

Lab 8: Nervous System & Senses

I. The Mammalian Brain

GOALS:

You should be able to....

- * **Identify and state the functions of the parts of the brain (listed below) using preserved sheep brain specimens and the plastic human brain model.**
- * **List two observable differences in the structures of human and sheep brains.**

Preserved Sheep Brain & Human Brain Model

pp. 231-234: Use procedure and diagrams to locate and learn the functions of the following:

- cerebrum
- right & left cerebral hemispheres
- corpus callosum
- frontal lobe
- parietal lobe
- occipital lobe
- temporal lobe
- cerebellum
- thalamus
- hypothalamus
- diencephalon
- midbrain
- pons
- medulla oblongata

II. Spinal Nerves and Spinal Cord

GOALS:

You should be able to....

- * **Describe the anatomy of the spinal cord.**
- * **Explain how the spinal cord functions in relation to the brain and spinal nerves.**
- * **Describe the path of a spinal reflex arc.**

Spinal Cord Model

□ pp. 235-top of 236 (Skip “Observation”):

Use model, reading, and diagram to locate and learn the functions of:

- sensory neurons
- interneurons
- motor neurons
- gray matter
- white matter

List the following steps of a reflex arc in order:

sensory neuron, effector, sensory receptor, motor neuron, stimulus, interneuron, response

Spinal Reflexes

□ p. 236- top of 237: Read info and follow procedure using reflex hammers.

III. The Eye

GOALS:

You should be able to....

- * **Identify and state the functions of the parts of the eye (listed below) using preserved sheep eye and plastic model of human eye.**
- * **Explain what causes the “blind spot” in your vision.**
- * **Describe what occurs when your eye accommodates for different distances.**

Key Terms:

- rod cells
- cone cells
- accommodation
- refraction
- blind spot

Preserved Sheep Eye & Human Eye Model

- pp. 237-238: Use procedure, reading, and diagram to locate & learn functions of:
 - sclera
 - cornea
 - retina
 - optic nerve
 - lens
 - ciliary body
 - iris
 - choroid
 - pupil
 - vitreous humor
 - aqueous humor
- After observing the demonstration, dissect a sheep eye to locate the above structures.

Finding your blind spot & testing accommodation

- pp. 239-240: Follow procedures and answer questions.

IV. The Ear

GOALS:

You should be able to....

- * **Identify and state the functions of the parts of the ear using plastic model of human ear.**
- * **Describe how humans perceive the direction of sound.**

- pp. 241: Use the reading, diagram, and model to locate and learn the functions of:

Outer Ear

- pinna
- auditory canal

Middle Ear

- tympanic membrane
- malleus (hammer)
- incus (anvil)
- stapes (stirrups)
- auditory tube
- oval window

Inner Ear

- cochlea
- hair cells
- cochlear (auditory) nerve
- semicircular canals

- p. 242: Follow “Experimental Procedure: Locating Sound”

- NOTE: You should read the more thorough explanation of how the ear works on pp. 606-607 in your text

V. Sensory Receptors in the Skin

GOALS:

You should be able to....

- * **Explain the relationship between the amount of touch receptors and the ability to distinguish two different touch points.**
- * **Describe the different sensations felt during the temperature receptors experiment.**

- p. 244: Follow experimental procedures and answer questions.

VI. Review

- p. 247: Answer questions 1-14, 20-21