



PLTW Virtual Learning

Medical Detectives

Lesson 23

May 6, 2020



7 & 8 Grade Medical Detectives

Lesson: May 6, 2020

Objective/Learning Target:
Lesson 23, Part 1

Students will be able to explain the brain, its function, and interesting facts about the brain and how it works.

Warm-Ups:

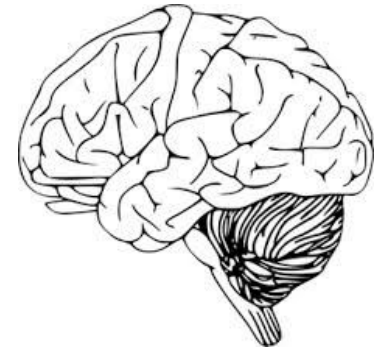
Quick Write:

The brain is a magnificent part of our body.

1. How many of the parts of the brain can you identify in the picture.
1. Do you know what those parts do?
2. What are three interesting facts you can share about the brain?

Take a minute to write **WHAT YOU KNOW!**

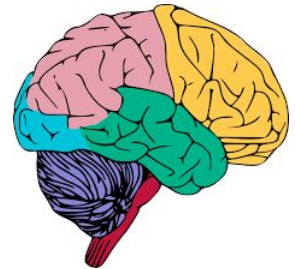
[One Minute Timer](#)



Lesson Introduction/Background Information:

The brain -- The portion of the central nervous system that is located within the skull. It functions as a primary receiver, organizer, and distributor of information for the body. It has a right half and a left half, each of which is called a hemisphere. It is often stated that people are right brain or left brain thinkers.

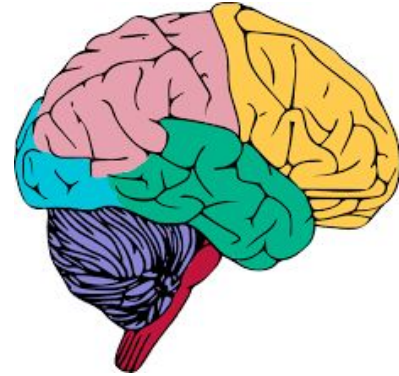
The brain -- brain is the command center for the human nervous system. It receives signals from the body's sensory organs and outputs information to the muscles. The human brain has the same basic structure as other mammal brains but is larger in relation to body size than any other mammals.



Practice:

Fun Facts About the Human Brain:

1. The human brain is the largest brain of all vertebrates relative to body size.
2. It weighs about 3.3 lbs. (1.5 kilograms).
3. The average brain has a volume of 1,274 cubic centimeters.
4. The brain makes up about 2 percent of a human's body weight.
5. The cerebrum makes up 85 percent of the brain's weight.
6. It contains about 86 billion, yes billion, nerve cells (neurons) – the "gray matter."
7. It contains billions of nerve fibers (axons and dendrites) – the "white matter."
8. These neurons are connected by trillions of connections, or synapses.
9. It comprises 60% of fat and is one of the fattest organs in the human body
10. Human brain has the capacity to generate approximately 23 watts of power when awake.
11. Of the total blood and oxygen that is produced in our body, the brain gets 20% of it.
12. When the blood supply to the brain stops, it's almost after 8-10 seconds that the brain starts losing consciousness.
13. The brain is capable of surviving for 5 to 6 minutes, only if it doesn't get oxygen, after which it dies.



Live Science - <https://www.livescience.com/29365-human-brain.html>

Science First - <https://www.sciencefirst.com/10-interesting-facts-about-the-human-brain/>

Practice:

Watch the video [Use Your Brain.](#)

Write down four takeaways you learned from watching the video.

1.

2.

3.

4.

Self Assessment:

Are some people able to achieve anything they want and others can't?

Can you achieve anything you want? Is it luck? Can you teach yourself?

Is your brain capable of achieving anything? Let's find out.

Watch the video, [10 Facts About the Brain That Prove You're Capable of Anything](#)

and let's find out. While you're watching, write down 5 of your favorite facts.

Fact #1

#2

#3

#4

#5

Extend Your Learning/Continued Practice:

As you're learning more about the amazing brain, watch the video, [How the Food You Eat Affects Your Brain](#) to give you tips on how to keep your brain healthy and working at its maximum capacity.

You can also watch [How Stress Affects Your Body](#). Remember, your brain is a muscle and can be trained to change old habits, form new habits, and learn faster but it has to be taken care of and knowing how is the key.