

## **Grade 5: Healthy Body**

### **Lesson 5: Play It Safe with Your Brain!**

#### **Objectives:**

1. Students will identify and explain the differences between three kinds of head injuries.
2. Students will identify five head injury symptoms.
3. Students will practice the correct way to wear a helmet.
4. Students will research different bicycle helmets and how to pick out the best helmet.
5. Students will research different topics about helmets to become more informed about helmets.

#### **Materials:**

- Eggs
- Computers – Internet Access
- Helmets for different sport/activities (bicycle, softball, skateboarding, etc.) Ask students to bring to class the helmets they use for different activities. Or ask a local sport store if a representative of the store could come to class to do a short presentation on using helmets and bring examples of different helmets for different sports/activities.
- Poster board
- Paint or drawing markers
- Graph paper

#### **Activity Summary:**

In this activity students will learn about different types of head injuries, how to use helmets properly and how to evaluate the safety features of helmets.

#### **Background information for the teacher:**

Head injuries are one of the most common causes of injury and death in children. The term head injury broadly covers many different kinds of trauma to the head, scalp, and brain. The causes of head injuries in children are numerous, and range from major and minor accidents of all sorts (sports, vehicle, falls, etc.) to harm inflicted by others.

Head injury is twice as prevalent in boys than girls. More injuries occur in the spring and summer months when children spend more time outside. Also, the time of most danger is late afternoon and early evening as well as weekends. (Source: Children's Hospital Boston)

Different kinds of head injuries can occur.

Concussion – A violent shaking or jarring. An injury to the brain produced by a violent blow and followed by a temporary or prolonged loss of awareness or alertness.

Contusion – Bruise to the brain with bleeding and swelling on the brain itself where the injury occurred. Internal bleeding is caused by the brain hitting against the skull bones.

Skull fracture – Break in the bones that surround and protect the brain.

#### Common signs of a head injury

Mild –

- Bump or bruise at the injury site
- Small cut and moderate bleeding
- Headache

Moderate to severe –

- Loss of consciousness
- Blurred vision
- Severe headache
- Deep cut or open wound in the scalp
- Vomiting
- Dizziness, loss of balance, difficulty walking
- Slurred speech
- Behavior changes

The best *treatment* for head injury is *prevention* of injury in the first place.

Bicycle accidents are especially prevalent and harmful to children. More children need emergency care because of bicycle accidents than any other sport. Every day approximately 1000 children go to the hospital with bike injuries. Wearing a helmet can lower the risk of head injury in a bicycle accident up to 85%. (Source: Consumer Products Safety Commission)

### Safety Common Sense

#### Sports

Wear protective gear and appropriate sports/play clothes

1. Helmets especially should be worn when:

- Riding a bike, motorcycle, scooter, skateboard snowmobile, or all-terrain vehicle;
- In-line skating;
- Playing a contact sport such as football, ice hockey, boxing;
- Playing softball or baseball;
- Riding a horse;
- Skiing, snowboarding.

It is important to wear the right helmet for the right sport in the right way.

2. Wear closed-toe shoes that stay on the feet when playing. Open-toe shoes, sandals, flip-flops, clogs, and platform shoes make running and playing the sport unsafe. Tripping and falling can exacerbate the chance of having a head injury.
3. Know the safety rules, and follow the safety rules of the sport or activity.
4. Pay attention to others around you. Be mindful of where others are when you swing the bat, hit or throw the ball, riding a skateboard, skiing, etc.

Vehicles-

- Sit in the back seat
- Wear the safety belt

**Vocabulary:**

- Head injury
- Contusion
- Concussion
- Skull fracture
- Safety standards

**Engage**

Put students into groups of 5. Give each group one egg. Place materials such as bubble wrap, paper, Styrofoam, etc... that students can use to protect their egg. Tell the students that they need to prevent their egg from breaking when dropped. (If you have stairs available drop the eggs from the top of the stairs). Tell students they may use any of the materials that you have provided to protect their egg. Drop eggs and talk about what they did to protect their eggs.

Tell students that the eggs are like our heads when we are doing activities like riding bike. Ask: what do we use to protect our heads? (helmets) Tell them that today they are going to look at different designs of helmets to determine which are best. Just like dropping our eggs some materials worked better to protect the eggs from breaking.

**Explore**

Have students explore different helmets.

Put students in groups of three. Each group will need to share one computer and look at each of the websites below. Students will be assigned to read each of the web sites listed below. First they must read the Consumer's Guide to Bicycle Helmets and look for information on what to look for when buying a helmet. Next they must research the four websites below. They must compare what they learned about buying a helmet and the helmets listed below. Then they must pick what they believe to be the best helmet and present their choice and reasons. Prepare a persuasive speech and a poster to advertise it.

A Consumer's Guide to Bicycle Helmets

<http://www.bhsi.org/guide.htm>

Go to the following websites:

Bell

<http://www.bellbikehelmets.com/productDetail.asp?prodID=25>

Schwinn Intercept Helmet

<http://products.consumerguide.com/reviews/product.epub?productId=28679>

Specialized Air Force

<http://specialized.com/bc/SBCEqProduct.jsp?spid=15920>

Louis Garneau Grunge X

<http://www.louisgarneau.com/usa/iframe.asp?Content=CyclingHelmets>

### **Explain**

Have each group present.

The following is the 2006 Consumer Report on youth bicycle helmets.

<http://www.consumerreports.org/cro/travel/bike-helmets-606/ratings/latest-ratings/index.htm>

One of the most important pieces of safety gear you need is a helmet. It is important to wear the right helmet in the right way.

What is the right way to wear a bicycle helmet?

Four things to pay attention to:

1. Wear the helmet flat across the top of the head. (This protects the forehead and frontal areas of the brain.)
2. Don't tilt the helmet back.
3. Make sure the helmet fits snugly, not loosely on the head so it doesn't slide around.
4. Use the chin strap and make it secure.

Use the demonstration helmets.

Options:

If there are enough helmets have the students pair up or organize in small groups. Give each pair/group a helmet. Ask them to put it on one member of the pair/group showing the correct way to wear the helmet.

Or,

Use one helmet and have one student volunteer. Have the class instruct the teacher (classroom aide) in the proper helmet positioning

Or,

If there are not enough helmets, have each student do a simple drawing showing the four steps in placing the helmet.

Note: If a speaker has been arranged for the class, have the speaker give feedback to the students about how they positioned the helmet. At this time, the speaker can show helmets for three or four different activities, discuss why they are different, and the main things to know when picking a helmet for each activity.

Ask: What can happen to you when you don't wear a helmet and have an accident? (Head and/or brain injury)

Ask: What kinds of head injury can happen?

Head injuries can range from a small scrap and cut to very serious and even permanent brain damage. There are three categories of head injury:

1. Concussion – Immediate loss of awareness or alertness for a short time after the injury.
2. Contusion – Bruise to the brain with bleeding and swelling on the brain itself where the injury occurred. Internal bleeding is caused when the brain hitting against the skull bones.
3. Skull fracture – Break in the bones that surround and protect the brain.

What are some effects of head injury?

Mild –

- Bump or bruise at the injury site
- Small cut and moderate bleeding
- Headache

Moderate to severe –

- Loss of consciousness
- Blurred vision
- Severe headache
- Deep cut or open wound in the scalp
- Vomiting
- Dizziness, loss of balance, difficulty walking
- Slurred speech
- Behavior changes

What do you think the most effective way is to treat for head injury? Not let it happen in the first place. Prevent the chance of injury occurring. Wear the right helmet for the activity in the right way!

Bonus Question -

What is a very simple and very important thing to do when you are playing your activity or sport that also protects your brain from injury?

Drinks lots of water. Lots. Don't get dehydrated. Don't get thirsty. When you feel thirsty, you are already dehydrated. Drink water **before** you feel thirsty.

### **Extend**

Using the following website <http://www.helmets.org/index.htm> assign or let students pick a different topic to research.

Topic Ideas:

Types of Helmets: <http://www.helmets.org/types.htm>

How to Fit a Helmet: <http://www.helmets.org/fit.htm>

Helmet Sizing: <http://www.helmets.org/sizing.htm>

Helmet Related Statistics: <http://www.helmets.org/sizing.htm>

How Helmets are Tested: <http://www.helmets.org/testing.htm>

There are numerous other topics on this website. You may pick topics that students can choose from or you may want to let students explore the website and pick their own topic to research.

Have students create a poster and a short presentation.  
Create a poster for the Nervous System Info Fair.

### **Evaluate**

Have students write a letter to the town council explaining why the town should make people wear helmets and suggest ways to pick out a safe helmet. Students may want to suggest a helmet that they think the town council could suggest to the community. You may decide whether or not they send it to the city council or if they just do it as a hypothetical situation.

### **Additional Web Resources**

Consumer Product Safety Commission  
[www.cpsc.gov/kids/kidsafety/index](http://www.cpsc.gov/kids/kidsafety/index)

Snell Memorial Foundation  
[www.smf.org/](http://www.smf.org/)

Children's Hospital Boston  
<http://www.childrenshospital.org/>

Center for Disease Control  
<http://www.cdc.gov/>

KidsHealth  
[http://kidshealth.org/kid/watch/out/sport\\_safety.html](http://kidshealth.org/kid/watch/out/sport_safety.html)

US Consumer Product Safety Commission  
<http://www.cpsc.gov/library/helmet.html>

Bicycle Helmet Safety Institute  
<http://www.bhsi.org/index.htm>

### **Missouri Standards:**

Health and Physical Education

III. Risk Assessment and Reduction

B. Injury Prevention and Safety

What all Students Should Know

1. There are ways to assess potential unsafe situation in their physical and social environment

What All Students Should Be Able To Do

- a. Recognize problems in daily living that may contribute to self destructive behaviors and apply strategies to reduce the risk of harm to self and others

### What All Students Should Know

2. Sports-related injuries can be reduced or avoided through the use of appropriate safety equipment and first aid guidelines.