



As technology has improved, scientists have used a range of techniques to learn about brain and neural function. In recent years, neuroscientists have been able to look inside the brain without surgery. In this activity, you will be able to look at a model of a 3-D brain and link regions of the brain with their functions.

Go to: *G2C Online* and click on *3-D Brain*. The text area on the left provides information about the whole brain that is pictured on the right. Use the drop-down text menu of parts of the brain to find out about each brain region: overview, case study, associated functions, associated cognitive disorders, associated with damage, research reviews, links, and *BrainInfo*. Brain structures are highlighted on the *G2C Brain* as you study each structure, and parts are labeled when “View Labels” is clicked. You can rotate the *G2C Brain* to reveal the mid-sagittal section, as well as the lateral surfaces.

Choose ten regions/parts of the brain that you think are very important. Write the name of each brain region/part on its own line in the left column of the table. Fold the paper lengthwise so that the crease is on the line dividing the columns of the table. Using scissors, cut on the line below the name of each brain part to the end of the first column. In the right column, write the function(s) of the part. Fold the name of the brain part back, and write the associated cognitive dysfunction and associated damage to the region/part on the back of the page to the left of the part’s name.

After you have finished completing all of the information in your table, you can test yourself to see how much you remember about the brain regions/parts. Fold the names back to see if you remember the names of the parts when you read their functions. Unfold to see if you are right. Turn the page over and unfold the names to test yourself on associated dysfunctions and damage to the region.

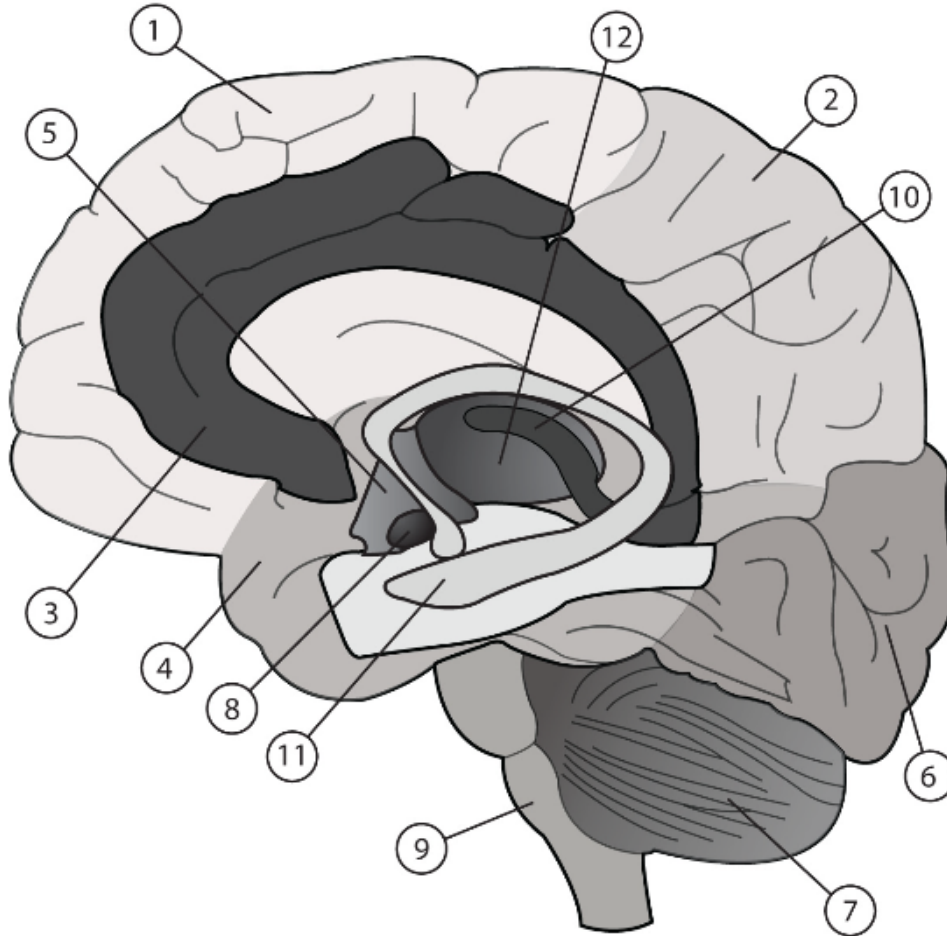
Why did you select the ten brain parts you chose, rather than other parts?



## Part 2: Brain Matters: Brain Diagram

Go to *G2C Online* and click on *3-D Brain*. The text area on the left provides information about the whole brain that is pictured on the right. Use the drop-down text menu of parts of the brain to see each brain region. Brain structures are highlighted on the *G2C Brain* as you study each structure, and parts are labeled when “View Labels” is clicked. You can rotate the brain model to see the inferior (bottom), superior (top), anterior (front), posterior (back), and lateral (side) surfaces, as well as views of the interior of the brain. Notice which brain structures you can see from each view.

On the brain diagram below, label the parts that are visible. (If you did not do Part 1, write the functions of the parts too.)



- |          |           |           |
|----------|-----------|-----------|
| 1. _____ | 6. _____  | 11. _____ |
| 2. _____ | 7. _____  | 12. _____ |
| 3. _____ | 8. _____  |           |
| 4. _____ | 9. _____  |           |
| 5. _____ | 10. _____ |           |

Questions about views of the brain:

1. Of the following, which region **cannot** be seen when you look at the inferior aspect of the brain?
  - a. The frontal lobes
  - b. The temporal lobes
  - c. The parietal lobes
  - d. The cerebellum
  - e. The medulla oblongata
2. Of the following, which structures are visible when you look at the superior aspect of the brain?
  - a. The parietal lobes and frontal lobes
  - b. The basal ganglia and brainstem
  - c. The corpus callosum and hippocampus
  - d. The thalamus and hypothalamus
  - e. The pituitary and pineal glands
3. In a posterior view of the brain, all of the following are visible **except**
  - a. The occipital lobes
  - b. The parietal lobes
  - c. The cerebellum
  - d. The brainstem
  - e. The frontal lobes
4. In an anterior view of the brain, which structures are **not** visible?
  - a. The frontal lobes
  - b. The occipital lobes
  - c. The temporal lobes
  - d. The medulla oblongata and pons
  - e. The cerebellum
5. Which **is** identifiable when viewing the left lateral side of the brain, but **cannot** be found on the right side?
  - a. The temporal lobe and parietal lobe
  - b. The frontal lobe and occipital lobe
  - c. Broca's and Wernicke's area
  - d. Substantia nigra and caudate nucleus
  - e. Corpus callosum and third ventricle
6. Which **cannot** be seen in any views of the whole brain, or in a mid-sagittal section?
  - a. Hypothalamus and pituitary
  - b. Hippocampus and amygdala
  - c. Broca's and Wernicke's area
  - d. Third ventricle and corpus callosum
  - e. The cerebellum and pons