BRAIN ANATOMY: 101
SHEEP BRAIN DISSECTION!
INTRODUCTION TO BRAIN
STRUCTURE I.

FOREBRAIN:
- LONGITUDINAL FISSURE
- CENTRAL SULCUS
- LATERAL FISSURE
- FRONTAL LOBE
- SPEECH AREA
- MOTOR AREA
- TEMPORAL LOBE

PARIETAL LOBE:
- PRIMARY SENSORY AREA
- OCCIPITAL LOBE

HINDBRAIN:
- PONS
- CEREBELLUM
- MEDULLA OBLONGATA

[Diagram of a brain with labeled areas]
Terms you will use

- TEMPORAL LOBE
- PARIETAL LOBE
- FRONTAL LOBE
- OCCIPITAL LOBE
- CEREBELLUM
- BRAIN STEM

Lobes of the Brain

[Diagram of brain with labeled lobes]
Questions

1. This part of the brain is involved in mental control and decision-making.

____________________________________________________________________________

2. This part of the brain is needed for knowing where your body and limbs are located in space.

____________________________________________________________________________

3. This part of the brain is needed to see the world around you.

____________________________________________________________________________

4. This part of the brain is involved in object recognition and memory.

____________________________________________________________________________

5. This part of the brain is needed to help you skateboard ride a bike.

____________________________________________________________________________

6. This part of the brain is needed to control your body functions like breathing and heart-rate.

____________________________________________________________________________
Sheep brains!
Procedures and Questions:

1. A single student from each group comes up to collect the materials: dissection kit, tray, goggles, and gloves.

2. Tools and safety will be reviewed again, and will emphasize that this isn’t just cutting, this is goal directed dissection.

3. Brains are passed out.

4. Throughout the lesson, students who are not cutting, or directly working with the brain will work on the packet.

5. The brains will be passed out and the students will be giving sufficient time to explore the brain WITHOUT any cutting. They will feel its texture, weight, shape, smell, and comment in class discussion on how it meets and goes outside expectations.
   a. Describe the brain in terms of your different sensory experiences: __________________________________________
      __________________________________________
      __________________________________________
   
   b. Is it what you expected it to be like? Why and why not?
      __________________________________________
      __________________________________________
6. Remove the dura, and again examine the brain. Discuss the brain parts. I will ask about the middle of the brain, and thus motivate the first cut.
   a. Describe the brain in terms of your different sensory experiences and list the parts you notice:
      __________________________________________
      __________________________________________
      __________________________________________

7. The first cut: bisect the hemispheres. They will examine the parts, and I will ask them what happens with such a cut. I will show a video on split brain humans.
   a. Describe the brain in terms of your different sensory experiences and list the parts you notice:
      __________________________________________
      __________________________________________
      __________________________________________
   b. What happens to a person with a bisected brain?
      __________________________________________
      __________________________________________
      __________________________________________

8. Cut the prefrontal off, and discuss what happens. I will discuss the famous case of Phineas Gage.
   a. What happens to a person with a removed prefrontal lobe?
      __________________________________________
      __________________________________________
      __________________________________________

9. Cut out the occipital lobe.
   a. What happens to a person with a damaged occipital lobe?
      __________________________________________
      __________________________________________
      __________________________________________

10. Observe where the hippocampus is in humans
a. What does the hippocampus do?

______________________________
______________________________
______________________________

11.

12. Challenge! Find the hippocampus in the sheep brain.
   a. Was it hard to find? Was it in the same location as in the human? Does it look like the human brain?

______________________________
______________________________
______________________________

13. Watch video on brain plasticity.
   a. Why was the little girl able to recover from such a bad injury?

______________________________
______________________________
______________________________

14. Clean up! Put all brain pieces in the trash bag, take tray to the sink with all tools on the tray. Remove gloves and put in trash can at the very end after you’ve done all your clean up.
   a. Did you have fun? __________________________
   b. What did you like most?

______________________________
-----------------------------
-----------------------------
-----------------------------
   c. What didn’t you like?

______________________________
-----------------------------
-----------------------------

   d. What was the most surprising thing you learned?

______________________________
-----------------------------
-----------------------------

   e. What would you like to learn about next?

______________________________
-----------------------------
-----------------------------
Sheep anatomy identification

1. Which pin is labeling the frontal lobe?
2. Which pin is labeling the cerebellum lobe?
3. Which pin is labeling the occipital lobe?
4. Which pin is labeling the brain stem lobe?
5. Which pin is labeling the corpus callosum lobe?
6. Which pin is labeling the hippocampus lobe?
7. Which pin is labeling a sulcus, G or H?
8. Which pin is labeling a gyrus, G or H?