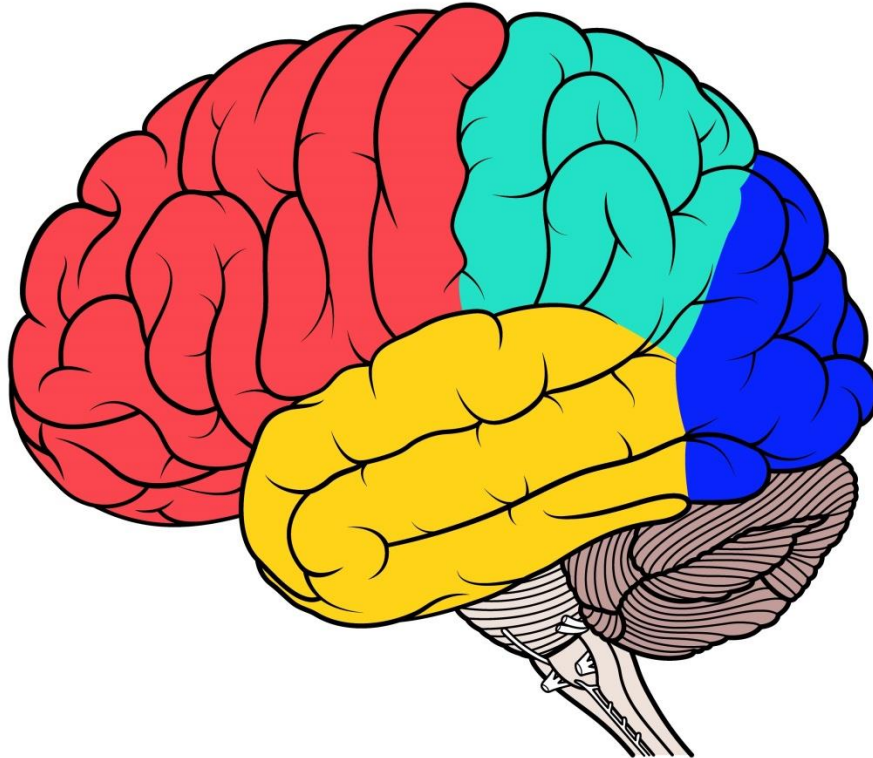


Inquiry Question

What are the different parts of my brain and what do they do?

Name: _____ **Date:** _____



The human brain is composed of many important parts. It includes the brainstem (the pathway between brain and spinal cord), the cerebellum (rear, lower portion), the hypothalamus and thalamus in the central region, the cerebrum (contains 2 hemispheres), and the corpus callosum (which holds these hemispheres together). The cerebrum is the largest part of the brain which consists of four main parts including: the frontal lobe, temporal lobe, parietal lobe, and occipital lobe.

All of these parts of the brain play critical roles in the normal functioning of the brain. Where are each of these parts located in the brain? What are the functions of each of these parts?

In this project you will learn about the different parts of the brain and the functions of each of these parts.

General Instructions

The goal of this project is to learn about the different parts of the brain and the functions of each part.

Materials you'll need:

- Water
- Napkins
- Acrylic paints (~10 colors)
- Plastic cups
- Paintbrushes (small and medium)
- Plastic paint palette with 6 wells (~15)
- Small plastic or paper plates

Materials for mini plaster brains:

- Plaster of Paris (\$5-\$10)
- Brain shaped ice cube tray
(Amazon – Fred's Brain Freeze Ice Cube Tray; makes 4 brains; \$4-\$8)
- Silicone spatula
- Glass bowl (Large)
- Water
- 1 cup measuring cup

Ideas and Hints:

- Complete the lab instructions on the following pages.

Project submission:

Create a series of diagrams, photos, or videos outlining your experiment and observations. If you can drop in to the school, you can present it to your teacher in-person. Otherwise, upload it to the project submission folder at the end of the unit.

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Do you know your brain? Hands-on activity

The purpose of this activity is to learn about the different parts of the brain and the functions of each part. Handouts (in color) with the parts of the brain and their functions as well as the plaster brains should be provided. Participants can paint the plaster brains by identifying the parts of the brain with a different color or by painting them in another way.



Materials:

- Water
- Napkins
- Acrylic paints (~10 colors)
- Plastic cups
- Paintbrushes (small and medium)
- Plastic paint palette with 6 wells (~15)
- Small plastic or paper plates

Materials for mini plaster brains:

- Plaster of Paris (\$5-\$10)
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- Glass bowl (Large)
- Water
- 1 cup measuring cup



Making the mini plaster brains



1. In a glass bowl, mix 2 cups of plaster of Paris with 1 cup of water. One mold takes 2 cups of plaster of Paris. Calculate accordingly.

2. Mix well until there is a homogeneous thick mix.

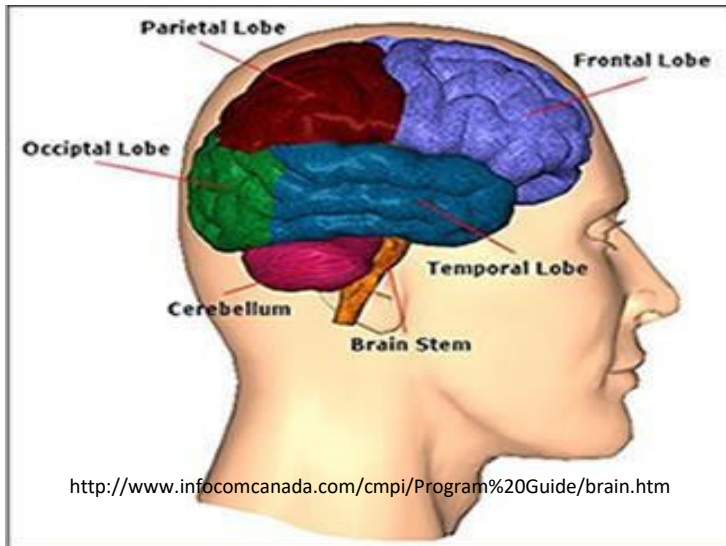
3. Pour the plaster in the molds, filling them up all the way to the top. Move the molds softly from side to side to allow the plaster to set nicely and also to allow the top to get flattened. Let dry for approximately 15 min (Plaster of Paris) or 5 min (Fast set plaster).

4. Remove brains from mold and let dry (for at least 24 hours) on top of tracing paper or paper towels, because as they dry they release some water. *I have used the brains 1 hour after they were made and they worked fine, but it is not preferred because it is harder for the acrylic paint to stay.

Notes:

- Provide color pictures of the different lobes of the brain.
- Have a sink nearby to periodically rinse out and replace paint trays.
- Suggest that brushes should be rinsed in between colors.
- This is a messy activity, especially with young children.
- Set up a table to allow kids to leave their plaster brains to dry

Parts of the Brain



Frontal lobe - Decision making, emotions, behavior, memory, movement

Temporal lobe - Language, hearing, memory

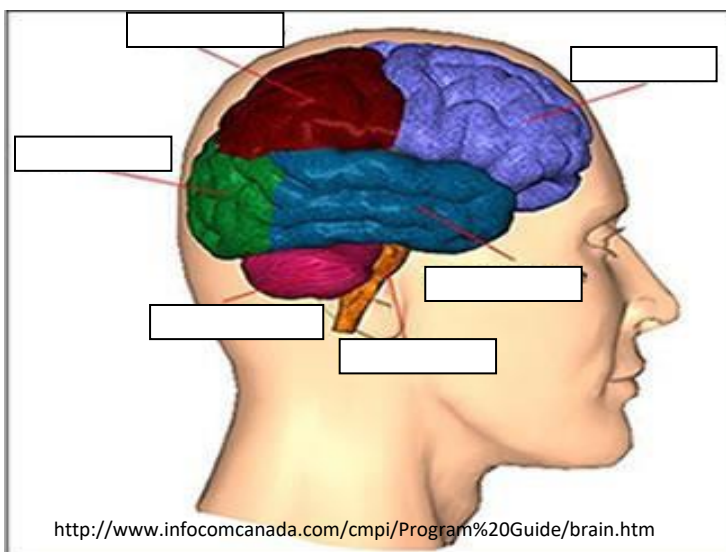
Occipital lobe – Vision

Parietal lobe – Sensory, spelling, spatial relationship

Cerebellum – Balance, motor coordination

Brainstem – Breathing, heart rate, sleep wake cycle

Parts of the Brain review test



Identify each lobe of the brain by writing the correct letter in the blank space. Choose from the following:

- a. Brainstem
- b. Occipital lobe
- c. Cerebellum
- d. Frontal lobe
- e. Temporal lobe
- f. Parietal lobe