

# LESSON 7: Get Your Helmet On!

## LESSON OVERVIEW

In this lesson, students will learn and understand the importance of wearing a helmet while bicycling and participating in other modes of active transportation. They will examine the influences that contribute to people not wearing helmets and analyze data relating helmet use to bicyclist fatalities. Using their knowledge of helmet use and bicycle safety, students will create advertisements to persuade people to wear helmets. These advertisements will aim to overcome the obstacles that prevent people from wearing helmets. As extension activities, students will be encouraged to delve deeper into the data around helmet safety, write informational pieces about the importance of wearing helmets, and learn how to properly fit bicycle helmets.

## OBJECTIVES

- Learn the 3B's of bicycle safety (be responsible, be predictable, and be visible).
- Learn the importance of wearing a bicycle helmet.
- Analyze the influences that contribute to bicyclists not wearing helmets.
- Create persuasive advertisements that include bicycle safety messaging.

## TOPIC

Bicycle Safety

## STANDARDS SUPPORTED IN THIS LESSON

### Common Core State Standards for English Language Arts

#### Writing Standards

##### Grade Four

- **CCSS.ELA-Literacy.W.4.2:** Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

##### Grade Five

- **CCSS.ELA-Literacy.W.5.2:** Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

#### Speaking and Listening Standards

##### Grade Four

- **CCSS.ELA-Literacy.SL.4.1:** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.

##### Grade Five

- **CCSS.ELA-Literacy.SL.5.1:** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly.

### Common Core State Standards for Mathematics

#### Grade Four

- **4.NF.C.6:** (CCSS.Math.Content.4.NF.C.6): Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.

#### Grade Five

- **5.NF.B.3:** (CCSS.Math.Content.5.NF.B.3): Interpret a fraction as division of the numerator by the denominator ( $a/b = a \div b$ ). Solve word problems involving division of whole numbers leading to answers in the form of fractions, mixed numbers, or decimal fractions, e.g., by using visual fraction models or equations to represent the problem.

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## California Health Education Content Standards

### Injury Prevention and Safety – Grade Four

#### Standard 1: Essential Concepts

- 1.9.S: Explain the importance of wearing helmets, pads, mouth guards, water safety vests, and other safety equipment during athletic and outdoor activities.

#### Standard 6: Goal Setting

- 6.1.S: Make a personal commitment to use appropriate protective gear while engaging in activities.

#### Standard 8: Health Promotion

- 8.3.S: Encourage others' safety behaviors (e.g., wearing bicycle helmets and seat belts).

## National Health Education Standards for Grades Three to Five

### Standard 1: Essential Health Concepts

- 1.5.4: Describe ways to prevent common childhood injuries and health problems.

### Standard 8: Health Promotion

- 8.5.2: Encourage others to make positive health choices.

## MATERIALS NEEDED

- Chart paper (1 per table group)
- Pencils, crayons, and/or markers (1 set per group of 4 students)
- The 3 B's handout (1 per student)
- *What's the Connection Between Helmet Use and Bicyclist Fatalities?* chart (1 per student)
- Blank white paper (1 per student)
- *Bicycling Advertisements* handout (1 per group of 4 students)

## PREPARATION ACTIVITIES

- Group tables (if not already set up in groups) so that one table group seats approximately four students. Put one piece of chart paper on each table group.
- Make copies of 3 B's handout and the *What's the Connection Between Helmet Use and Bicyclist Fatalities?* chart.
- Make copies of the *Bicycling Advertisements* handout included at the end of this lesson.

## STEPS FOR CLASSROOM ACTIVITY

### Chalk Talk (10 minutes)

- Ask the class how they stay safe while riding a bicycle.
- On the chart paper, students should write or draw everything they know about bicycle safety. Allow five minutes for this activity.
- When five minutes is up, call the class back together. Ask students to share what they wrote and drew about bicycle safety. Write student responses on the white board or chart paper. Correct any misperceptions and add information whenever possible.

## PREPARATION TIME

10 minutes

## ACTIVITY TIME

60 minutes

## VOCABULARY

**Brain Injury**—Injury to the brain from an external force.

**Percent**—Amount per 100.

**Predictable**—To be expected.

**Responsible**—To be in charge of your behavior.

**Visibility**—The ability to be seen.

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## The 3 B's (10 minutes)

- Introduce the 3 B's of bicycle safety: be responsible, be predictable, be visible.
- Distribute the 3 B's handout to each student. Briefly read and discuss each section with the class.
- Go through each of the student responses from the chalk talk activity. As a class, have students decide if the responses fit under responsibility, predictability, or visibility. Label each response with a "R", "P", or "V."
- Consult the 3 B's handout and add any bicycle safety component that the class failed to mention. This does not need to be an in-depth discussion, but should give students a general overview of bicycle safety.



Nu Ri L., Davis, California

## Why Are Helmets Important? (10 minutes)

- Ask students to articulate why wearing helmets is important (because they protect against brain injury, disability, and death). Share that helmet use has been estimated to reduce brain injury risk by 85 percent.
- Wearing a helmet is also important because it's the law. Share that the California Youth Helmet Law mandates that people under 18 years of age need to wear a helmet when riding a bicycle, scooter, skateboard, or wearing roller or in-line skates. The text of this law is included at the end of this lesson.

## Analyzing Influences (5 minutes)

- Ask the class why they think people would not wear a helmet, after learning more about bicycle safety. Possible answers: people think that helmets are not cool, people think helmets are uncomfortable, people do not own helmets, people forget.
- Have students think about obstacles that prevent people from wearing helmets. Ask students to consider how these obstacles could be overcome. Introduce the idea of creating advertisements that aim to overcome obstacles to helmet wearing. For example, to change the perception that helmets are not cool, how could helmets be portrayed and talked about in advertisements?

## Creating Advertisements (20 minutes)

- Present the four advertisements included at the end of this lesson. Ask students to consider how effective these advertisements are and who they might appeal to. Ask students if they think any of these advertisements change perceptions about helmet wearing and/or bicycling.
- Explain that students will be working in pairs to create an advertisement that promotes helmet wearing. The advertisements should address one of the obstacles to helmet wearing identified in the previous section.
- Advertisements should be encouraged to incorporate a statistic about helmet wearing (taken from the *What's the Connection Between Helmet Use and Bicyclist Fatalities?* chart).

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## Gallery Walk (5 minutes)

- Find a place in the classroom for students to display their advertisements. Allow students to silently walk around the room and look at the advertisements.
- After students walk around the classroom “gallery,” call the class back together to discuss what they noticed. Ask the following questions: What was effective? How did different advertisements use data? What could be done with these advertisements?

## Ideas for Extending the Lesson

- *What’s the Connection Between Helmet Use and Bicyclist Fatalities?:* This worksheet takes students through a variety of math problems to better understand how helmets reduce disability and death from brain injury.
- Have students write persuasive fact sheets for younger students about the importance of wearing helmets and articulating the components of helmet safety. Share this writing with students in other classes.
- Assign students to small groups and ask the groups to script and perform skits about the importance of wearing helmets.
- Properly Fitting a Helmet: Bring in a bicycle helmet and discuss how to properly fit a bicycle helmet. Because of the possibility of lice, do not have students wear the helmet. You may demonstrate how to properly fit the helmet. Use guidelines on the 3 B’s handout. Show the following video found under Videos and Clips > Fitting a Bicycle Helmet at <http://www.nhtsa.gov/Bicycles>
- Collect student-made advertisements and create a calendar to be sold by the PTA so that safety messages will be delivered throughout the year.



Olivia L., San Francisco, California

# Student Worksheet

## What's the Connection Between Helmet Use and Bicyclist Fatalities?

In the graph below, the columns titled "Number" and "Percent" represent the number and percent of bicyclist fatalities in the United States within the given years.

Year	-----No Helmet-----		-----Helmet-----		-----Unknown-----		-----Total-----	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
2005	676	86	77	10	31	4	784	100
2006	730	95	37	5	2	0	769	100
2007	646	92	50	7	4	0	699	100
2008	654	91	59	8	3	0	716	100
2009	573	91	52	8	3	0	628	100
2010	429	70	94	15	93	15	616	100

1. In 2009, there were 628 bicyclist fatalities. What fraction of these fatalities involved bicyclists who were not wearing bicycle helmets?
2. In 2007, 92 percent of bicyclist fatalities involved bicyclists who were not wearing bicycle helmets. Write 92 percent as both a fraction and a decimal.
3. Which year had the most bicyclist fatalities? What percentage of those fatalities involved either no bicycle helmet or unknown bicycle helmet use?
4. What have you learned from examining this data?

Data from <http://www.helmets.org/stats.htm>.



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- In 2009, there were 628 bicyclist fatalities. What fraction of these fatalities involved bicyclists who were not wearing bicycle helmets?  
**573/628**
- In 2007, 92 percent of bicyclist fatalities involved bicyclists who were not wearing bicycle helmets. Write 92 percent as both a fraction and a decimal.  
**92/100, 0.92**
- Which year had the most bicyclist fatalities? What percentage of those fatalities involved either no bicycle helmet or unknown bicycle helmet use?  
**2005, 90%**
- What have you learned from examining this data?  
**Answers may vary. Answers may include observation that bicycle helmets greatly protect against bicyclist fatalities.**

Data from <http://www.helmets.org/stats.htm>.

### BE RESPONSIBLE:

#### Always wear a properly fitting bicycle helmet.

Eyes, Ears, and Mouth Check Test for proper helmet fit:

**Eyes**—Helmet should fit level on head and the rim should be one or two finger widths above the eyebrows.

**Ears**—Helmet side straps should create a tight “V” under ear lobes when buckled.

**Mouth**—Helmet chin strap should fit snug with a finger space between the strap and chin.

**Quick Test**—Shake head from side to side to make sure the helmet is secure.

#### Wear proper bicycle attire.

Make sure shoelaces are tied securely.

Avoid clothes that will get caught in the bicycle chain or wheel spoke.

Use a strap or band to secure loose pant legs.

Do not wear headphones or use hand-held devices while bicycling.

Wear bright colored clothing during the day and light colored clothing at night.

#### ABC Bicycle Quick Check.

A is for air pressure check.

B is for brake and bar (handlebar) check.

C is for checking cranks, chains, and cogs.

**Quick** is quick release, making sure quick releases on wheels are tight and closed properly.

**Check** is for checking bicycle to make sure it's ready to ride.



### BE PREDICTABLE:

**Understand the Rules of the Road**- right of way, yielding, turning, traffic signs, scanning roads/crossings, etc.

#### Use hand signals when riding a bicycle.

**Left turn**—Extend the left arm straight out, parallel to the road.

**Right turn**—Extend the left arm out to the left, parallel to the road and bend the elbow up and point fingertips upward; or extend the right arm straight out to the right side, parallel to the road.

**Stop**—Extend the left arm out to the left, parallel to the road and bend the elbow down and point fingertips downward.

### BE VISIBLE:

Avoid riding a bicycle when it is dark or in bad weather.

Use lights, bright clothing, and reflective materials to increase visibility when riding a bicycle.

## ***California Bicycle Laws<sup>1</sup>*** (Excerpted from DMV handbook)

### ***Youth Bicycle Helmets: Minors (§ 21212)***

- (a) A person under 18 years of age shall not operate a bicycle, a nonmotorized scooter, or a skateboard, nor shall they wear in-line or roller skates, nor ride upon a bicycle, a nonmotorized scooter, or a skateboard as a passenger, upon a street, bikeway, as defined in Section 890.4 of the Streets and Highways Code, or any other public bicycle path or trail unless that person is wearing a properly fitted and fastened bicycle helmet that meets the standards of either the American Society for Testing and Materials (ASTM) or the United States Consumer Product Safety Commission (CPSC), or standards subsequently established by those entities. This requirement also applies to a person who rides upon a bicycle while in a restraining seat that is attached to the bicycle or in a trailer towed by the bicycle.

<sup>1</sup><https://www.dmv.ca.gov/portal/dmv/detail/pubs/vctop/vc/d11/c1/a4/21212>



# Student Worksheet

# Bicycle Advertisements

