

Brain Waves

“Ask Me Anything”

Brain Waves is a fun and educational program for elementary students. Students learn about the structure and function of the nervous system, through experiments and interactive lessons, and about the importance of protecting the brain and spinal cord from injury. As part of the Brain Waves experience, this “Ask Me Anything” sheet is designed to help you, as a parent/caregiver, engage in the learning experience of your child. Discuss the following questions with your child to help ensure that the critical learning taking place in the classroom can be carried home and shared and reinforced with parents/caregivers. Questions about Brain Waves can be directed to brainwaves@parachutecanada.org.

KEY Take-Home Messages

1. Why is the brain so important?

The brain controls our entire body. It controls our ability to think, move, see, hear, taste, and smell.

2. Why are we capable of language, planning, fine motor movements, personality, etc, but other mammals are not?

What distinguishes humans from other animals is our large cerebrum (the two massive hemispheres on the top of the brain). Our cerebrum, or neocortex, is the most advanced cortex amongst mammals.

3. What would happen if we injured one of our brain lobes?

An injury to one of our brain lobes could be life altering. For example, if your occipital lobe is damaged, you could be blind even though your eyes are in perfect condition! Furthermore, someone with damage to Broca’s area of the frontal lobe will not be able to speak properly, and damage to the Wernicke’s area of the temporal lobe will affect understanding language.

4. What are neurons and why are they important?

The human brain is made up of billions of cells called Neurons! Many neurons produce signals (packets of information) and pass them on to other neurons. This neuronal activity is how we think, move, and feel. Unlike skin cells, hair cells, or breaking an arm, damaged neurons cannot grow back. Prevention is the best “cure” for brain damage.



5. What is a concussion?

A concussion is a brain injury that can affect the way a person thinks, behaves, and feels. Any blow to the head, face, neck, or body, which causes jarring of the brain inside the skull might cause a concussion. A concussion is referred to as the invisible brain injury because it cannot be detected directly from medical imaging tests.

6. What are some of the signs and symptoms of a concussion?

The signs and symptoms of a suspected concussion will vary for each individual. Signs and symptoms are placed into 4 categories: physical (headache, vomiting, dizziness, etc), cognitive (confusion, difficulty remembering / concentrating, etc), emotional (sadness, moody, grumpy, nervous or anxious, etc), and sleep disturbance (difficulty falling asleep or staying asleep). Symptoms may not appear immediately after the injury. The student must not return to play the same day and be monitored for symptoms for at least 24 hours.

7. What is the 2V1 rule for wearing a bike helmet?

2 fingers above your eyebrows; strap forms a V under your ears; 1 finger between the strap and chin. The human skull is just one centimetre thick. A properly fitted helmet helps protect your brain from absorbing the force from a crash or a fall. A properly fitted and correctly worn bike helmet can make a dramatic difference, cutting the risk of serious head injury by up to 80 per cent.



Additional Questions:

8. What is a reflex?

A reflex is a reaction by the body that cannot be consciously controlled. An outside stimulus is detected by the sensory neurons. An electrical impulse is sent to the motor neurons, which send this information to the muscles to cause a contraction.

9. What is adaptation and why is it important?

Adaptation is experienced when a stimulus is present for a long time. For example, after being in a freshly painted room for a while, the smell might not be as strong. However, someone entering the room for the first time will find the smell very strong because they are not adapted. If we smelled everything all the time, we would be overloaded with stimulants.

10. What is receptor distribution?

The distribution of receptors within our bodies. There are more touch receptors at the fingertips than the back or arms. The amount of brain for each body part is important to determine how sensitive that body part is to touch. The more brain it has, the more sensitive it is.