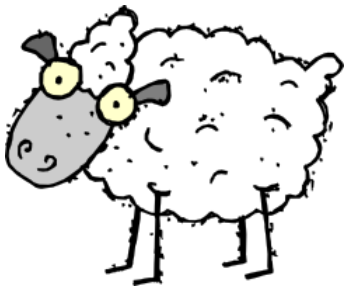
Sheep Brain Dissection

Name _____



Objectives:

1. List and describe the principal structures of the sheep brain

2. Identify important parts of the sheep brain in a preserved specimen

Materials: Dissection tools, lab glasses, lab gloves, preserved specimen

External Sheep Brain: The sheep brain is quite similar to the human brain except for proportion. The sheep has a smaller cerebrum. Also the sheep brain is oriented anterior to posterior whereas the human brain is superior to inferior.

1. The tough outer covering of the sheep brain is the **dura mater**, one of three meninges (membranes) that cover the brain. You will need to remove the dura mater to see most of the structures of the brain. Remove the dura mater while leaving other structures intact. ☐

2. The most prominent feature of the brain is the **cerebrum -** which is divided into nearly symmetrical **left and right hemispheres** by a deep longitudinal **fissure.** ☐

3. The surface of the cerebrum is covered with large folds of tissue called **gyri**. The grooves between the gyri are **sulci**. The deeper sulci are often termed **fissures**. The fissures are used as landmarks to divide the surface of the cerebrum (the **cerebral cortex**) into regions:

   frontal lobes / **parietal lobes** / **occipital lobes** / **temporal lobes**

   * Locate each of the lobes of the brain. ☐

4. The smaller, rounded structure at the back of the brain is the **cerebellum**. The cerebellum has smaller gyri that are roughly parallel to one another. Compare the gyri of the cerebellum to that of the cerebrum. Removing the dura mater from the cerebellum can be tricky business. Look for areas on the side of the brain that you can snip to peel the dura mater off. ☐

5. Turn the brain over so that the cerebrum is down. The most prominent structure visible on the ventral side of the brain is the optic chiasma, where the two **optic nerves** cross over each other and form an "X" shape. Locate the **optic chiasma**. ☐

6. The **pituitary gland** is a large round structure under the chiasma. If you removed this area with the dura mater, you may need to replace it to see the chiasma and pituitary gland. ☐

7. Toward the front of the brain are two prominent round structures; find the **olfactory bulbs**. ☐

8. Toward the back of the brain, are bulges that indicate the **midbrain**, the **pons**, and the **medulla**. ☐

9. Just behind the optic chiasma is a raised area or bump that indicates the **infundibulum** (also known as the **pituitary stalk**). This is where the pituitary was attached to (which was probably removed with the dura mater). ☐

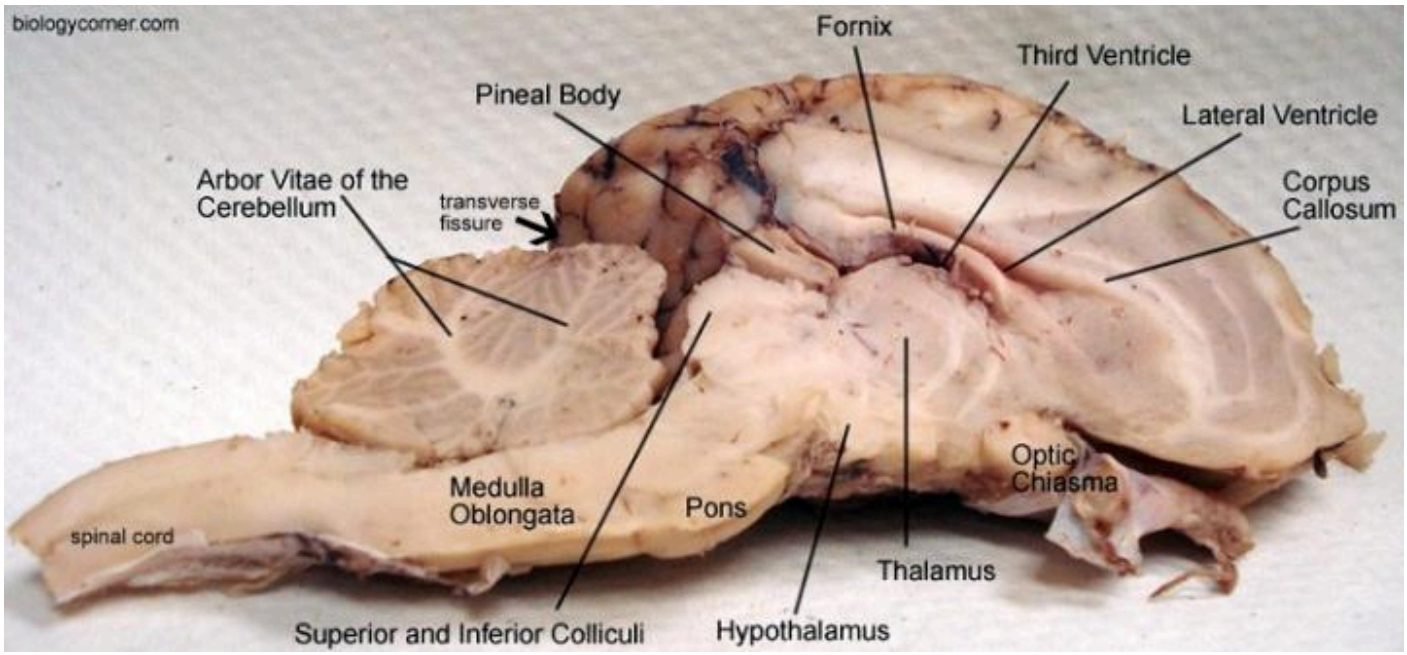
10. **Oculomotor nerves** may be visible to each side of the pituitary gland (or stalk). Or in some cases you may find them stuck to the dura mater that you removed with the pituitary gland. ☐

11. Carefully bend the cerebellum to get an inside glimpse of the brain. The bumps you see (kind of resemble a "butt") are the **superior colliculi**. The smaller ones underneath are **inferior colliculi**. ☐

12. If you gently push those structures down, you can see the tiny nub of the **pineal gland**. ☐

Internal Sheep Brain.

1. Use a knife or long-bladed scalpel to cut the specimen along the **longitudinal fissure**. This will allow you to separate the brain into the left and the right hemisphere. Lay one side of the brain on your tray to locate the structures visible on the inside. You should also cut through the cerebellum. ☐



2. The **corpus callosum** had been connecting the two cerebral hemispheres and can now be clearly seen in the brain section. ☐

3. The tiny space within the corpus callosum (which hold cerebrospinal fluid) is called the **lateral ventricle**. Underneath it, you can find the **third ventricle**. There are other ventricles within the brain, but those are the easiest to locate in a preserved specimen. The white area between those two ventricles is the **fornix**. The **fourth ventricle** is the space under the cerebellum. ☐

3. Inferior to the corpus callosum is a round structure known as the **thalamus**. It seems it almost perfectly centered. Just behind the thalamus is the **pineal body** (gland). The **hypothalamus** is also round shaped but is lower and toward the front of the brain. ☐

4. The **pons**, **medulla**, **cerebellum** and **spinal cord** are also visible in the side view of the brain. Gently separate the cerebellum at the **transverse fissure**, which separates it from the cerebrum. ☐

5. Within the cerebellum, locate the **arbor vitae**, named such because the white lines resemble a tree. ☐

g. Use a scalpel to cut a cross section of the cerebrum in the occipital lobe area. You should be able to see the color and texture differences of the **white matter** and the **gray matter**. ☐

Name(s) _____

Sheep Brain Dissection Analysis: Match the structure to the description

1. ___ Arbor Vitae	a. looks like a “butt”
2. ___Lateral Ventricle	b. leathery covering over the entire brain
3. ___Optic Chiasma	c. cauliflower, the area toward the back of brain
4. ___Superior Colliculi	d. behind the colliculi, looks like a little nub
5. ___Dura Mater	e. looks like a “tree”
6. ___Cerebellum	f. the rounded part of the brain stem
7. ___Pineal Gland	g. shaped like an X, located on the underside of brain
8. ___Thalamus	h. large area under the corpus callosum
9. ___ Pons	i. space for fluid between the corpus callosum and the fornix
10. ___ Olfactory Bulb	j. contains nerves of detecting odor, found at anterior of the brain

LABEL THE BRAIN *(The words above may be helpful, but write them out and do not use the letters. This will help you remember the structures.)*

