

# Lab 8: Nervous System & Senses

## **I. The Mammalian Brain**

### **GOAL:**

**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.**

### Preserved Sheep Brain & Human Brain Model

pp. 232-234: Use procedure and diagrams to locate and learn the functions of the following:

- |                                     |                  |   |
|-------------------------------------|------------------|---|
| ✓ cerebrum                          | ✓ occipital lobe | ✓ midbrain  |
| ✓ right & left cerebral hemispheres | ✓ temporal lobe  | ✓ pons  |
| ✓ corpus callosum                   | ✓ cerebellum     | ✓ medulla oblongata   |
| ✓ frontal lobe                      | ✓ thalamus       | ✓ pituitary gland (add this to the diagrams in your manual) |
| ✓ parietal lobe                     | ✓ hypothalamus   |   |
|                                     | ✓ diencephalon   |   |

## **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:

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

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

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     | ✓ blind spot |
| ✓ cone cells    |              |
| ✓ accommodation |              |
| ✓ refraction    |              |

### Preserved Sheep Eye & Human Eye Model

□ pp. 237-238: Use procedure, reading, and diagram to locate & learn functions of:

- |          |                 |                  |
|----------|-----------------|------------------|
| ✓ sclera | ✓ ciliary body  | ✓ vitreous humor |
| ✓ cornea | ✓ iris          | ✓ optic nerve    |
| ✓ retina | ✓ pupil         | ✓ choroid        |
| ✓ lens   | ✓ 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”

### **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 all questions EXCEPT #14, 16, 17.