

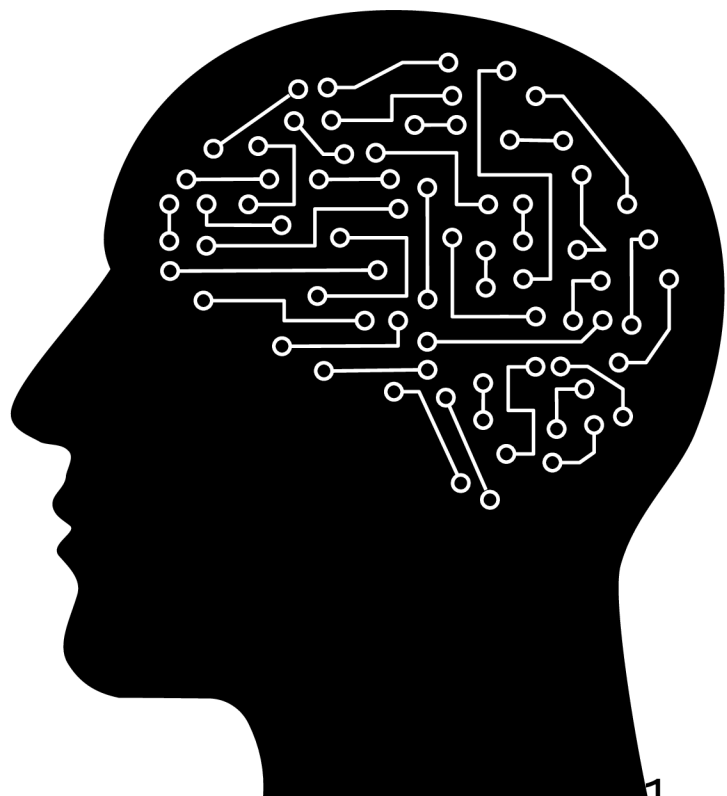
LET'S LEARN ABOUT THE BRAIN

ASSIGNMENT

READING
LEARNING
12 QUESTIONS
& ACTIVITY
plus FUN
FACTS

FOR TEENS

5 Pages



LET'S LEARN ABOUT THE BRAIN



The Fascinating Brain: Neuroplasticity and How the Brain Functions

The human brain is one of the most incredible and complex organs in the body. It allows us to think, learn, feel, and control everything we do—from moving our hands to solving difficult problems. Even though it weighs only about 3 pounds, the brain contains billions of cells working together to keep us alive and make us who we are. Let's dive into how the brain works and its amazing ability to change and adapt, known as neuroplasticity.

How the Brain Works

The brain is made up of billions of nerve cells called neurons. These neurons communicate with each other by sending tiny electrical and chemical signals. Every time you think, move, or experience something new, your neurons are firing and creating pathways in your brain. These pathways are like little roads that connect different parts of the brain to help it function.

The brain is divided into different parts, each with a specific job:

- **The Cerebrum:** This is the largest part of the brain. It controls thinking, memory, learning, and voluntary movements.
- **The Cerebellum:** This part is smaller and located at the back of the brain. It helps you balance, move smoothly, and coordinate your actions.
- **The Brainstem:** The brainstem connects the brain to the spinal cord and controls basic functions like breathing, heartbeat, and digestion.

The brain also works with the spinal cord and a network of nerves that run throughout your body. This system is called the **nervous system**. The brain sends and receives messages through this network at lightning speed, allowing you to react to things in a split second—like pulling your hand away from something hot.

What Is Neuroplasticity?

Neuroplasticity is the brain's ability to adapt and change. In the past, scientists believed that the brain stopped developing once you reached adulthood. However, we now know that the brain is constantly changing throughout your life, even as a teen or adult.

When you learn something new, like a skill or a language, your brain creates new connections between neurons. If you practice that skill, those connections become stronger and faster, just like building a stronger bridge. For example, if you start learning to play the piano, the first few days might feel hard. But the more you practice, the easier it becomes because your brain is building stronger pathways.

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Neuroplasticity also helps the brain heal. If part of the brain is damaged, other areas can sometimes take over its job. This ability to adapt and rewire itself is why people who suffer injuries or strokes can often recover and regain skills.

Keeping Your Brain Healthy

To keep your brain strong and healthy, you need to take care of it, just like any other part of your body. Here are a few ways you can do that:

- **Exercise:** Physical activity increases blood flow to the brain and helps it stay sharp.
- **Learn New Things:** Trying something new, like a sport or hobby, strengthens your brain and improves neuroplasticity.
- **Eat Brain-Healthy Foods:** Foods like fish, nuts, berries, and leafy greens provide nutrients that boost brain function.
- **Sleep Well:** Your brain needs rest to process information and repair itself. Teens need about 8-10 hours of sleep every night!
- **Reduce Stress:** Too much stress can harm the brain. Relaxing activities like drawing, reading, or meditation help keep your brain happy.

Fun Facts About the Brain

1. Your brain contains about 86 billion neurons!
2. It uses 20% of your body's energy, even though it's small.
3. Your brain never stops working—even when you're sleeping, it's busy organizing memories.
4. Learning new things actually makes your brain bigger and stronger.
5. The left side of your brain controls the right side of your body, and the right side of your brain controls the left!

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Questions

1. What are neurons, and what do they do?
2. Name the three main parts of the brain and one job each part does.
3. What is the nervous system, and how does it work with the brain?
4. What is neuroplasticity?
5. How does practicing a new skill, like playing piano, affect the brain?
6. What happens when part of the brain is damaged?

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7. Name two ways to keep your brain healthy and explain how they help.
8. How much sleep do teens need, and why is sleep important for the brain?
9. What percentage of your body's energy does the brain use?
10. What happens to your brain when you learn something new?
11. What foods are considered healthy for the brain? Name at least two.
12. What side of the brain controls the left side of your body?

Fun Activity: Build a Brain Map!

Draw or print a picture of a brain. Label the parts you learned about: the cerebrum, cerebellum, and brainstem. Then, add arrows showing how neurons send signals to different parts of the body. Use fun colors and add at least 3 brain facts to your drawing. Share your brain map with your family or friends!