

Learning About Your Brain

How to Respect and Protect It!



Lesson Plans & Activities



Lesson Plan 1

Today we are going to learn about your brain and how important it is. We will learn how it controls everything we do. Have the children locate their brains.

Reference page 3 in the activity book

Discuss some of the functions controlled by the brain. Some examples are feeding ourselves and being able to run and play.

The brain is the control center for every human being. Messages between the brain and the rest of the body are carried back and forth by our nerve cells (sometimes called neurons). Nerve cells also communicate with each other. The place where two nerve cells meet and exchange information is called a synapse.

Activity 1: Write down the following words on a small piece of paper and place them in a hat or box so that the children can draw a name. Each student is to act out the function of the name they drew without saying anything. Go around the room until all the words are used.

Word List: Sleep, eating, movement, memory, drinking, reading, sleeping, heart, balance, thinking, breathing, planning, speaking, touch, and hearing.

Activity 2: Materials Needed

- *Loaf of bread*
- *Peanut butter*
- *Jelly*
- *Plastic knives*
- *Several blindfolds*

Have students choose a partner. One student will be blindfolded while the other gives directions on how to make a peanut butter and jelly sandwich. The blindfolded student must locate the bread, peanut butter, jelly and knife. The student begins to put the sandwich together.

Follow up question: How does it feel to complete this activity without being able to see?

Lesson plan 2

Discuss what a Traumatic Brain Injury is. Traumatic Brain Injury occurs when your head hits or is hit by a sudden physical force, causing damage to the brain.

Discuss ways you could sustain a traumatic brain injury.

Examples:

- You could get a traumatic brain injury from falling out of a tree
- Falling off your bike
- Diving into shallow water when swimming

If you hit your head hard enough, it's possible to have a brain injury even if there are no visible cuts or bruises on your head. Brain injuries are often invisible.

Reference page 4 of the activity book

Discuss ways to prevent brain injuries:

- Bike safety starts with the use of a bike helmet. Many bike crashes involving children happen when they ride their bicycle down the driveway or from a sidewalk into the street, right in front of a car.
 - You must look left, right, and left again before crossing an intersection. At a busy intersection, get off your bike and walk it to the other side of the street.
 - Always wear bright colored clothes so that you can be seen.
- Using helmets and other protective gear for sports such as football and hockey
- Wearing seatbelts in the car is also very important.

Lesson plan 3

Reference page 5 of the activity book

The brain is divided into sections. Some of these sections are called lobes. Each lobe controls different functions of the body and the mind. For example, if you injure the front part of your brain (called the frontal lobe), you are likely to have problems with thinking and speaking. If you injure the back of your brain, you may have problems with your vision.

The brain is not attached to anything except the spinal cord, which is the main pathway for information between the brain and the rest of the body. Under normal conditions, the brain floats inside the skull in a liquid called cerebrospinal fluid.

Activity 3: Mr. Egghead

Materials needed:

- *Raw egg*
- *Styrofoam peanuts*
- *Plastic trash bag*
- *Felt tip markers to draw a face on the egg*
- *Bicycle helmet*
- *Cardboard box*

Cerebrospinal fluid has more than one function. One of its most important jobs is to protect the brain from sudden impacts. Mr. Egghead is a raw egg. The inside of the egg represents the brain. The outside or the shell represents the meninges or the covering of the brain. Draw a face on Mr. Egghead and set him aside.

Display the bike helmet and point out the inner lining made of Styrofoam. Next, show the box of Styrofoam peanuts. The peanuts will represent the lining of a bike helmet.

Gently drop Mr. Egghead into the peanuts and it will not break. Then drop the egg on a plastic trash bag on the floor. The egg will shatter. Share with the students that this is what could happen to your brain if you hit your head hard without wearing a bike helmet. At this point most students will make a positive decision to wear a helmet.

Tell the students if their helmet has been in a crash, they should replace it. A damaged helmet may not protect their brain anymore.

Teachers can also refer to the purple pads for the signs and symptoms of a traumatic brain injury and the BIAF brochure, How to Fit and Wear your Bicycle Helmet.

Lesson 4

How does your brain work?

Reference pages 6 and 7 in the activity book

This is a great activity to build vocabulary as well as learn about the brain. Students should fill in the crossword puzzle on page 6 of the activity book.

Vocabulary words to be discussed:

- Axon: The long arm of a nerve cell
- Dendrite: The neuron that tells muscles to move
- Synapse: A nerve junction where cells talk to one another
- Neuron: the nerve cell body and all of its processes
- Respect: To show consideration for

It is important that students learn about protecting their brain and ways to prevent injury to the brain

Activity 4: For this activity, divide the students into several small groups. Have them brainstorm about activities and sports that require a helmet to prevent brain injuries.

Some suggestions: Football, Hockey, Baseball, Skate Boarding, Bicycle riding, Horseback riding, Scooters and ATV's. Falls from trees and playground equipment can also cause a traumatic brain injury as well as diving into shallow water. Because car crashes and pedestrian accidents are a major cause of brain injuries, it is very important to wear seat belts in the car, follow the rules and be very alert when crossing the street.

Refer to page 7 in the activity book.

Discuss the importance of wearing a properly fitted helmet for the activities that were discussed. Point out that there are different types of helmets for different sports and activities. Remind the students that if they are ever in a crash with their helmet, it needs to be immediately replaced.

Refer to the BIAF brochure, How to Fit and Wear your Bicycle Helmet

Lesson 5:

Reference page 8 in the activity book - Have students unscramble the words

Today we are going to talk about concussions. Ask the students if they know what a concussion is. You might ask if any of them have had a concussion or know someone who has.

We have already discussed different sports and activities that can cause a brain injury. Sometimes, just playing roughly can cause you to hit your head hard enough to injure your brain. Concussion is another word for brain injury.

Show students the concussion poster in your resource packet provided by BIAF.

If you do have a concussion, it is very important to take proper care of yourself in order to get better as soon as possible.

- You should be checked by a doctor as soon as possible.
- You will need to get plenty of rest.
- Make sure you avoid activities that could cause you to injure your head again until you are completely healed.
- If your head is injured while playing sports, the coach will need to take you out of the game. Do not beg the coach to go back in. If you receive a second blow to the head after having a concussion, it could cause very serious harm to your brain.
- It is important for you and your parents to let the teachers, coaches and babysitters know what happened and how they can help you to take care of yourself.
- Be aware that sometimes signs and symptoms of a concussion or traumatic brain injury may not show up until weeks or months later.

Teachers can refer to the purple pad in your packet; review the children's section.

Refer to page 9 in the activity book.

Activity: Have students do a creative writing on concussions and what they have learned about the brain.

Share with students that if they know someone who has had a traumatic brain injury, Brain Injury Association of Florida may be able to help them. Toll-free Helpline: 800-992-3442

These lessons meet the following Sunshine State Standards:

Course: Health: HE 4.C.1.6 Identify the human body parts and organs that work together to form healthy body systems.

HE4.P.2.1. Assist others to make a positive choice

HE 4.P.1.3 Illustrate a variety of healthy practices and behaviors that avoid or reduce health risks

HE.4.C.1.4. Describe ways to prevent common childhood injuries and health problems

HE.3.4.In.a Recognize a short term personal health goal and track progress toward achieving the goal, such as participating in daily physical activity, wearing seatbelts, and helmets consistently.

Learning About Traumatic Brain Injury - A Disability Often in Disguise is a self-study course for educators to raise awareness of the incidence and effects of TBI in school, and to provide information and strategies to help teachers who are facing the unique challenges of educating students with TBI. For more information, visit our website: www.byyourside.org.

Funded by the State of Florida, Department of Health, Brain & Spinal Cord Injury Program

Brain Injury Association of Florida, Inc. ♦ HELPLINE: 800-992-3442 ♦ www.byyourside.org