



BRAIN LESSON “Mission Control” Fifth Grade

- **The MORE HEALTH website is equipped with a classroom TEACHER section.** Here you will find pre- and post-visit activities, vocabulary words, and in many cases pre- and post-visit videos.
- **Visit [morehealthinc.org](https://www.morehealthinc.org) – <https://www.morehealthinc.org/teachers/>**
- **Password: resources**

Pre-Visit Activities

- Review the enclosed Vocabulary. Students do not need to have a working knowledge of the words, but rather a beginning familiarity. Give each student the Brian Diagram (cross-section visual) to use as you go through the Vocabulary.
- Read aloud: *The Human Brain-Biology for Kids* by Baby Professor.
- Click the link to play video: ***How the Brain Works (3:41)*** <https://youtu.be/-nH4MRvO-10>
If time permits, there are activities and a quiz associated with the video on the website www.kidshealth.org.

Suggested Post-Visit Activities

- Enlarge the Brain Diagram (cross-section visual) and put it on the bulletin board. Have them use pictures or drawings to show what different parts of the brain do. Encourage them to use the Vocabulary words for clues.
- Have students choose one part of the brain (from vocabulary). Have them begin with the definitions and then look for more facts that they can use and present in one written or oral report on the brain.
- Have students look on the CDC or National Traffic Safety Administration websites to research statistics that indicate the number of brain injuries sustained during sport activities, bicycle or automobile crashes. Students can compare the statistics of brain injuries as they relate to age, state, and county.
- Have students drop an egg wrapped tightly in a paper towel on the floor. Have them do it again with an egg wrapped and now placed inside a helmet. Discuss the results as a group.
- Click the link to play video: ***A Healthy Brain! with MyBrainRobbie.org (6:04)*** <https://youtu.be/4haYIhc2uNI>
This video discusses eight ways children can keep their brain healthy.

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Vocabulary

- **abuse_n** to hurt by treating badly, mistreat (i.e., using drugs, alcohol, tobacco, overeating)
- **brain stem_n** structure that connects the cerebrum to the spinal cord and cerebellum. It consists of the midbrain, medulla oblongata, and the pons
- **cerebellum_n** responsible for muscle coordination and balance; controls voluntary reflexes
- **cerebral cortex_n** the outer layer of the brain; location of the convolutions or “wrinkles”
- **cerebrum_n** the largest part of the brain responsible for the five senses, short- and long-term memory, and speech
- **corpus callosum_n** a large bundle of nerves that connects the left and right sides/hemispheres of the brain
- **ejected_v** force or throw out, typically in a violent or sudden way
- **hippocampus_n** part of the brain located in the temporal lobes of the cerebrum responsible for processing long term memory and emotional response
- **hypothalamus_n** regulates body temperature, hunger, thirst, pain; controls the pituitary gland and the fight and flight response.
- **medulla oblongata_n** lowest part of the brain stem; controls involuntary reflexes like heartbeat, breathing, circulation, and blinking
- **microscopic_{adj}** so small as to be visible only with a microscope
- **neuron_n** nerve cell; the basic unit that carries out the work of the nervous system
- **pituitary gland_n** pea-sized gland at the base of the brain that creates and distributes the hormones your body needs
- **severed_{adj}** having been cut or sliced off
- **spinal cord_n** bundle of nerves that send messages between the brain and other parts of the body
- **thalamus_n** small structure in the brain that acts as the relay station that receives messages and sends them to the proper place in the brain

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BRAIN LESSON “*Mission Control*”

Fifth Grade

Goals

- Students will understand the structure and function of the brain.
- Students will understand their responsibility to protect their brain and spinal cord from injuries and damage.

Objectives

- Students will be able to name at least five parts of the brain and their functions.
- Students will be able to name at least four ways to protect their brain and spinal cord.
- Students will be able to explain at least two reasons why they should protect their brains from alcohol or drugs abuse.

Standards

The student will...

- HE.5.C.1.1 describe the relationship between healthy behaviors and personal health.
- HE.5.C.1.4 compare ways to prevent common childhood injuries and health problems.
- HE.5.C.2.4 give examples of school and public health policies that influence health promotion and disease prevention.
- HE.5.C.2.8 investigate influences that change health beliefs and behaviors.
- HE.5.P.7.1 model responsible personal health behaviors.
- HE.5.P.7.2 illustrate a variety of healthy practices and behaviors to maintain or improve personal health and reduce health risks.
- He.5.P.8.1 persuade others to make positive health choices.
- HE.5.B.3.1 discuss characteristics of valid health information, products, and services (*suggested post-visit activity*)
- HE.5.B.3.3 compile resources from home, school, and community, technologies that provide valid health information. (*suggested post-visit activity*)
- HE.5.B.5.1 describe circumstances that can help or hinder healthy decision making.
- HE.5.B.5.2 summarize healthy options to health-related issues or problems.
- HE.5.B.5.3 compare the potential short-term impact of each option on self and others when making a health-related decision.
- HE.5.B.5.4 select a healthy option when making decisions for yourself and/or others.

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- SC.5.L.14.1 identify the organs in the human body and describe their functions, including the skin, brain, heart, lungs, stomach, liver, intestines, pancreas, muscles, and skeleton, reproductive organs, kidneys, bladder, and sensory organs.
- ELA.5.V.1.1 use grade-level academic vocabulary appropriately in speaking and writing.
- ELA.5.C.1.4 write expository texts about a topic using multiple sources and including an organizational structure, relevant elaboration, and varied transitions.
(suggested post-visit activity)
- ELA.5.C.1.5 improve writing by planning, revising, and editing, with guidance and support from adults and feedback from peers. *(suggested post-visit activity)*
- ELA.5.C.2.1 present information orally, in a logical sequence, using nonverbal cues, appropriate volume, clear pronunciation, and appropriate pacing. *(suggested post-visit activity)*
- ELA.5.C.3.1 follow the rules of standard English grammar, punctuation, capitalization, and spelling appropriate to grade level. *(suggested post-visit activity)*
- ELA.5.C.4.1 conduct research to answer a question, organizing information about the topic and using multiple reliable and valid sources. *(suggested post-visit activity)*

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BRAIN WORKSHEET ANSWER KEY

Your brain is made up of 75 % water.

There are 100,000 miles of blood vessels in your brain.

The spinal column is made up of 33 vertebrae that protect the spinal cord.

There are 86 billion neurons in your brain.

Neurons can travel up to 280 miles per hour.

Most common causes for spinal cord injuries in the US:

automobile accidents

jumps and falls

diving into water

Ways to prevent these spinal cord injuries? wear seatbelt, steady ladder, enter water feet first

Cerebrum is responsible for:

1. 5 senses 3. long (memory)

2. speech 4. short (memory)

Memory Test:

- | | |
|-----------------|------------------|
| 1. <u>water</u> | 6. <u>ball</u> |
| 2. <u>dog</u> | 7. <u>rabbit</u> |
| 3. <u>home</u> | 8. <u>apple</u> |
| 4. <u>line</u> | 9. <u>sheep</u> |
| 5. <u>mouse</u> | 10. <u>bed</u> |

Write the seven-letter word that you see: SCIENCE

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Corpus Callosum is a bundle of nerves that connects the 2 halves or hemispheres.

How many messages can be sent per second? 4 billion

Our brain is cross - wired!

Cerebellum gives us balance and coordination.

Thalamus receives messages and sends them to the right place in the brain.

Hypothalamus

1. hunger
2. thirst
3. pain
4. body temperature
5. fight or flight
6. Pituitary gland

What word association helps you remember what the Medulla Oblongata does?

Hakuna Matata means No Worries

The brain relies on blood to provide nutrients and oxygen to help it function.

Eating healthy food helps the brain’s memory and function. exercise helps with intellectual performance (better concentration, problem solving, memory, etc.).

Protecting our skull also protects our brain.

On wheels, if you are under the age of 16 you must wear a helmet.

TBI stands for traumatic brain injury.

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