**Brain Bank**

**Topic: Brain Anatomy**

**Developed by:** CUNO graduate students, Ethan McCurdy, Leslie Sibener

**Grades:** K-12 adaptable

**Vocabulary words:** hemisphere, lobes, sulcus, gyrus, (any brain region)

**Materials:** 2 volunteers. The full brain bank of human, sheep, rat, mouse, brain block (fish, frog, snake, pigeon, rabbit). Gloves for handling the and touching the brain.

**Time needed: 5-10min**

**NOTE: ONLY VOLUNTEERS ARE ALLOWED TO PICK UP THE HUMAN BRAINS.**

**Summary:** This lesson is a basic introduction to brain anatomy. The goal of this activity is for students to learn about the human brain, what different lobes of the brain do, and generally about other specific regions of the brain (cerebellum, olfactory bulb, etc). We also want to point out the major differences between human brains and other animals. This comparative anatomy will help students understand why we behave and live so differently from other animals on earth.

Depending on the age you will go into varying details about brain anatomy.

**Prerequisites for Students:** None.

**Learning Goals:**

* Introduce the human brain as significantly different from other animal brains
* Point out these anatomical differences, and associate them with different ways of interacting with the world
* Talk about various brain areas and what they are used for

**Background for instructor:**

* First, do not let anyone hold the human brain. Visitors are allowed to touch the brain gently if they are wearing gloves.
* Remember to use vocabulary appropriate for the grade level you are speaking to.
* Introduce some basic metrics of the brain—weight, the 4 lobes (frontal, parietal, occipital, temporal), and gyri and sulci (the folds of the brain).

**Set-up:** Two tables with the brain bank spread across it.

**Lesson Outline:**

For someone just walking up and ready to listen, try to give 2-3 interesting facts and then end with an open ended question to let the viewer direct the conversation. For example: “This is a real human brain that was donated to science for educational purposes. It has been plastinated using the technique that you might have seen in the Bodies Exhibit—all of the water is gone and the fats were turned into a plastic material to harden and preserve it. This three pound organ is responsible for everything that makes you “you”: your behavior, your personalities, your memories, and your hopes for the future. Do you have any questions about the brain?”

In describing what the brain looks like: “You can see there are a lot of folds and grooves in the human brain. These folds and grooves, called sulci and gyri, increase the surface area of the brain of the outer layer of the brain, the cerebral cortex. In a human brain, the cortex flattened out would be the size of a pizza, but the folding allows it to fit in our skulls. All that surface area is important because a lot of our most complex thoughts and behaviors come from the cortex. Do you have any questions?”

Possible topics to talk about

* By the numbers (information on the brain)
* Comparison of the human brain to other animals
* External surface of the brain
* What you can see in a hemisected brain (a brain separated by their hemisphere)
* The developing brain and fruit comparison
* Specific points on animal brains

Details and point by point information on specific brain facts in **teacher instructor guide.**

**Wrap-up, final thoughts**: Remember to ask if they have any questions about the brain!