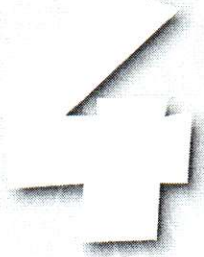


Media Health Lesson - Grade 5

LESSON



car safety

Objectives

Learners will . . .

- identify and discuss facts related to automobile accidents and injuries
- communicate the importance of wearing a safety belt
- explain why they should always wear a safety belt and remind others to do so

Materials

- Newton's Laws of Motion and fill-in-the-blank written on board
- Activity sheet: *Car Safety Word Scramble*
- Paper/pencil

Vocabulary

- **Motion**—what occurs when something changes place
- **Force**—an action, a push or a pull that makes something move, change direction or stop
- **Inertia**—the tendency of an object to keep moving until something works against the motion

RECAP

Tell students last lesson they learned to follow safety rules and wear protective gear when riding bicycles, skates, skateboards, etc.

KEY MESSAGE

Write on board and tell students:

***Wear your safety belt
when riding in a vehicle to
reduce your risk of injury.***

Prepared exclusively for Britta Sparks (sparksbr@calvertnet.k12.md.us) Transaction: #0001092786

INTRODUCTION

Ask students how many of them ride in an automobile on a regular basis. Ask students how many of them buckle up whenever they are in a car or truck no matter how short the trip. Tell the students that you are going to share some important information with them regarding automobile safety. Emphasize the importance of using a safety belt. Discuss the following statistics with the students:

- Every 10 seconds, someone is injured and taken to an emergency department from a vehicle crash.
- Every 12 minutes, someone dies in a vehicle crash.
- Motor vehicle crashes are the leading cause of death among children in the U.S.
- Most vehicle crashes take place close to home (within 25 miles of home).
- In 2008, 968 children died in motor vehicle crashes and nearly half were unrestrained.
- In 2008, 168,000 children under age 14 were injured in vehicle crashes.
- The backseat is the safest place for children to ride under the age of 12.

ACTIVITIES



ONE—SCIENCE

Ask students if they have ever been in a car when the driver has applied the brakes hard. Did you move forward? Did you hit something? Were you restrained? How did the restraint operate? Were you pulled back into your seat? Do you know what happened?

Tell the students that a famous scientist named Sir Isaac Newton studied how motion worked back in the 16th century. Through his work, Newton discovered three ways that all things move—no matter how small or large. They are called Newton's Three Laws of Motion.

- **Newton's First Law of Motion**
An object at rest stays at rest, or an object that is moving at a speed in a straight line keeps moving, unless another force acts upon it.
- **Newton's Second Law of Motion**
The amount of force needed to make an object change its speed depends on the size and the weight of the object and the acceleration required.
- **Newton's Third Law of Motion**
For every action or force, there is an equal and opposite action or force.

Motion is all around us. People jump out of airplanes with parachutes, swimmers glide through the water, snowboarders perform tricks on the slopes and roller coasters loop around and around. Review vocabulary with students and the following examples:

- Examples of motion—people walking, fish swimming, rivers flowing, a train moving down the tracks
- Examples of force—gravity, wind, a rocket engine, a horse pulling a cart, pushing a desk
- Examples of inertia—a person riding on a bus when the bus stops quickly (the rider moves forward, off the seat)

Have the students give an example for each vocabulary word on a piece of paper and share their responses with their classmates.

Display the fill-in-the-blank below on the board. Have students complete the blanks based on Newton's First Law as a group.

It states that an object at _____ stays at _____, or an object that is moving at a _____ in a straight line keeps moving at that speed, unless another _____ acts upon it.

Answers: rest, rest, speed and force

Ask students what they think this has to do with them wearing a safety belt. Explain that when a car is moving, everything in the car is traveling at the same rate of speed as the car. If the car is traveling at 40 mph, the passengers are too. Everything in the car also has its own inertia, which means that they will keep moving unless stopped by another object or force. If the car is involved in a crash, the car stops, but the people continue to move forward at 40 mph until they meet another force—the back of a seat, the dashboard, the windshield or an object outside of the car.

Tell students the safety belt is designed to slow them down and keep them in position. The belt is made of a flexible material so it slows them down gradually. It is strapped across two of the strongest parts of their bodies—their shoulders and their hips. Emphasize that they should always wear both parts of the belt to avoid injury and wear the lap belt low on their hips and not across their stomachs.



TWO—LANGUAGE ARTS

Give students a copy of the *Car Safety Word Scramble* activity sheet. Have students unscramble the words and use the words to tell others why they should always wear a safety belt. Review the students' answers when complete and ask student volunteers to share their messages with family and friends.

Answers to word scramble:

- | | |
|---------------|------------------|
| 1. Crash | 6. Fasten |
| 2. Force | 7. Safety belt |
| 3. Lifesaving | 8. Shoulder belt |
| 4. Speed | 9. Passenger |
| 5. Inertia | 10. Buckle up |

WRAP UP

1. What is an important fact that you learned today about automobile accidents?
2. How does a safety belt prevent injuries in automobile accidents?
3. How can you influence others to always wear a safety belt when riding in an automobile?



LESSON BOOSTER

Materials: Paper/pencil

Use this mathematical equation with students to further illustrate the danger involved in automobile crashes. Have students calculate the potential force acting on their bodies if there were involved in a car crash at differing rates of speed.

Use the following example to demonstrate to students how to calculate the force: a 75-pound child in a car crash at 30 mph. Multiply the weight of the child (75 pounds) by the speed of the car (30 mph) to get the force acting on the body in this crash.

$75 \times 30 = 2250$ pounds of force. That is over a ton of force!

Ask students how they think their bodies could handle that amount of force. Have students multiply their weight in a 50 mph crash to calculate the force. Remind students that their bodies are traveling at the same speed as the car. _____ $\times 50 =$ _____

Prepared exclusively for Britta Sparks (sparksbr@calvertnet.k12.md.us) Transaction: #0001092786

NAME: _____



CAR SAFETY WORD SCRAMBLE

SHCAR _____

COERF _____

VGEFSINILA _____

DPEES _____

ERINIAT _____

TNESAF _____

TASEYF BLTE (two words) _____

HUSODLER ELTB (two words) _____

GERPASENS _____

UCBELK PU! (two words) _____

Use all of the words that you unscrambled to tell a friend or family member why it is important for them to always wear a safety belt when riding in a car. Write your message below.

**your
notes:**

REFERENCES + RESOURCES

- www.redcross.org
- <http://www.aacap.org/publications/factsfam/homealon.htm>
- www.bhsi.org
- <http://www.cdc.gov/ncipc/factsheets/childpas.htm>
- <http://www.cdc.gov/HomeandRecreationalSafety/Fire-Prevention/fires-factsheet.html>
- http://www.cdc.gov/nccdphp/dnpa/kidswalk/pedestrian_safety.htm
- <http://www.cdc.gov/injury/pdfs/cost-MV-a.pdf>
- <http://www.livestrong.com/article/96673-teach-children-street-safety-rules/>
- <http://www.mychildsafety.net/street-safety.html>
- <http://www.grc.nasa.gov/WWW/K-12/airplane/newton.html>
- www.nhtsa.gov
- www.bikewalk.org
- www.nsc.org
- www.safekids.org
- www.nws.noaa.gov
- <http://www.usfa.dhs.gov>

Prepared exclusively for Britta Sparks (sparksbr@calvertnet.k12.md.us) Transaction: #0001092786