Science: Helmet Safety Egg Drop, 45 minutes

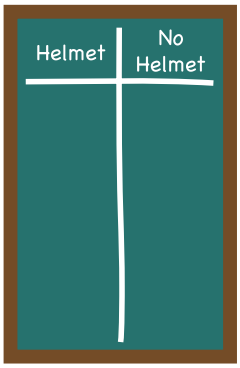
Objectives: Students will be able to:

» Discuss the reasons why people choose to wear or not to wear bicycle helmets.
» Explain how a helmet protects the brain and discuss what kind of consequences result from a brain injury.

Activity Book Connection: "Helmet fitting", page 5

MATERIALS:

» T-chart (drawing on the board is fine)
» 2 Eggs
» 2 zip-lock plastic bags
» 1 Styrofoam cup lined with paper towel
» Brain diagram (see page 61 of Teacher's Guide)



1. T CHART (7 MINUTES): Create a t-chart like the one to the right.

» In the first column write "Helmet" and in the second column write "No Helmet".
» Hold a classroom discussion by asking students why it is important to wear a helmet or why they choose to wear a helmet if they do. Record those answers in column 1.
» Ask the students what they think holds people back from wearing helmets. Record student responses in column 2.

Note: This lesson is designed to allow students to come to their own opinion that wearing a helmet is the right choice.

2. PEOPLE WHO LOVE WHAT THEY DO WEAR HELMETS (8 MINUTES): Ask the students, "Who do you see wearing helmets in the world?" (Common answers include athletes, firemen, astronauts, skaters, construction workers, etc.)

» Help students make this connection: **People wear helmets because they love what they do and want to keep doing it.** For example, a football player could not be successful if he played without a helmet because he would get hurt and no longer be able to play!

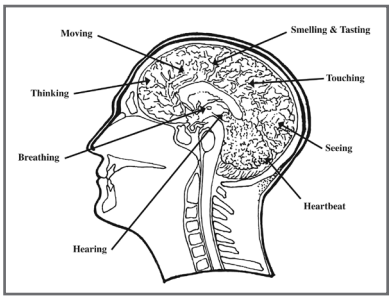
3. SMALL GROUP DISCUSSION (5 MINUTES): Instruct students to discuss the following two questions. Have them choose one student who will share a few of the group's responses after 5 minutes.

1. What can happen if you don't wear a helmet?
2. Have you or someone you know been hurt by not wearing a helmet?

4. CLASS DISCUSSION (5 MINUTES): Have one person from each group share their answers from the small group questions. Below are sample responses to what can happen when you don't wear a helmet. Use the brain diagram (page 61) to further emphasize the importance of the brain for all human functions. Examples of brain injuries include:

- Not being able to speak
- Not being able to see
- Not being able to hear
- Having frequent headaches/migraines
- Not being able to move your arms and/or legs
- Having seizures
- Not being able to remember things, like your friends' names
- Having frequent mood swings (anxiety or depression)
- Having trouble socializing with others
- Not being able to get your driver's license—EVER

5. BRAIN CHART (5 MINUTES): Show students the brain chart. Briefly discuss how different parts of your brain control different functions in the body. If we hurt a specific part of our brain, we could lose control over another body function as well.



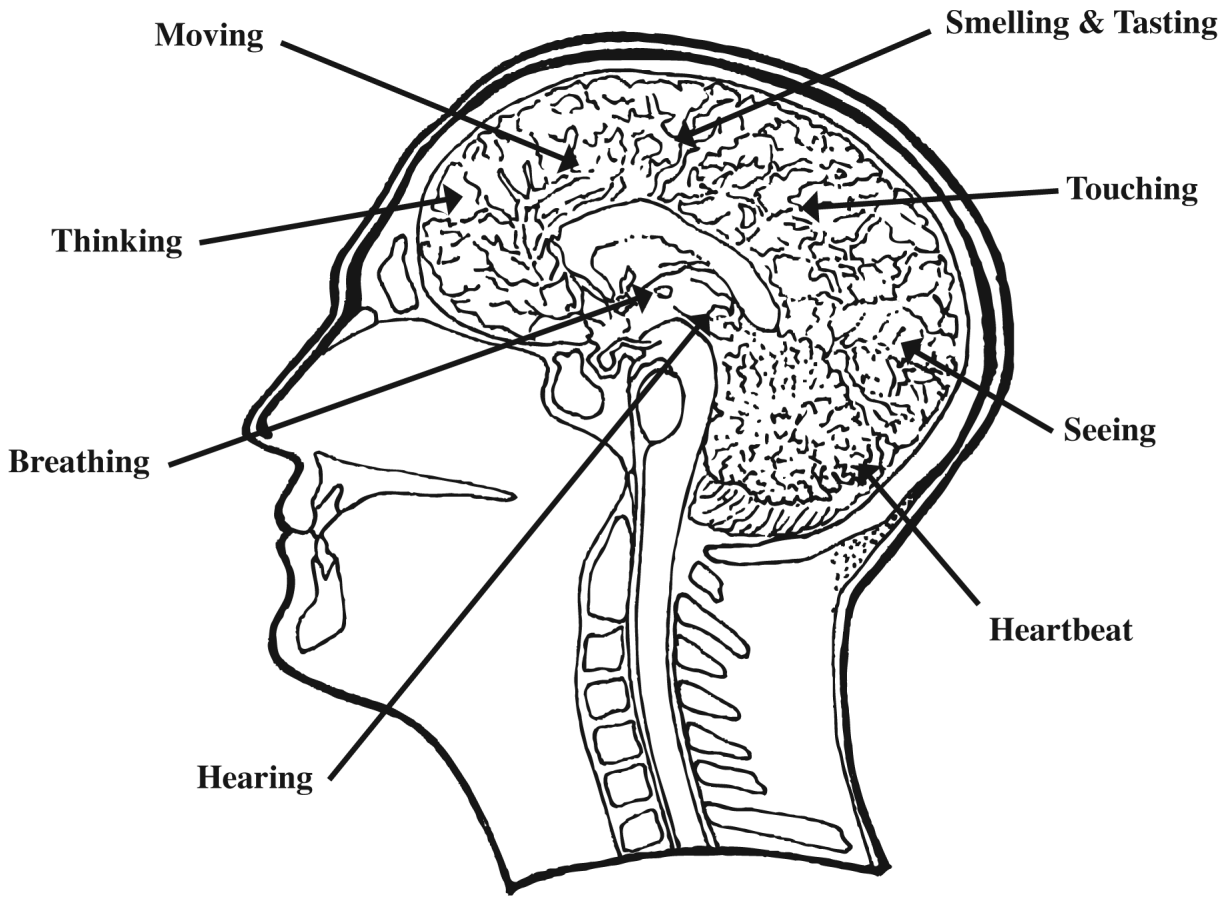
6. EGG DROP (15 MINUTES): To demonstrate how a helmet protects our brain, complete an egg drop demonstration.

1. Place two eggs in zip lock bags
2. Wrap one egg in a paper towel and place it in a Styrofoam cup. The cup represents the helmet. Drop the cup from your waist straight to the floor.
   - The egg should not break (though it may have cracks).
   - Allow the students to make observations, but do not hold the discussion yet.
3. Take the egg in the other bag and drop it to the floor. The egg will break.
4. Call on students to share their conclusions about what this demonstration means: **Helmets will protect our brains from getting hurt.**
5. Share with the students that helmets are made out of thick Styrofoam that protects our head.

TIP *For a more hands-on lesson, pair students up and let each pair of students drop the eggs and record their observations.* ***Add on an additional 10–15 minutes for this procedure!***

PA Science Standards

- **3.4.5.D3:** Helmet Safety Egg Drop Demonstration: Determine if the human use of a product or a system creates positive or negative results.


Moving
Smelling & Tasting
Touching
Thinking
Seeing
Breathing
Heartbeat
Hearing