

Two-Day Lesson Plan

Susan Morton
Teaneck High School

This two-day block lesson will afford students the opportunity to examine the parts of the brain in isolation and as part of a system that influences the body's responses. They will demonstrate their understanding by applying the functions of the different parts of the brain contained in the brainstem, the limbic system and the cerebral cortex to a real-life situation. The purpose of this lesson is for students to identify and describe the functions of different parts of the brain and explain how they are connected to specific behaviors and mental processes.

National Standards for High School Psychology Curricula (February 2022):

Standard Area (Unit Name): Biological Bases of Behavior

Pillar: Biological

Domain: Neuroscience

Targeted Content Standard(s):

Content Standard 1: Structure and function of the nervous system and endocrine system in human and non-human animals

Targeted Learning Target(s):

Students are able to (learning targets):

- 1.1. Identify the major divisions and subdivisions of the human nervous system and their functions
- 1.3. Describe the structures and functions of the various parts of the central nervous system

Day One:

Materials Needed:

- Homework from previous night (text reading about the major regions of the brain)
- brain chart - see attached
- brain diagrams - see attached
- colored pencil
- large pieces of cardboard - at least 2'x3' (see note below)
- construction paper

Students will see their group assignments ("brainstem," "limbic system," and "cerebral cortex") projected on the board when they come into the room and will sit together in the three different groups.

1. Do Now: Work with your group to sum up the major responsibilities of your region of the brain in five words or less. Be ready to report out in three minutes (timer on the board)
2. After discussing the Do Now, students will each receive copies of a chart of the structures of the brain and diagrams of those parts. Working as a group, they will have fifteen minutes to complete the functions of the parts of the brain in their assigned region, using their textbooks.
3. When they have completed the chart, the groups will be given colored pencils to color not only each part of the brain in their region, but to color the corresponding row on the chart - creating a key for the diagram. Teacher will circulate around the room answering questions and checking for understanding.
4. Teacher will lead a discussion engaging the entire class, projecting the diagrams on the screen. Students from each group will provide the functions of their structures of the brain so that students can understand the role each structure plays in behavior and mental processes.
5. Students will then be given a scenario:

Sean (the owner of your brain) just got a text from DoorDash, rewarding him for being such a good customer. They're offering Sean a \$20 credit to his account that he has to use in the next 24 hours.

Describe how Sean's brain – the parts your group has been assigned - would react to receiving this news. Complete the "application" column on your chart with this information. Again, the teacher will circulate around the room answering questions and checking for understanding.

6. Students in each group will be given large pieces of cardboard (3'x4') and construction paper and will be instructed to work together to create an outline drawing of the brain (using an example projected on the screen) to prepare them for next class. These diagrams on cardboard will be referred to as their workspace.
7. Closure: Students will review the different parts of the brain and their functions and discuss the importance of understanding brain anatomy in understanding behavior and mental processes. Students will be asked to reflect on how their own behaviors and mental processes might be connected to specific parts of the brain.

NOTE: My school had received a shipment of replacement bulletin boards and they were packed with thick sheets of cardboard. I was looking for anything thick to support weight - any non-creased pieces would work.

Day Two:

Materials Needed:

Student Workspaces (the brain diagrams on cardboard created last lesson)
colored macaroni (see note below)
white glue
Lined paper
construction paper - for captions
paper cutter - or captions
Scenario from last class

Students will come in and sit with their groups the same as the previous class.

1. Do Now: With your group discuss ways that you have used your brain since we last met. In the ensuing discussion, select one student answer and challenge each group - brainstem, limbic system and cerebral cortex - to contribute a structure and function to the discussion.
2. Students will gather their workspaces and begin to conceptualize how they will use the given materials to show (a) where each part of the brain is physically located in the brain; (b) what the function of that part of the brain is; and (c) how that structure would respond in the given scenario.
 1. After students have made decisions about the colored macaroni and placement on their workspace, two students should begin affixing the macaroni to the workspace using glue.
 2. The remaining students should work together to utilize the information covered in the previous class - the function of each structure and how it would react in the given situation. They should prepare captions to be placed on the workspace directing the viewer's attention to each structure. Captions can be handwritten or typed.
3. The teacher will circulate around the room answering questions and providing support.
4. If time permits - or next lesson - students will present their workspaces to the class and explain how their section of the brain reacted to the scenario. The teacher will provide the students with information connecting the different areas, when appropriate, and assist students in seeing the interconnectedness of brain functioning.

NOTE: I colored the macaroni at home using directions from this [site](#)

Structure	Region of the Brain	Function	Application to Scenario
medulla	Brainstem		
reticular formation	Brainstem		
thalamus	Brainstem		
cerebellum	Brainstem		
hypothalamus	Limbic System Midbrain		
hippocampus	Limbic System Midbrain		
amygdala	Limbic System Midbrain		

Structure	Region of the Brain	Function	Application to Scenario
frontal lobes	Cerebral Cortex		
parietal lobes	Cerebrum		
occipital lobes	Cerebrum		
temporal lobes	Cerebrum		
motor cortex	Cerebrum		
somatosensory cortex	Cerebrum		









