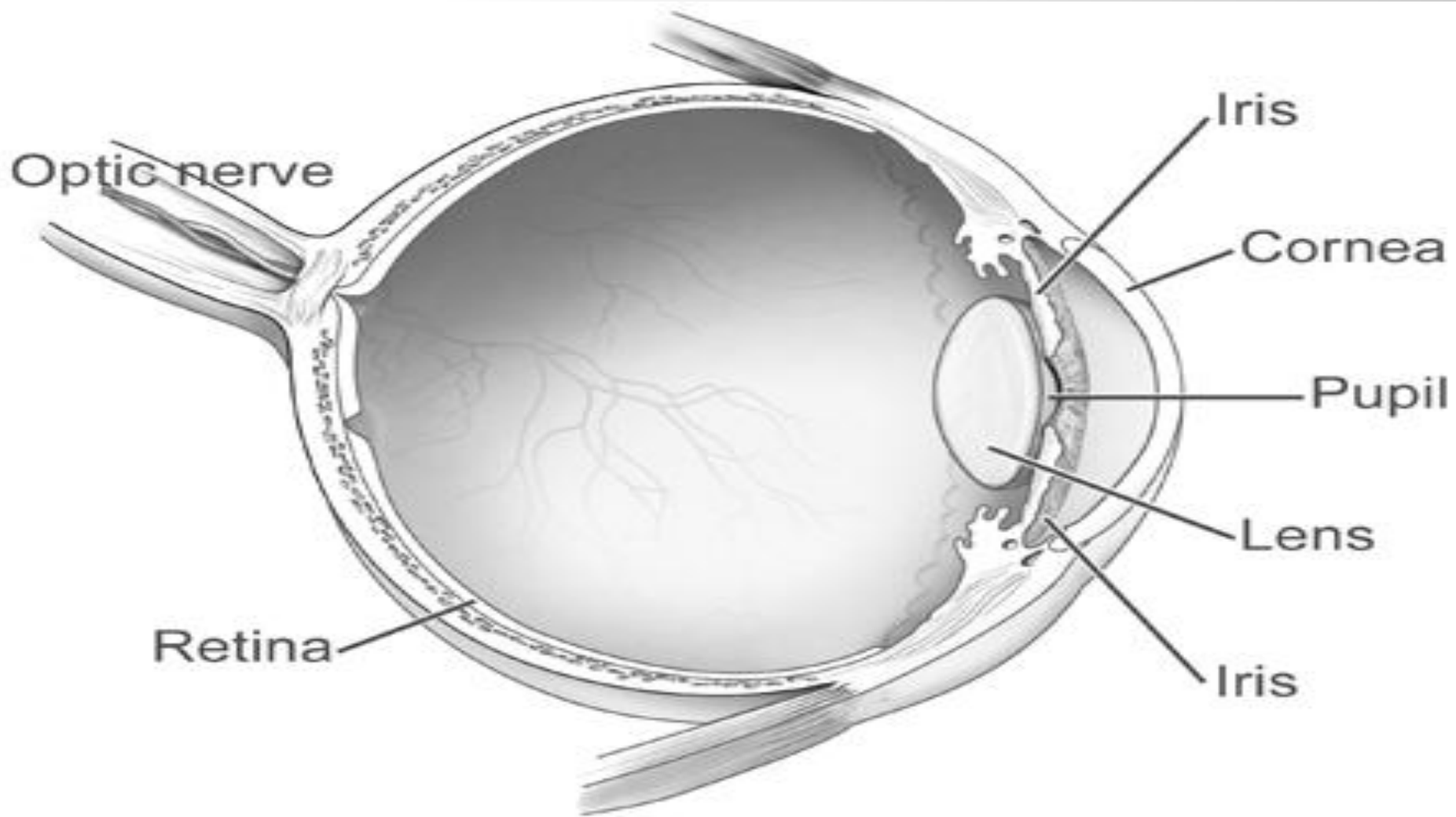


The Eye



The Eye Diagram





Major Functions of the Eye

1. Gathers, Focuses, and Transmits light through a lense to create an image of the environment.

Major Parts/ Function(eye)

Lens - a crystalline structure located just behind the iris - it focuses light onto the retina

Optic nerve - the nerve that transmits electrical impulses from the retina to the brain

Major Parts/ Function(eye)

Pupil - the opening in the center of the iris- it changes size as the amount of light changes (the more light, the smaller the hole)

Retina - sensory tissue that lines the back of the eye. It contains millions of photoreceptors (rods and cones) that convert light rays into electrical impulses that are relayed to the brain via the optic nerve

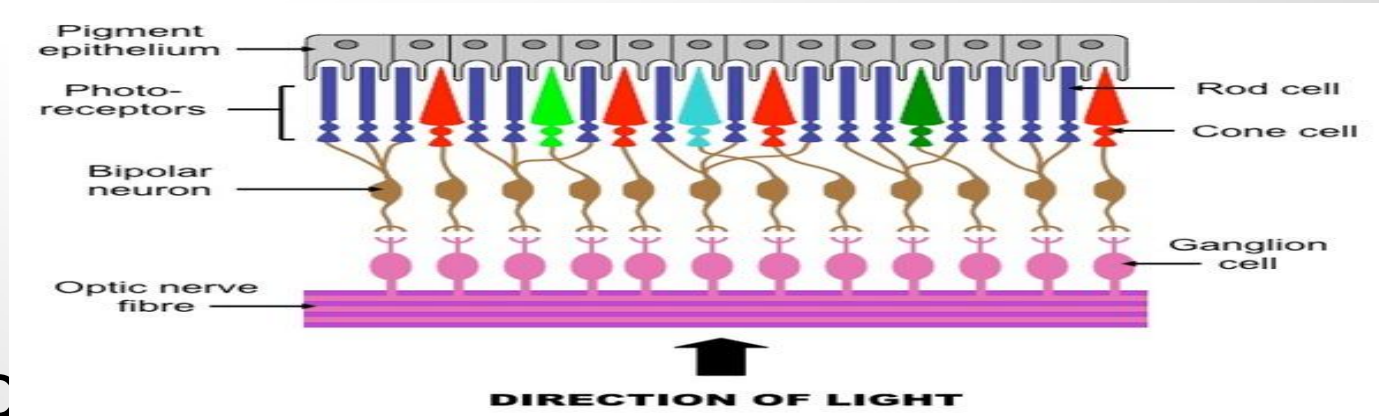
Major Parts/ Function(eye)

Cornea - the clear, dome-shaped tissue covering the front of the eye.

Iris - the colored part of the eye - it controls the amount of light that enters the eye by changing the size of the pupil

Parts of the Retina

Rods- Cells in the Retina that sense brightness. Night vision involves mostly rods. There are many more rods than cones.



Co

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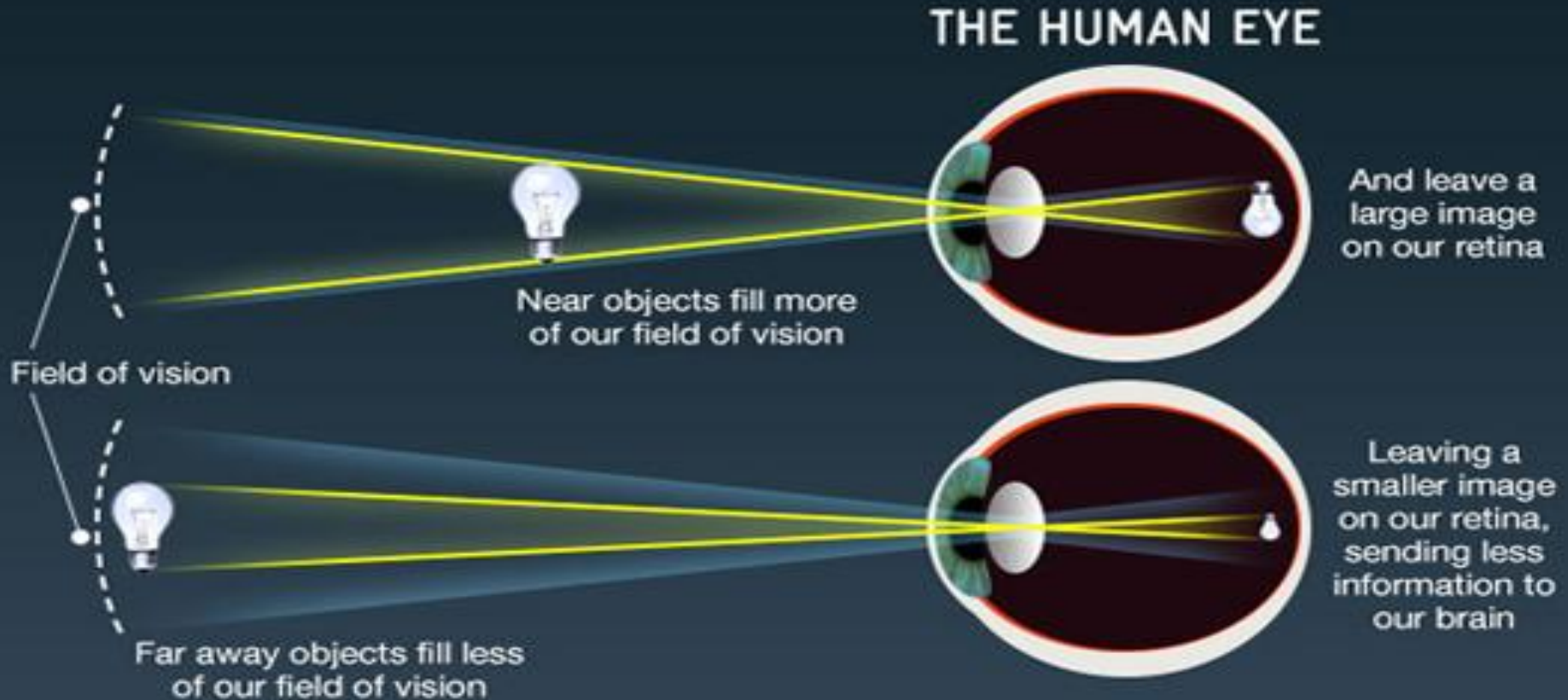
Ted Ed Color

or. 3

Path Light takes From Eye to Brain

Light rays enter the **eyes** by passing **through** the cornea, the pupil, the lens, the vitreous, and then striking the **light** sensitive nerve cells (rods and cones) in the retina.

Path Light takes From Eye to Brain



Interactions with other Systems

1. Nervous System- by sending signals from eye to brain through the optic nerve.
2. Muscular System- Moves the eye lids for protection and Eye ball for vision.
3. Circulatory System- Transmits blood and nutrients allow the eye to function.

Facts (eye)

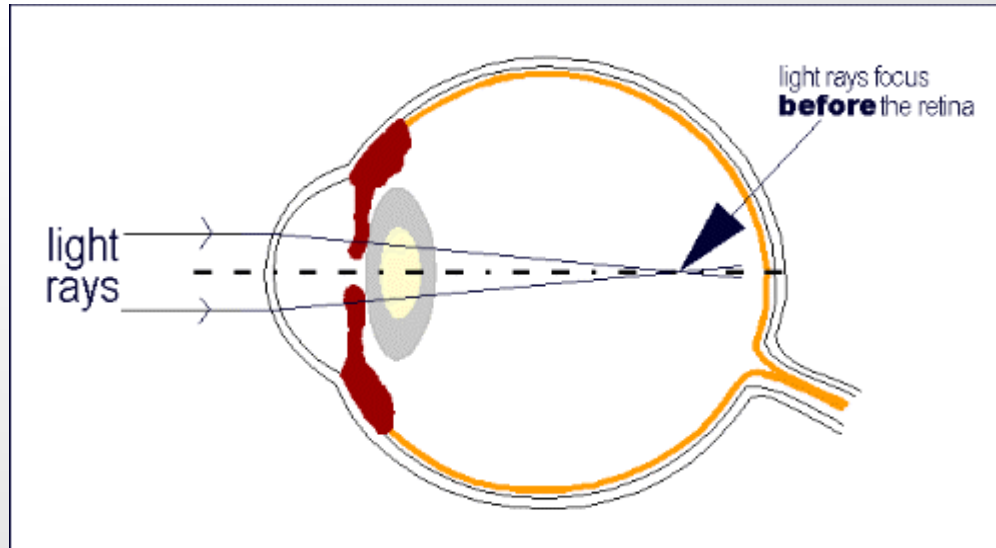
20/20 vision- Normal human vision, a condition in which a person can see a letter of a specific size from a distance of 20 feet.

Binocular vision- The coordinated use of two eyes which gives the ability to see the world in three dimensions. 3D

Facts (eye) Ted Ed

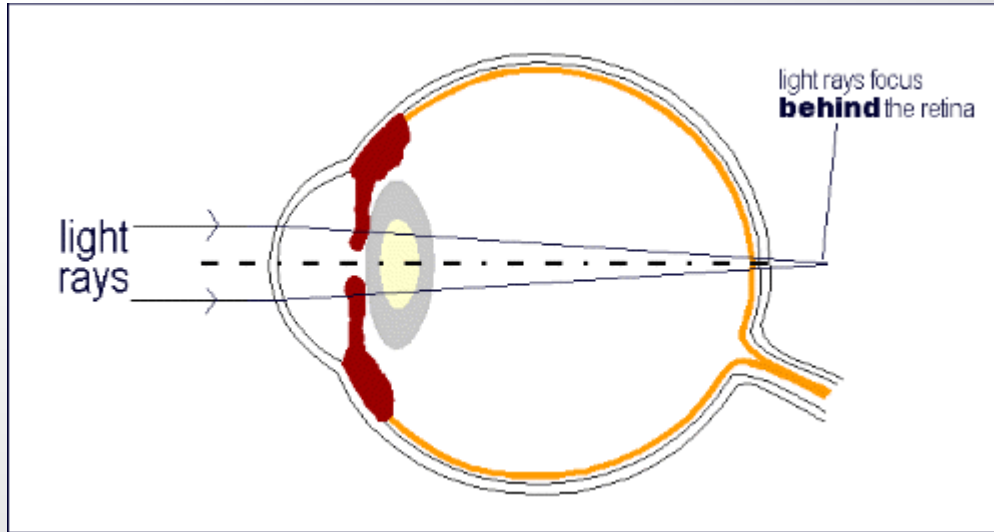
Glasses

Nearsighted- called **myopia**. a condition in which nearby objects are seen more clearly than distant objects because the light is focused in front of the retina, and not on it.

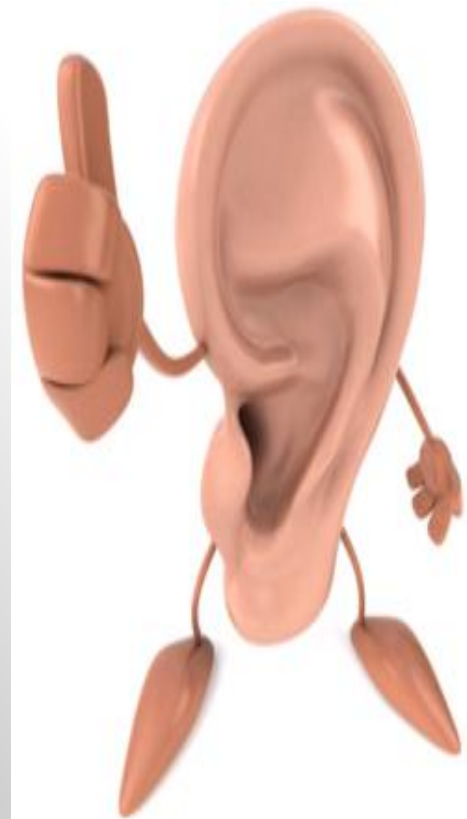


Facts (eye)

Farsighted- called **hyperopia**. A condition in which distant objects are seen more clearly than nearby objects because light is focused **behind** the retina, and not on it



The Ear



Major Functions of the Ear

1. Hearing of Outside stimuli (Sound Waves)
2. Maintaining Balance

Major Parts/ Function (ear)

Hammer- a tiny bone that passes vibrations from the eardrum to the anvil.

Anvil- a tiny bone that passes vibrations from the hammer to the stirrup.

Major Parts/ Function (ear)

Stirrup- a tiny, U-shaped bone that passes vibrations from the anvil to the cochlea. This is the smallest bone in the human body (0.25 to 0.33 cm long.)

Major Parts/ Function (ear)

Outer Ear Canal- The tube through which sound travels from the Pinna to the eardrum.

Eardrum- (Also called the tympanic membrane) a thin membrane that vibrates when sound waves reach it.

Major Parts/ Function (ear)

Pinna- The visible part of the outer ear. It collects sound and directs it into the outer ear canal.

Cochlea- A spiral-shaped, fluid-filled inner ear structure; it is lined with cilia (tiny hairs) that move when vibrated and cause a nerve impulse to form

Major Parts/ Function (ear)

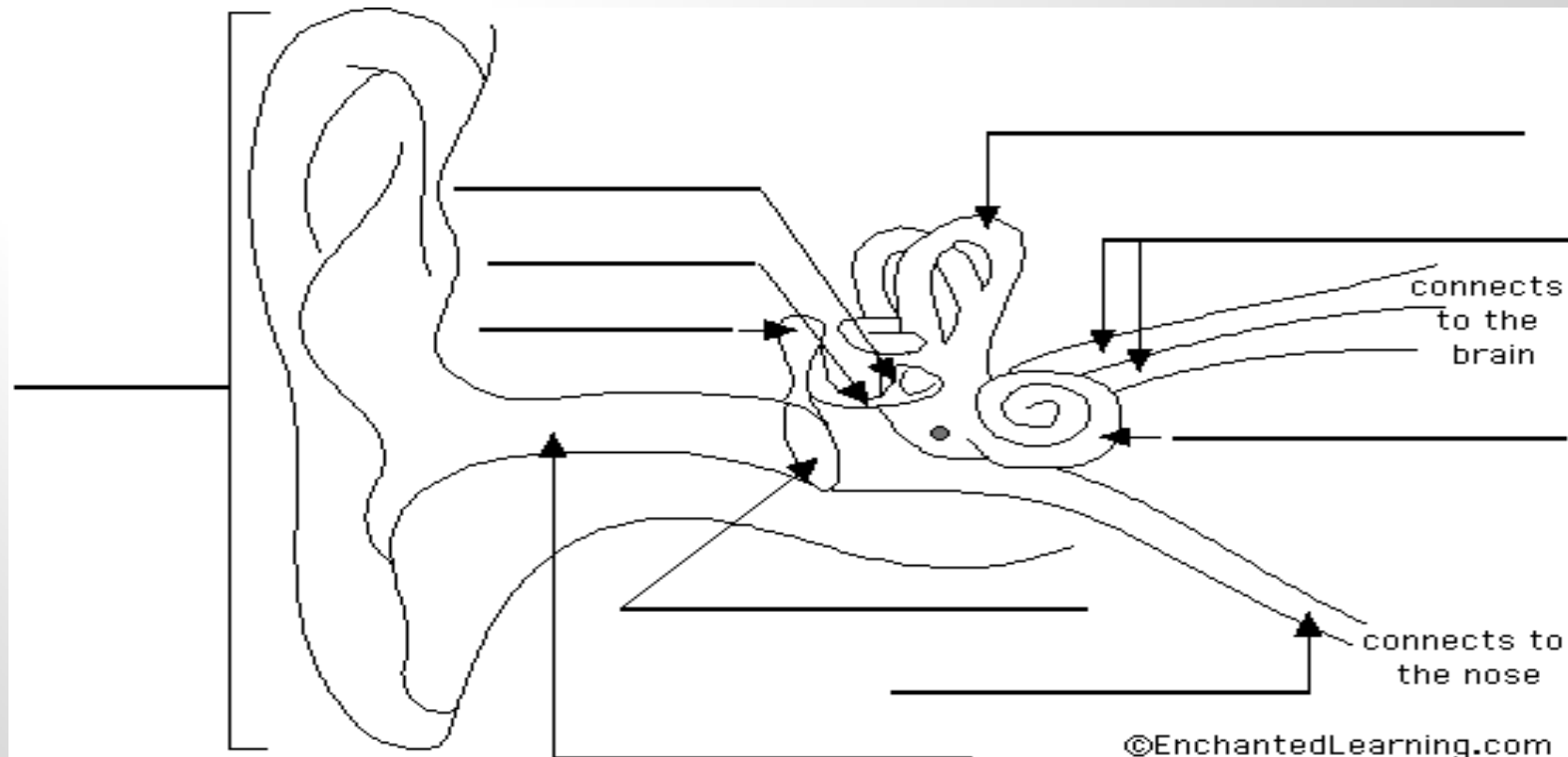
Semicircular Canals- Three loops of fluid-filled tubes that are attached to the cochlea in the inner ear. They help us maintain our sense of balance.

Eustachian tube- A tube that connects the middle ear to the back of the nose; it equalizes the pressure between the middle ear and the air outside.

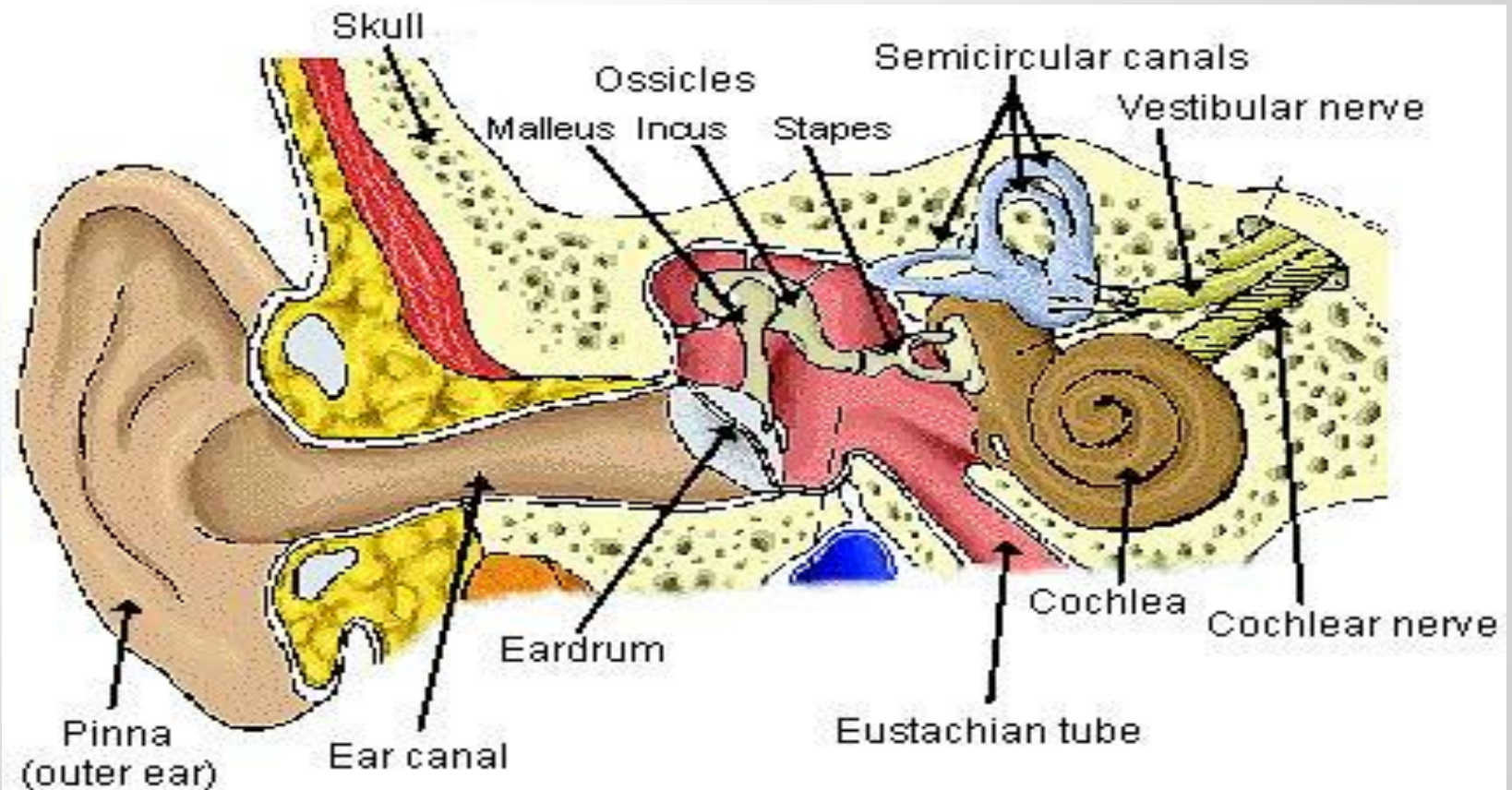
Major Parts/ Function (ear)

Auditory nerve- These carry electro-chemical signals from the inner ear (the cochlea) to the brain.

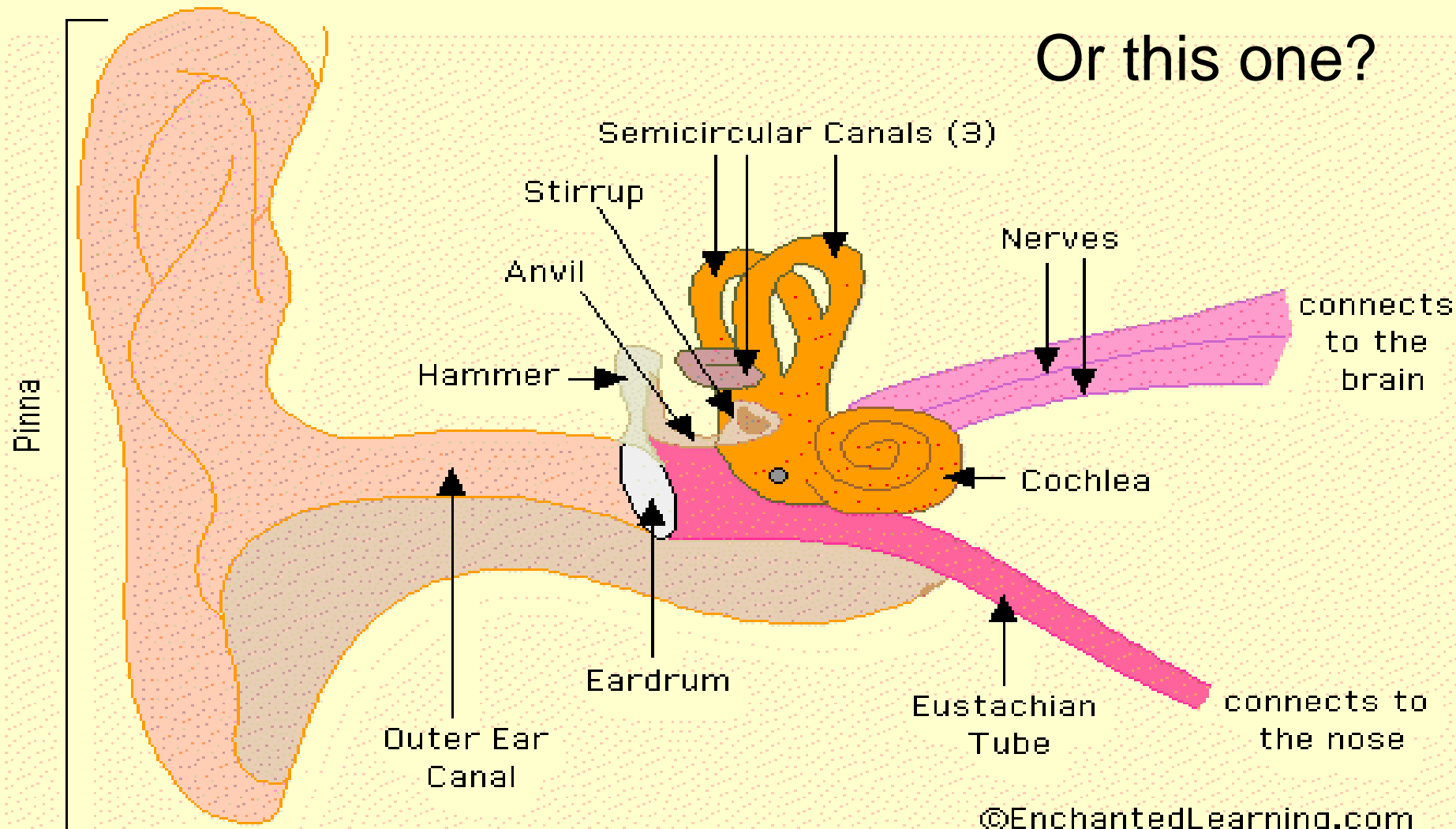
The Ear Diagram



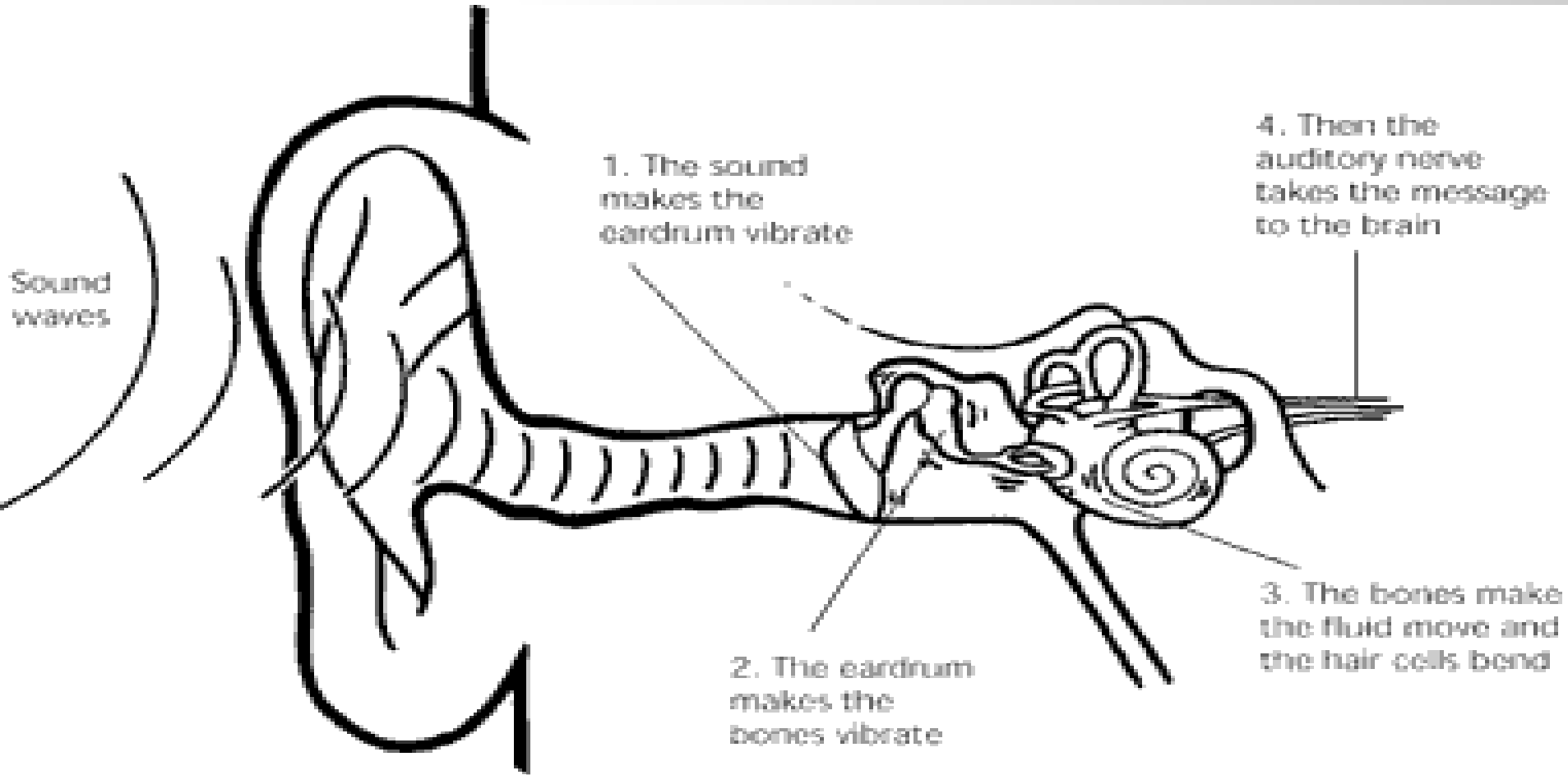
The Ear-like this one?



Or this one?



Path Sound takes From Ear to Brain



Interactions with other Systems

1. Nervous System- by carrying nerve impulses from semicircular canal to brain.
Through the auditory nerve
- 2.-3. Muscular/ Skeletal System - To provide/ maintain balance.

Facts (EAR)

Skin glands in the ear canal produce ear wax which helps protect the ear by lubricating it and cleaning it of dirt and dust.

The inner ear is found inside the temporal bone, the hardest bone in the human body.

The middle ear also contains the Eustachian tube which helps equalize pressure and drain mucus.

Abnormalities in the inner ear of humans can cause deafness.