

**RIDE ON!**

# BIKEOLOGY

**A middle and high school bicycle safety curriculum for physical education teachers and recreation specialists**



American Alliance for  
Health, Physical Education,  
Recreation and Dance



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# CONTENTS

## 5 SECTION 1: CURRICULUM OVERVIEW

Purpose  
Uniqueness of the Curriculum  
Curriculum Development  
How to Use the Curriculum  
Acknowledgments

## 9 SECTION 2: CURRICULUM INTRODUCTION

Layout  
Unit Components  
Activity Elements  
Assessments  
Differentiating Instruction  
Parent Involvement

## 13 SECTION 3: CURRICULUM UNITS

15 Unit 1: Getting Ready to Ride  
93 Unit 2: Bicycle Handling Basics  
157 Unit 3: Emergency Bicycle Handling Skills  
189 Unit 4: Advanced Bicycle Handling Skills  
239 Unit 5: Rules of the Road for Riding  
293 Unit 6: Bicycle Maintenance  
331 Unit 7: Riding for Fitness

## 355 SECTION 4: APPENDICES

Bike-Friendly Community Assessment  
Walk-Friendly Community Assessment  
Bicycle Safety: Tips for Youth  
Be a “Roll” Model: Wear a Helmet  
Fitting Your Bike Helmet  
Avoid the Hazards worksheet  
Right-of-Way worksheets

### SEE ALSO THE AFFILIATED DOCUMENT:

#### PARENT SECTION: WHAT EVERY PARENT SHOULD KNOW

The Bikeology Course  
Bicycle Helmets  
Preventing Bicycle Crashes & Brain Injuries  
Choosing the Right Bicycle  
Bicycles & Basic Traffic Safety  
Be a Bicycle Safety “Roll” Model  
Learning to Brake  
Motorists & Bicyclists: Share the Road  
Distracted Driving, Walking & Bicycling  
Defensive Walking & Bicycling  
Bicycling on Multi-Use Trails  
Maintaining a Bicycle: ABC Quick Check



THIS ICON INDICATES  
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# SECTION 1

## Curriculum Overview

### PURPOSE

This curriculum provides physical education teachers and recreation specialists the knowledge and resources to implement an on-the-bicycle safety education program for youth grades 6-12. It contains the necessary preparations and minimum-level benchmarks to meet when teaching safe bicycle riding and is suitable for enhancing skill at the recreational biking level.

The Department of Transportation's National Highway Traffic Safety Administration (NHTSA) funded this curriculum as one of many education and training opportunities to increase bicycle safety and reduce the risk of injury and fatalities among youth while bicycling throughout the United States. As recipients of NHTSA's federal funding, the American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD) is committed to furthering the safety of bicyclists while supporting the fight against obesity by increasing physical activity and teaching youth to enjoy lifelong physical activity.

Physical education teachers and recreation specialists can have a direct impact on the health and safety of youth by teaching and reinforcing safe bicycling skills and behaviors around traffic. As a result, youth will gain greater confidence and enjoyment when bicycling and be more likely to use bicycling as a form of activity for a lifetime.

Elementary school children (grades 4-5) may be exposed to bicycle safety via school presentations or a one-time cycling skills clinic or bicycle rodeo. This curriculum, however, focuses on reaching pre-teens and teens to expose, reinforce and apply knowledge to on-the-bicycle skills to enhance control of the bicycle while riding. The focus on bicycle safety with pre-teens and teens is important because:

- Pre-teens and teens are more likely to be using a bicycle as a means of transportation, encountering motor vehicle traffic while riding their bicycles as a vehicle on the road, and thus increasing their risk of traffic-related injury and death.
- Traffic-related crashes are the result of behaviors of both bicyclists and motorists. Teaching safe bicycling behaviors (skills) can decrease riding risks and potentially save lives.
- Bicycle safety education, including riding skills, becomes more complex as children mature. As their likelihood of interacting with motorized vehicles increases, children require a better understanding of the rules of the road and their responsibility as a vehicle as a part of traffic.

The middle school and high school years are the ideal times to begin teaching traffic safety concepts to children before they become licensed drivers at ages 16, 17 or 18. Learning the rules of the road and consistently applying them to their own bicycling will pay benefits now and in the near future. Defensive walking, biking and driving use similar concepts and learning to anticipate hazards helps walkers, riders and drivers avoid potentially troublesome traffic situations. Equally important are the benefits of establishing regular physical exercise for children, which bicycling provides. Consider data provided by the Centers for Disease Control and Prevention (CDC) warning that childhood obesity has more than tripled in the past 30 years. While obesity is the result of several factors including the expenditure of fewer calories than consumed and is affected by various genetic, behavioral and environmental factors,<sup>5,6</sup> bicycling is a fun way to increase physical activity toward efforts to combat obesity.

## UNIQUENESS OF THE CURRICULUM

This curriculum is unique for the following reasons. It was:

1. Written to meet National Standards for K-12 Physical Education, standards used by physical education teachers;
2. Found effective in increasing both bicycle safety knowledge and skills of students; and
3. Developed to address varying bicycle skill levels of students.

## CURRICULUM DEVELOPMENT

This curriculum is the result of a cooperative agreement between NHTSA and AAHPERD to develop an evaluated model curriculum for national use by physical education teachers and recreation specialists, in a school or recreation setting, to teach bicycle safety and related skills to middle and high school-aged youth with varying levels of bicycling abilities.

The agreement included the development of the youth bicycling curriculum, training teachers to teach the curriculum, teachers pilot testing the curriculum with youth (completed by nine trained teachers from Virginia, Tennessee and Alabama), and conducting a formal evaluation. The evaluation included the instructor's reaction to curriculum activities, ease in teaching the activities, receptivity of students and changes in student knowledge of bicycle safety and performance of skills before and after the program. The evaluation of the skill-based activities implemented by these pilots revealed this curriculum effectively increased both bicycle safety knowledge and skills for students.

The project included the development and testing of two training workshops. The first instructed teachers to use the curriculum effectively and ensured uniformity of teachers' knowledge about bicycling and bicycle safety principles prior to teaching the curriculum to children in an effort to promote uniform and consistent instruction. These select teachers tested the curriculum and the efficacy of their training workshop to over 300 students. The second training, a train-the-trainer workshop, prepared a select group of AAHPERD members to teach the curriculum-training workshop to teachers and recreation specialists. Twelve trainers completed this workshop, an initial effort to build a cadre of curriculum trainers across the country.

AAHPERD will continue to offer these workshops, and continue to expand and support the curriculum trainers beyond the life of this funded project. For more information about bicycle safety, see the National Highway Traffic Safety Administration (NHTSA) at: [www.nhtsa.gov/bicycles](http://www.nhtsa.gov/bicycles).

# HOW TO USE THIS CURRICULUM

Use this curriculum in varying settings (school, after-school, clubs and camps) based on your timeframe and available resources. Instructors are encouraged to teach as much of the materials as time will allow. At a minimum, teach the skill-based activities in Units 1, 2 and 3 as these activities are the essential skills needed to create the foundation for safe bicycling. Regardless of students' skill level or previous bicycling knowledge, complete the skill-based activities in these units consecutively before proceeding to any of the remaining units.

Within each of the seven units, there are three types of activities: introductions, skill-based activities with rubrics and closures. Occasionally, the introduction and closure activities have more than one option. Instructors should choose the appropriate activities that fit into the available class time when developing lesson plans. If class time is too short to allow for all three types of activities, the lessons should focus on completing the skill-based activities.

Consider using the curriculum's rubrics to assess student performance for each of the skill-based activities. Each of these activities has a supporting rubric. All of the rubrics were included as part of the curriculum evaluation with the exception of Unit 7, "Riding for Fitness."

This curriculum recognizes that classes will often be comprised of students with varying skill levels. To accommodate this reality, there are suggestions for differentiating instruction when necessary to meet the needs of all skill levels. However, there are several identified activities for students with intermediate or advanced bicycling skills only.

## ACKNOWLEDGMENTS

AAHPERD wishes to thank the team members for their professional expertise in the field of teaching physical education, bicycling education and injury prevention. The team focused on special aspects of this project based on their expertise including curriculum development, assessment, evaluation and teacher training.

### CURRICULUM AUTHORS AND WORKSHOP TRAINERS

**VICKI MILLER, LCI**, Virginia Commonwealth University

**HEATHER FUNKHOUSER, MPH, LCI**, Board, Injury-Prevention Consultant

### CURRICULUM DESIGN CONSULTANTS

**AMY LUTZ, M.Ed, LCI**, Focused Fitness

**GAY L. TIMKEN, Ph.D., LCI**, Western Oregon University

### EVALUATION CONSULTANTS

**SUZAN AYERS, Ph.D.**, Western Michigan University

**YUANLONG LIU, Ph.D.**, Western Michigan University

Other: Special thanks to those professionals who piloted the curriculum and diligently followed strict guidelines for pre/post evaluation of their students to enable us to provide a fully evaluated model bicycling curriculum for professional physical activity educators and recreation specialists.

**MICAH ARTZ**, Big Spring High School, Newville, PA

**JILL BACURIN**, Smyrna Middle School, Smyrna, TN

**TOM COATES**, University of North Alabama, Florence, AL

**CINDY FERREK**, Turner Ashby High School, Bridgewater, VA

**JENNIFER "LYNNE" GILBERT**, Elizabeth Davis Middle School, Chester, VA

**BIKI-RAY MITCHELL**, Holman Middle School, Glen Allen, VA

**TESSA PEHANICK**, Henley Middle School, Crozet, VA





# SECTION 2

## Curriculum Introduction

Bicycling is a fun, healthy activity for both children and adults. A lifelong activity, it can be enjoyed by people of all ages and fitness levels. Riding a bicycle helps improve muscular fitness and blood circulation, lowers stress levels, can be a valuable part of a weight loss program and can provide hours of enjoyment.

Despite the numerous health benefits, there are some inherent dangers of riding a bicycle. Every year U.S. emergency rooms treat nearly one million children for bicycle-related injuries. Although often thought of as a toy, bicycles are associated with more childhood injuries than any other consumer product, except the automobile. For many children, the bicycle is their first form of independent transportation, and while most master the skills needed to ride a bicycle, they may not learn the skills required for safe and competent riding, especially in traffic. Providing a safe learning environment - such as a school - where children can make mistakes, might avoid potentially fatal mistakes in an unforgiving setting.

For these reasons and many more, the American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD) developed this bicycle safety curriculum for use in a school or recreational setting.

### CURRICULUM LAYOUT

The curriculum consists of seven units and parent handouts. Each unit contains three types of activities: introductions, skill-based activities with corresponding rubrics and closures. The seven units are:

- Unit 1:** Getting Ready to Ride
- Unit 2:** Bicycle Handling Basics
- Unit 3:** Emergency Bicycle Handling Skills
- Unit 4:** Advanced Bicycle Handling Skills
- Unit 5:** Rules of the Road for Bicycling
- Unit 6:** Bicycle Maintenance
- Unit 7:** Riding for Fitness and Health

## UNIT COMPONENTS

Each unit consists of the following components:

- Objectives with related measurements indicating what students can be expected to accomplish upon the completion of the unit
- Corresponding National Standards for K-12 Physical Education
- Key vocabulary words
- Activities designed to teach various skills and to meet unit objectives.
- Cross-curricular activities to enhance the comprehension and reinforce what is learned.

## ACTIVITY ELEMENTS

Each activity contains the following elements to assist with implementation:

- The skill level (beginner, intermediate or advanced) associated with each activity;
- An estimated timeframe for completion;
- Specific equipment needed;
- Teacher overview summarizing the activity;
- Preparations necessary for the activity;
- Directions for conducting the activity;
- Assessments to evaluate if students have met the objectives;
- Important safety rules that must be followed;
- Differentiating instruction to identify options for students with varying skill levels;
- Safety rules that must be followed; and
- Best practice information

Given the variability in the length of class times, instructors can teach activities in multiple class periods, as necessary. The number of activities taught within one class period depends on a number of variables, including the instructor's experience in teaching, number of students per class, skill levels of students, number of bicycles and helmets available per class and available space for instruction.

## ASSESSMENTS

There are a handful of existing bicycle safety curricula across the country. However, what sets this curriculum apart from others is that it has been evaluated for effectiveness. Teachers, who pilot tested the curriculum and assessments, taught the curriculum and used the assessment tools to measure that students did experience an increase in bicycle safety knowledge and bicycle skills toward becoming a safer and more competent rider, in preparation for riding in a roadway as a vehicle in traffic. The assessments used in the evaluation period are included in curriculum for you to use. They include student or peer assessments and teacher assessments of student's knowledge and skill level.

## DIFFERENTIATING INSTRUCTION

Although the primary skill level for each activity is identified, most classes will include students of varying skill levels. To address this common situation, examples of differentiated instruction are provided. However, for safety reasons, there are some activities that are truly intended for intermediate or advanced riders only based on the teachers assessment.

## PARENT INVOLVEMENT

Children are part of a family unit and inclusion of the family unit to reinforce the correct information is a critical necessity when trying to bring about behavior change. Overall, teachers are encouraged to determine the best means to reach parents, emphasizing the following basic concepts:

- Bicycling is a form of lifelong physical activity; it's something the family can do together and it's fun!
- Safe bicycling behavior should be the societal norm. This starts within the family unit, with the expectation that when bicycling, everyone (adults and youth) will: (a) wear a properly fitted helmet; (b) check equipment for safety before each ride; (c) follow the rules of the road; and (d) model safe riding behaviors.
- Parents and youth must practice safe bicycling behavior at home and in the community, not just in the instructional setting. "What Every Parent Should Know" parent tip sheets address important aspects of bicycle safety and identify ways in which parents, grandparents and other adults can support what their child is learning. They should serve as "Roll" models when bicycling and driving around bicyclists. Parent tip sheets are specifically encouraged for elements covered in Units 1, 2 and 5.
- You may choose to use any of the additional parent tip sheets and handouts included to assist you in engaging parents. Use them not only for this class, but as part of your school bike to school events or community activities where safety education can be incorporated.





# SECTION 3

## Curriculum Units

A middle and high school bicycle safety curriculum for physical education teachers and recreation specialists



- 15** Unit 1: Getting Ready to Ride
- 93** Unit 2: Bicycle Handling Basics
- 155** Unit 3: Emergency Bicycle Handling Skills
- 187** Unit 4: Advanced Bicycle Handling Skills
- 237** Unit 5: Rules of the Road for Riding
- 297** Unit 6: Bicycle Maintenance
- 335** Unit 7: Riding for Fitness and Health





# UNIT 1

## Getting Ready to Ride

### OBJECTIVES

At the conclusion of this unit the student will be able to:

1. Describe key concepts of safe riding, as measured by participation in peer discussion about bicycle safety. (Cognitive)
2. Describe key concepts of safe riding, as measured by completion of the brainstorming activity. (Cognitive)
3. Describe key concepts of safe riding, as measured by completion of the *Safe Riding* worksheet. (Cognitive)
4. Describe how a properly fitted bicycle helmet protects the brain, as measured by successful completion of the *Bicycle Helmet Function* worksheet. (Cognitive)
5. Demonstrate exceptional or reliable helmet fit as measured by the helmet fit rubric. (Psychomotor)
6. Demonstrate exceptional or reliable bicycle fit, as measured by the bicycle fit rubric. (Psychomotor)
7. Identify the basic parts of a bicycle, as measured by successful completion of the *Bicycle Parts* worksheet. (Cognitive)
8. Demonstrate exceptional or reliable performance of the ABC Quick Check, as measured by the ABC Quick Check rubric. (Psychomotor)
9. Demonstrate exceptional or reliable social behavior as measured by the social behavior rubric. (Affective)
10. Describe key concepts from Unit 1, bicycle fit, helmet fit and ABC Quick Check, as measured by participation in peer discussion about bicycle safety and by providing responses to questions in journals. (Cognitive)
11. Describe feelings about the ability to ride safely and enjoy bicycling, as measured by providing responses to questions in journals. (Affective)

## NATIONAL STANDARDS FOR K-12 PHYSICAL EDUCATION

### **Standard 1**

The physically literate individual demonstrates competency in a variety of motor skills and movement patterns.

### **Standard 2**

The physically literate individual applies knowledge of concepts, principles, strategies and tactics related to movement and performance.

### **Standard 3**

The physically literate individual demonstrates the knowledge and skills to achieve and maintain a health-enhancing level of physical activity and fitness.

### **Standard 4**

The physically literate individual exhibits responsible personal and social behavior that respects self and others.

### **Standard 5**

The physically literate individual recognizes the value of physical activity for health, enjoyment, challenge, self-expression and/or social interaction.

## KEY VOCABULARY/TERMS

**2-2-2-2 Rule:** A classroom management and bicycle safety strategy that encourages students to keep: 2 wheels on the ground; 2 feet on the pedals; 2 hands on the handlebars; and 2 fingers on the brake lever(s).

**ABC Quick Check:** A series of steps to inspect the basic functioning of a bicycle that should be performed before each ride. A= Air; B=Brakes; C=Chain/Crank; Quick=Quick release; and Check=Check it over

**Brake:** The bicycle part used to stop a bicycle. Rim brakes and disc brakes are operated by brake levers, which are mounted on the handlebars. Pedaling backward operates coaster brakes.

**Brake levers:** The bicycle parts attached to the handlebars, squeezed by the hands to activate the brake.

**Cassette:** A group of stacked gears on the rear wheel of a bicycle.

**Chain:** The bicycle part that moves the bicycle by transferring power from the pedals to the drive-wheel.

**Chain stay:** The tube on the rear of the bicycle frame running from the bottom bracket and parallel to the chain.

**Chainring:** One of the front gear(s), attached to a crank.

**Cog:** The tooth on the rim of a gear wheel.

**Consumer Product Safety Commission (CPSC):** A federal organization established to protect the public against unreasonable risks of injury from consumer products.

**Crank:** A device for transmitting rotary motion, consisting of a handle or arm attached at right angles to a shaft.

**Derailleur:** An assembly of levers that moves the chain.

**Down tube:** The tube on a bicycle frame running from the head tube to the bottom bracket.

**Fork:** Connects the bicycle's frame to its front wheel and handlebars, allowing steering by virtue of its head tube.

**Handlebars:** A lever attached to the head tube of the fork, allowing steering. It also provides a point of attachment for controls and accessories.

**Handlebar stem:** A bracket attaching the handlebars to the head tube of fork.

**Head tube:** The tube on a bicycle frame that contains the headset.

**Headset:** The bearings that form the interface between the frame and fork head tube.

**Head barrier:** Something used to separate the child's head from the helmet to minimize the transmission of communicable disease (lice) if helmets are shared among students.

**Helmet:** Personal protective safety equipment worn on the bicyclist's head to protect the brain from impact.

**Pedals:** The bicycle parts where the bicyclist's feet rest; pushed in a forward motion, they propel the bicycle ahead.

**Quick Release:** A lever for releasing wheels; a lever to adjust seat post.

**Saddle:** The bicycle seat.

**Seat post:** The post that supports the saddle; it slides into the frame's seat tube and is used to adjust riding height.

**Seat tube:** The bicycle part that runs along the bike frame from the seat to the bottom bracket.

**Seat stay:** Connects the top of the seat tube to the rear dropout.

**Spokes:** The bicycle parts that connect the wheel rim to hub. Most bicycles usually have 36 spokes.

**Straddle:** To sit or stand with one leg on each side of bicycle.



Schrader

Presta

**Top tube:** The bicycle part connecting the head tube to the seat tube.

**Valve stem:** A port for adding or releasing air from the tire's inner tube. Two types are commonly used: Presta and Schrader. See page 74.

## ACTIVITIES

Each unit should include three types of activities: introduction, skill-based with assessments and closure. In some cases, more than one activity option is offered for the introduction and closure. When developing your lesson plans, choose the activities that fit into your allotted class time. If class time is too short to allow for all three types of activities, focus your lesson on the skill-based activities.

**Introduction:** Choose from the following activities to introduce this unit of learning.

- Bicycle Safety Videos
- Brainstorming
- Walk & Share

**Skill-Based with Assessments:** Each skill-based activity is associated with an assessment to measure student knowledge and application of the identified skill. Depending on the amount of class time available and the skill level of students, more than one of the following skill-based activities may be completed during one class. Complete all skill-based activities in this unit before moving to the next unit. This will ensure that students have the safety knowledge and basic skills considered necessary to practice safe bicycling behaviors.

- Bicycle Helmet Function
- Bicycle Helmet Fit
- Bicycle Fit
- Bicycle Parts
- ABC Quick Check

**Closure:** The following activities can be used to conclude this unit of learning. If desired, these activities can be assigned as homework.

- Walk & Share
- Journal Writing

## EQUIPMENT NEEDED

- Helmets
- Head barriers
- Bicycles
- Bicycle pump
- Allen wrench
- Red floor tape
- Cones, domes, polyspots or chalk to mark riding course
- Pencils
- Student worksheets and journals
- *Bike Safe Bike Smart* (DVD)
- *Ride Smart - It's Time to Start* (DVD)
- Audiovisual equipment

- Poster board, art paper, rolls of paper or butcher paper
- Markers
- Tape
- *Safe Riding* worksheet
- *Bicycle Helmet Function* worksheet
- *Bicycle Helmet Fit* worksheet
- *Bicycle Fit* worksheet
- *Bicycle Parts* worksheet
- *ABC Quick Check* worksheet
- *Bicycle Safety Word Search* worksheet
- *Bicycle Safety Crossword Puzzle* worksheet
- Consumer Product Safety Commission (CPSC) brochure: *Which Helmet for Which Activity?*  
[www.google.com/url?sa=t&rct=j&q=CPSC+%2B+What+Helmet+For+What+Activity&source=web&cd=1&ved=OCFoQFjAA&url=http%3A%2F%2Fwww.cpsc.gov%2Fcpscopy%2F349.pdf&ei=wtKzT4DkA4Gu9ATVva3mBA&usg=AFQjCNGyQ4ivEH\\_qCOgYQUKuIKROz1rZ2w](http://www.google.com/url?sa=t&rct=j&q=CPSC+%2B+What+Helmet+For+What+Activity&source=web&cd=1&ved=OCFoQFjAA&url=http%3A%2F%2Fwww.cpsc.gov%2Fcpscopy%2F349.pdf&ei=wtKzT4DkA4Gu9ATVva3mBA&usg=AFQjCNGyQ4ivEH_qCOgYQUKuIKROz1rZ2w)
- A bicycle helmet with Consumer Product Safety Commission (CPSC) safety label
- A multi-use helmet with CPSC label (optional)
- Cracked helmet or helmet involved in a prior crash (optional)
- Melon or gelatin mold (optional)

## CROSS-CURRICULAR ACTIVITIES

### Language Arts

- Learn the vocabulary for the parts of the bicycle and helmet.
- Journal writing

### Science

- Demonstrate helmet construction and effectiveness and head impact.
- Learn how to locate the Pounds per Square Inch (PSI) range on the tire. Using the air pressure gauge on the tire pump, determine the current PSI of each tire.

### History

- Explore the development of bicycle helmet safety standards.

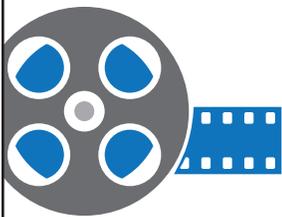
### Social Studies

- Identify the process to implement a statewide helmet law.

### Math

- Demonstrate how to measure a bicycle frame





# INTRODUCTION ACTIVITY

## Bicycle Safety Video

<b>Timeframe</b>	<b>Beginner:</b> 15 minutes <b>Intermediate:</b> 15 minutes <b>Advanced:</b> 15 minutes
<b>Objective</b>	At the conclusion of this activity, the student will be able to: <ol style="list-style-type: none"><li>1. Describe key concepts of safe riding, as measured by participation in a peer discussion about bicycle safety. (Cognitive)</li></ol>
<b>National Standard</b>	Standard 2
<b>Equipment</b>	<ul style="list-style-type: none"><li>• <i>Bike Safe Bike Smart</i> (DVD)</li><li>• <i>Ride Smart - It's Time to Start</i> (DVD)</li><li>• Audiovisual equipment</li></ul>
<b>Teacher Overview</b>	This activity prompts students to begin thinking about bicycle safety by asking them questions about what they think are correct bicycling behaviors. Videos are used to demonstrate proper behaviors and further prompt the students' thought process.
<b>Preparation</b>	<ol style="list-style-type: none"><li>1. Preview and download one or both of the National Highway Traffic Safety Administration (NHTSA) videos available at: <a href="http://www.nhtsa.gov/bicycles">http://www.nhtsa.gov/bicycles</a> under videos and clips or order a copy at: <a href="http://mcs.nhtsa.gov">http://mcs.nhtsa.gov</a></li></ol>

### Bicycle Safety Videos.

Other bicycle safety videos are available from a variety of sources and may be appropriate as well. However, videos other than the ones recommended above, should be previewed before using in class to ensure accuracy and consistency with the information to be presented.

**Bike Safe Bike Smart.** "This entertaining, yet instructional, nine-minute bicycle safety video uses a visually stimulating, peer-to-peer approach to teach elementary and middle school aged audiences how to Bike Safe Bike Smart. Viewers will learn about: the rules of the road, signaling, riding at night, safe riding practices and risky behaviors that they should avoid. There are also tips for purchasing and correctly fitting a bicycle helmet."

**Ride Smart - It's Time to Start.** "This funky, fast-paced video uses humor, real-life examples, computer graphics and a peer-to-peer approach to teach middle and high school youth about how wearing a bicycle helmet can protect them from serious injuries (including brain injuries) and death. The approximately nine-minute video features a diverse group of teens and pre-teens modeling the newest, coolest looks in helmets and includes the entertaining yet instructional "raw egg drop" demonstration. The video also explains how to correctly fit and position a bicycle helmet and select a helmet that meets Consumer Product Safety Commission (CPSC) standards. It also discusses key rules of the road. The video's target audience is middle-school children (grades 5-9) and can be used by parents, youth groups, medical personnel, traffic safety organizations, educators and injury prevention groups."

2. Set up appropriate audiovisual equipment to show videos in class.

## Directions

1. Introduce this activity using the following prompt:

*Today, we are going to learn how many of you ride bicycles, and we will begin to discuss some bicycle safety skills that everyone should use to stay safe and have fun.*

2. Use the following sample questions to prompt students' thinking about the content in this activity.

**Q: How many of you ride your bicycle to school? To a friend's house? Around the neighborhood?**

**A:** All responses are acceptable

**Q: What does safe riding mean to you? Why is it important to ride safely?**

**A:** All responses are acceptable

**Q: What are some of the rules of the road for bicyclists?**

**A:** Any of the following:

- Obey traffic signs and signals
- Signal turning and stopping
- Pass on the left
- Ride with the flow (in the same direction) as traffic
- Other answers may be accepted.

**Q: Are the rules of the road different for drivers?**

**A:** When traveling on the road, bicycles are considered vehicles and are expected to follow the same rules of the road as other vehicles. However, in some locations there may be exceptions enacted by states or localities (e.g. sidewalk riding, bicycles riding two abreast in one lane, etc.).

Examples include urban downtown areas that may have a law that bicyclists cannot ride on the sidewalk; other areas may have law for the age at which bicyclists may no longer ride on the sidewalk; areas may say that even if a bike lanes exist, bicyclists are or are not required to ride in them; or whether or not bicyclists may ride two abreast in one lane. Make sure you search the internet for the latest bicycle laws in your region.

3. Show video of choice.

## Assessment

1. Divide students into small groups.
2. Encourage each student to share with their group one thing they learned about safe bicycling from the video. If students did not learn anything new, then they should share what they thought was most important.

## Safety

None

## Differentiating Instruction

### All levels

- Choose appropriate video, according to age and ability of students.

## Best Practices

1. Although this activity limits class time for the skill-based activity, the video is a good method of educating students about safe bicycling in a short amount of time.
2. Show the video when the weather prevents riding outside.



# INTRODUCTION ACTIVITY

## Brainstorming

- Timeframe**      **Beginner:** 10-12 minutes  
**Intermediate:** 10 minutes  
**Advanced:** 8-10 minutes
- Objective**      At the conclusion of the activity, the student will be able to:
1. Describe key concepts of safe riding, as measured by completion of the brainstorming activity. (Cognitive)
- National Standard** Standard 2
- Equipment**      • Poster board, art paper or butcher paper  
• Markers  
• Tape
- Teacher Overview** This activity prompts students to begin thinking about bicycle safety by asking questions about what they think are correct bicycling behaviors. By working in groups to respond to the questions, the brainstorming will initiate peer discussion about safe bicycling behaviors.
- Preparation**      Student groups will need paper to write out ideas to post and share with the whole class.
- Directions**      1. Introduce this activity using the following prompt:
- Today, we are going to learn how many of you ride a bicycle, and begin to discuss some bicycle safety skills that everyone should use to stay safe and have fun.*
2. Divide students into small groups.
  3. Give each group a piece of paper, marker and list of questions to be answered.
  4. Ask each group to brainstorm responses to the questions and write ideas on their paper.
- Q: What do you know about safe riding?**
- A:** Any of the following:
- Bicycles should follow traffic signs and signals
  - Local laws
  - Bicyclists should always wear helmets
  - Other answers may be accepted.

**Q: What have you seen bicyclists doing that can be dangerous?**

**A:** Any of the following:

- Not wearing a helmet
- Wearing earphones
- Not following rules of the road
- Not signaling
- Riding against traffic
- Other answers may be accepted.

**Q: What have you seen drivers doing that can be dangerous around bicyclists?**

**A:** Any of the following:

- Passing a bicyclist too closely
- Cutting a bicyclist off
- Not sharing the road
- Other answers may be accepted.

**Q: What would you like to know about safe riding?**

**A:** All responses are acceptable

**Q: What are some of the health benefits of bicycling?**

**A:** All responses are acceptable

**Q: What are the barriers to riding your bicycle to school/work/a friend's house?**

**A:** All responses are acceptable.

**5.** Have students identify a spokesperson to share their group's discussions with the class.

**Assessment**

Use the brainstorming activity to determine students' basic knowledge of safe riding behaviors.

**Safety**

None

**Differentiating Instruction**

**All levels**

- The answers to the above brainstorming sessions will depend on the age and experience of the students.

**Best Practices**

1. Complete this activity when weather prevents riding outside.
2. Display brainstorming pieces of paper around the gym during the bicycling unit to reinforce learning.



# INTRODUCTION ACTIVITY

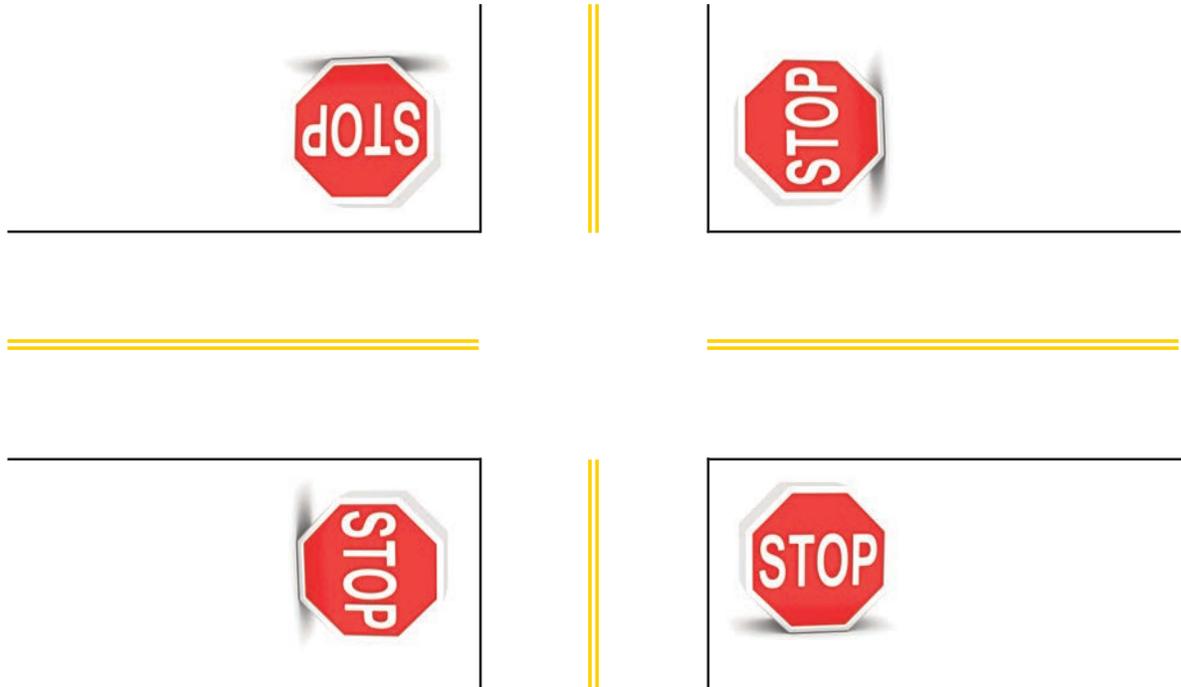
## Walk & Share / Safe Riding

<b>Timeframe</b>	<b>Beginner:</b> 5-7 minutes <b>Intermediate:</b> 5-7 minutes <b>Advanced:</b> 5-7 minutes
<b>Objective:</b>	At the conclusion of the activity, the student will be able to: <ol style="list-style-type: none"><li>1. Describe key concepts of safe riding, as measured by completion of the <i>Safe Riding</i> worksheet. (Cognitive)</li></ol>
<b>National Standard</b>	Standard 2
<b>Equipment</b>	<ul style="list-style-type: none"><li>• <i>Safe Riding</i> worksheet</li><li>• Pencils</li></ul>
<b>Teacher Overview</b>	This activity prompts students to begin thinking about bicycle safety by asking questions about what they think are correct bicycling behaviors. Walking while discussing the questions will initiate peer discussion about safe bicycling behaviors and keep students moving.
<b>Preparation</b>	Make appropriate number of copies of the <i>Safe Riding</i> worksheet.
<b>Directions</b>	<ol style="list-style-type: none"><li>1. Introduce this activity using the following prompt: <i>Today, we are going to learn how many of you ride a bicycle, and we'll begin to discuss some bicycle safety skills that everyone should use to stay safe and have fun.</i></li><li>2. Divide students into groups of two or three.</li><li>3. Ask students to walk the perimeter of the gym while answering the questions on the <i>Safe Riding</i> worksheet. Instruct students they may stop to write a quick answer, but should continue moving as much as possible. You may opt to have them write the answers when the walking is completed.</li><li>4. Instruct students to stop when the whistle blows and be prepared to share something they discussed with their partner(s).</li></ol>
<b>Assessment</b>	Successful completion of the <i>Safe Riding</i> worksheet
<b>Safety</b>	Remind students not to run or walk too quickly if carrying pencils.

**Differentiating Instruction**

**Intermediate and Advanced**

- Set up lanes that students need to travel in.
- Include stop signs and intersections.



**Best Practices**

1. Complete this activity when weather prevents riding outside.



# SAFE RIDING WORKSHEET

## ANSWER KEY



1. What does safe riding mean to you?

**Answers may vary. Use responses to facilitate discussion.**

2. Why is it important to ride safely?

**To prevent injury and/or death**

3. What are some of the rules of the road for bicyclists?

**Any of the following:**

- Obey traffic signs and signals**
- Signal turning and stopping**
- Pass on the left**
- Ride with the flow of traffic**
- Other answers may be accepted.**

4. What are some “don’ts” for bicyclists?

**Any of the following:**

- Not wearing a bicycle helmet**
- Wearing earphones**
- Not following rules of the road**
- Not signaling**
- Riding against traffic**
- Other answers may be accepted.**



# SKILL-BASED ACTIVITY

## Bicycle Helmet Function

- Timeframe** **Beginner:** up to 15 minutes  
**Intermediate:** up to 10 minutes  
**Advanced:** up to 10 minutes
- Objective** At the conclusion of the activity, the student will be able to:
1. Accurately describe how a properly fitted bicycle helmet protects the brain, as measured by successful completion of the *Bicycle Helmet Function* worksheet. (Cognitive)
- National Standards** Standard 2  
Standard 4
- Equipment**
- A cracked helmet from a previous crash (optional)
  - Consumer Product Safety Commission (CPSC) brochure: Which Helmet for Which Activity?
    - <http://www.cpsc.gov/PageFiles/122399/349.pdf>
  - A bicycle helmet with Consumer Product Safety Commission (CPSC) safety label
  - A multi-use helmet with CPSC label (optional)
  - Pencils
  - *Bicycle Helmet Function* worksheet
- Teacher Overview** This activity helps students understand what happens to the brain when it is injured and how bicycle helmets are constructed to help prevent injuries. A visual demonstration of the effectiveness of a bicycle helmet in protecting the brain from injury can be performed as part of this activity to reinforce discussion points.
- Preparation**
1. Determine if there is a state or local bicycle helmet law/regulation/ordinance that affects students and include in the lesson. For state laws see: <http://www.bhsi.org/mandator.htm>; for local laws, search for bicycle laws and your county or contact local law enforcement.
  2. Make appropriate number of copies of *Bicycle Helmet Function* worksheet.

## Directions

1. Introduce this activity using the following prompt:

*Today, we will be learning how a helmet works and how it helps protect your brain. To better understand why it is so important to protect your brain from injury, we are also going to learn what can happen if your brain is injured.*

2. Use the following sample questions to prompt students' thinking about the content in this activity.

**Q: What is the purpose of a bicycle helmet?**

**A:** Any of the following:

- A bicycle helmet reduces the risk of a brain injury.
- Other answers may be accepted.

**Q: How does a helmet protect your head if you crash?**

**A:** Any of the following:

- The helmet absorbs the crash forces instead of your brain.
- Other answers may be accepted.

**Q: Why should you wear a helmet every time you ride?**

**A:** Any of the following:

- A crash can happen at any time regardless of rider skill or length of a trip.
- Other answers may be accepted.
- Discuss brain injuries and the importance of prevention. The information provided supports this discussion; adjust as needed based on the age/developmental level of the students. The point to emphasize to students is for them to tell an adult or have a friend tell an adult, if they hit their head. Additional information about brain injuries and how to prevent them can be obtained from the Centers for Disease Control and Prevention at: <http://www.cdc.gov/TraumaticBrainInjury/index.html>.

**How does the brain get hurt?**

Most brain injuries in children occur because of falls, car crashes and bicycle/sports injuries. Sometimes a child hits his head hard enough to hurt the brain inside. The brain can be damaged if it bounces against the inside of the skull. When this happens a person can have trouble doing things they were able to do before.

**What happens if your brain is hurt?**

Anytime your brain is hurt, your ability to do things you normally do will be affected. If a brain injury is suspected, you need to go to the emergency room so a medical professional can assess you. You might need special pictures taken like a CT (computed tomography) scan or an MRI (magnetic resonance imaging) to make certain you do not have a serious injury like a fracture or bleeding in your brain. Brain injuries can be very serious and may result in death if not treated. Even if you do not have a serious brain injury, you may have a concussion. A concussion is also an injury to the brain, but to a lesser degree and often there is no visible sign of injury to the head. Loss of consciousness may or may not happen. The best treatment for a concussion is rest. The brain can be hurt so seriously that you could be unconscious for several hours, days or permanently. This is called a coma.

### What happens after a brain injury?

Since your brain controls everything you think and do, a brain injury may cause your brain to “forget” how to do some things, like talk, walk, eat, remember things, understand other people’s conversations or do physical activities – like riding a bicycle. Your brain sends messages to the rest of your body to allow it to carry out these skills; sometimes these skills have to be relearned following a brain injury. Most people fully recover from a “mild” brain injury like a concussion. Recovery from moderate to severe brain injuries can take many months to years. With very severe brain injury, a person can die. Most people who die from head injuries resulting from bicycle crashes were not wearing a helmet at all or were wearing it incorrectly. The best way to protect your brain is to wear a properly fitted helmet every ride.



### Is It a Concussion?

[www.cdc.gov/concussion/signs\\_symptoms.html](http://www.cdc.gov/concussion/signs_symptoms.html)

### SYMPTOMS OF CONCUSSION USUALLY FALL INTO FOUR CATEGORIES:

Thinking/ Remembering	Physical	Emotional/ Mood	Sleep
Difficulty thinking clearly	Headache Fuzzy or blurry vision	Irritability	Sleeping more than usual
Feeling slowed down	Nausea or vomiting (early on) Dizziness	Sadness	Sleep less than usual
Difficulty concentrating	Sensitivity to noise or light Balance problems	More emotional	Trouble falling asleep
Difficulty remembering new information	Feeling tired, having no energy	Nervousness or anxiety	

Some of these symptoms may appear right away, while others may not be noticed for days or months after the injury or until the person starts resuming their everyday life and more demands are placed upon them.

**What to do if a concussion is suspected:**

- Stop the activity
- See a medical provider for evaluation
- In rare cases, a dangerous blood clot may form on the brain in a person with a concussion and crowd the brain against the skull. Seek immediate help from a health care professional or emergency department if any of the following danger signs appear after a bump, blow or jolt to the head or body.
- Serious symptoms requiring immediate medical attention (contact a medical professional) include:
  - Headache that gets worse and does not go away.
  - Weakness, numbness or decreased coordination.
  - Repeated vomiting or nausea.
  - Slurred speech.
  - Looks very drowsy or cannot be awakened.
  - One pupil (the black part in the middle of the eye) larger than the other.
  - Convulsions or seizures.
  - Cannot recognize people or places.
  - Getting more and more confused, restless or agitated.
  - Unusual behavior.
  - Loss of consciousness (*a brief loss of consciousness should be taken seriously and the person should be carefully monitored*).

**3. Discuss the different types of helmets.**

The following information is meant to support this discussion. Adjust what is shared as needed for the age /developmental level of the students.

- **Helmets for Different Activities:** There are different types of helmets for different types of activities. Helmets are specifically designed to protect the brain from injuries associated with specific sports. It is important to use the right helmet for the right sport to protect the brain appropriately from injury. You would never wear a football helmet to go bicycling. Some multi-use helmets are suitable for use with bicycling. The manufacturer's label will state this specifically.
- For additional information see the Consumer Product Safety Commission (CPSC) brochure: *Which Helmet for Which Activity* at: [www.cpsc.gov/PageFiles/122399/349.pdf](http://www.cpsc.gov/PageFiles/122399/349.pdf)



**Helmet Effectiveness Demonstration.** Performing a demonstration of the effectiveness of a bicycle helmet in protecting the brain from injury can be included in this activity to visually reinforce the information that has been provided to students. Several examples of projects to accomplish this can be found in the NHTSA Demonstrating Helmet Effectiveness—A How-to Guide at: [www.nhtsa.gov/DOT/NHTSA/Traffic%20Injury%20Control/Articles/Associated%20Files/811110.pdf](http://www.nhtsa.gov/DOT/NHTSA/Traffic%20Injury%20Control/Articles/Associated%20Files/811110.pdf).

#### 4. Discuss safety certifications used for bicycle helmets.

Share age/developmentally appropriate information regarding bicycle helmet safety standards, including the minimum safety standard established by the Consumer Product Safety Commission (CPSC). For additional information about bicycle helmet safety standards, see the Bicycle Helmet Safety Institute (BHSI) at: <http://www.bhsi.org/>.

### Consumer Product Safety Commission (CPSC) Safety Standard:

Beginning in March 1999, all bicycle helmets sold and manufactured in the U.S. have to meet the Consumer Product Safety Commission (CPSC) bicycle helmet safety standard, to ensure a minimum level of protection against head injury. This safety standard addresses:

- Head impact protection in a crash: G-forces must be below 300g.
- Instruct students to always look for the sticker that says the helmet meets CPSC safety standards.
- Show students a helmet with the sticker and have students find the sticker on their helmet.
- Children's helmets and head coverage: CPSC standard has two categories of helmets: helmets intended for persons older than one year and helmets intended for persons older than five years. The first category applies to young children and the second to older children and adults. The only difference in the requirements for these two categories is in head coverage. The helmets intended for young children are subject to impact testing over a greater area of their surface.
- Chin strap strength
- Helmet stability
- Peripheral vision

#### 5. Discuss replacing helmets.

- Bicycle helmets are designed to be replaced after a crash, even if you can't see the damage.
- If a helmet has even slight damage and is not replaced, it will not protect the brain from injury if the user is in a crash.
- Slight damage or small cracks may not be noticeable to the naked eye. If you fall and hit your head, replace the helmet.

#### 6. Discuss how helmets are constructed to protect the brain from injury.

The information below is meant to support this discussion. Adjust what is shared as needed for the age/developmental level of the students. To reinforce the construction of the bicycle helmet, an option is to show students a bicycle helmet that has been involved in a crash, if one is available.

- **Front and back of helmet:** The front and back of the helmet protect the various parts of the brain (the frontal lobe, occipital lobe and the cerebellum) from impact. Make sure the helmet is level on the head and low on the forehead, no more than two finger widths above the eyebrow, to fully protect the frontal lobe.

#### Reminder:

Crash and Trash  
or One and Done.

## Other Helmet Safety Standards

**American Society for Testing Materials (ASTM):** Prior to the CPSC standard, the ASTM1447 standard was the most widely used bicycle helmet safety standard in the U.S. Both standards are basically identical except that the ASTM standard is voluntary. Manufacturers can label the helmet as meeting the ASTM1447 standard without having to verify with independent testing. Bicycle helmets are often still labeled as meeting the ASTM1447 standard in addition to having the CPSC label. The ASTM standard for biking and recreational inline skating are identical. Aggressive skating and skateboard helmets have their own ASTM standard designed for multiple hits with lesser impact severity. ASTM has other standards that are currently used for helmets for other activities such as skating, skiing and downhill bicycle racing.

**American National Standards Institute (ANSI):** The ANSI standard for bicycle helmets was a common standard in the mid-1980s through the early 1990s. However as of 1995, the ANSI standard was considered to no longer be a valid certification standard. Some helmets may continue to be labeled as meeting the ANSI standard, however it is best practice to ignore these labels and look for one of the currently recognized standards.

**Snell Memorial Foundation (Snell):** Snell helmet safety standards have stricter head impact levels higher than other standards for helmets for a variety of different activities such as motorcycle, bicycle, equestrian, ski and others. Snell also collects helmets from the retail setting for additional follow-up testing to ensure the standard is being followed as a manner to ensure quality control. Manufacturers pay additional money for Snell testing, which is then passed on to the consumer. The Snell standard is usually found on higher-end helmets and generally considered to be a stricter standard. However, there is debate over the types of impact best suited for those helmets with the Snell standard. In order to perform at higher head impact levels the foam needs to be quite stiff resulting in less protection at lower impact levels where the stiffer foam may not crush at all. Ultimately, the type of bicycle riding that will occur should be a good indicator of the necessary standard. There are three basic Snell bicycle helmet standards.

1. Snell B90: This standard is very similar to the CPSC standard.
2. Snell B95: This standard resulted from a revision to the B90 standard in that it requires more head coverage and has slightly higher head impact drop heights.
3. Snell B94: This standard is a true multi-sport standard for non-motorized activities that involve speed, balance and agility. A helmet certified for only bicycling will not provide the necessary protection for activities such as aggressive in-line skating and skateboarding. The opposite is true as well because of the different types of potential injuries with each of these activities. However, the N-94 standard requires that the helmet pass multiple impact tests to the back of the helmet as well.

- **Shell:** The outer shell of a helmet should be smooth, hard and slick to limit sliding resistance with the road. This will help to decrease the risk of spinal cord injury that may occur if the helmet does not slide smoothly on the road surface.
- **Foam:** The foam reduces the peak energy of a sharp impact to the head and brain by crushing in on itself. As the foam crushes, it converts a small part of the crash energy to heat and, most importantly, slows the stopping process. When the foam is crushed to its limit, the rest of the impact energy is passed on to the head and brain. The foam does not bounce back because this would make the impact worse. Crushing the cell walls destroys the impact management ability for most stiff foams, so the helmet has to be replaced after a single impact, even if there isn't visible damage. The foam can also recover some of its thickness over a period of hours, but not its ability to manage impact. Helmets should always be disposed of after a single impact.
- **Straps, adjuster and chin buckle:** The bicycle helmet straps, adjuster and chin buckle keep the helmet from moving during a crash and exposing the head to impact. If the straps and adjuster are not positioned properly, the bicycle helmet will not stay in the correct position on the head.
- **Pads and universal fit mechanism:** The pads and/or universal fit mechanism are used to ensure that the helmet fits on the head snugly.
- **Vents:** The bicycle helmet vents encourage air flow, to help prevent overheating.

### Reminder:

Crash and Trash or One and Done.

## 7. Explain helmet laws.

Use the information below supplemented with information about the existence/non-existence of bicycle helmet laws specific to the location in which the lesson will be taught. Adjust what is shared as needed for the age/developmental level of the students.

- **State Law:** Bicycle helmet laws vary among states and cities. A state may have a statewide helmet law for certain ages; or cities may have local ordinances with stricter laws. Know your law. For the most updated list of laws, see: <http://www.helmets.org/mandator.htm>
- **Local Law:** Discuss with students if there is/is not a law/regulation/ordinance that requires people of a certain age to wear a bicycle helmet. Note: Local laws can be enacted in the absence of a state law or can be stricter than the state law. Schools can also require students bicycling to school to wear helmets. Discuss with students, in the absence of helmet laws for adults, why adults should also wear a helmet every ride.

For specifics to your state laws, use a search engine for bicycle helmet laws plus your state.

## Helmet Law Limitations

Bicycles are associated with more injuries and deaths than any other consumer product other than the automobile. This suggests the important role that safety plays when riding a bicycle. You can play a pivotal role in reducing injuries and deaths associated with bicycle crashes, by reinforcing the use of a bicycle helmet by everyone, every ride. Bicycle helmet laws predominantly address children under 16 years of age. States and localities often enact child-specific laws because they tend to pass easier and adults are more likely to support laws designed to protect children. Unfortunately, this often gives the false impression that only young children are at risk for a bicycle-related injury. This continues to be reinforced as helmet usage tends to decrease with age. Everyone regardless of age and skill level should always wear a bicycle helmet on every ride. You may wish to initiate a be a “Roll” Model campaign to encourage youth to engage their peers and their parents/adults to be “roll” models when bicycling and driving around bicyclists.

For more information on this campaign see NHTSA’s site:  
[www.nhtsa.gov/Driving+Safety/Bicycles/Be+a+Roll+Model](http://www.nhtsa.gov/Driving+Safety/Bicycles/Be+a+Roll+Model).



### Assessment

Divide students into groups of two to three. Instruct students to work in groups of two or three to complete the *Bicycle Helmet Function* worksheet.

### Safety

None

### Differentiating Instruction

#### Adapted

- Discussion should be sensitive to students who may have a brain injury.

#### Beginner

- The visual demonstration may help younger or visual learners and beginner bicyclists better appreciate the need to properly wear a bicycle helmet.

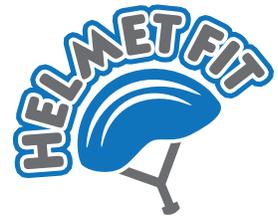
#### Intermediate and Advanced

- Incorporate information on how bicycle safety standards are tested.

### Best Practices

1. Teach this activity during health to provide more time for on-the-bike instruction in the physical education classroom/gym.
2. Discuss the importance of always removing helmets prior to play on playground equipment to prevent serious injury.
3. For additional information, see:
  - **Consumer Product Safety Commission warning**  
[www.cpsc.gov/CPSCPUB/PREREL/PRHTML99/99065.html](http://www.cpsc.gov/CPSCPUB/PREREL/PRHTML99/99065.html)
  - **Which Helmet for Which Activity**  
[www.cpsc.gov/PageFiles/117293/349.pdf](http://www.cpsc.gov/PageFiles/117293/349.pdf)
  - **CPSC Safety Alert about Bicycle Helmets and Playgrounds**  
[www.cpsc.gov/en/Newsroom/News-Releases/1999/After-Recent-Death-CPSC-Warns-Against-Wearing-Bike-Helmets-on-Playgrounds](http://www.cpsc.gov/en/Newsroom/News-Releases/1999/After-Recent-Death-CPSC-Warns-Against-Wearing-Bike-Helmets-on-Playgrounds)

# BICYCLE HELMET FUNCTION WORKSHEET



Student \_\_\_\_\_ Date \_\_\_\_\_

**Directions:** Please correctly label the bicycle helmet parts by matching the letter on the helmet with the part listed on this worksheet. After labeling, please explain the function of each part of the helmet.



\_\_\_\_\_ Front of helmet

\_\_\_\_\_ Back of helmet

\_\_\_\_\_ Shell

\_\_\_\_\_ Foam

\_\_\_\_\_ Universal-fit mechanism

\_\_\_\_\_ Straps

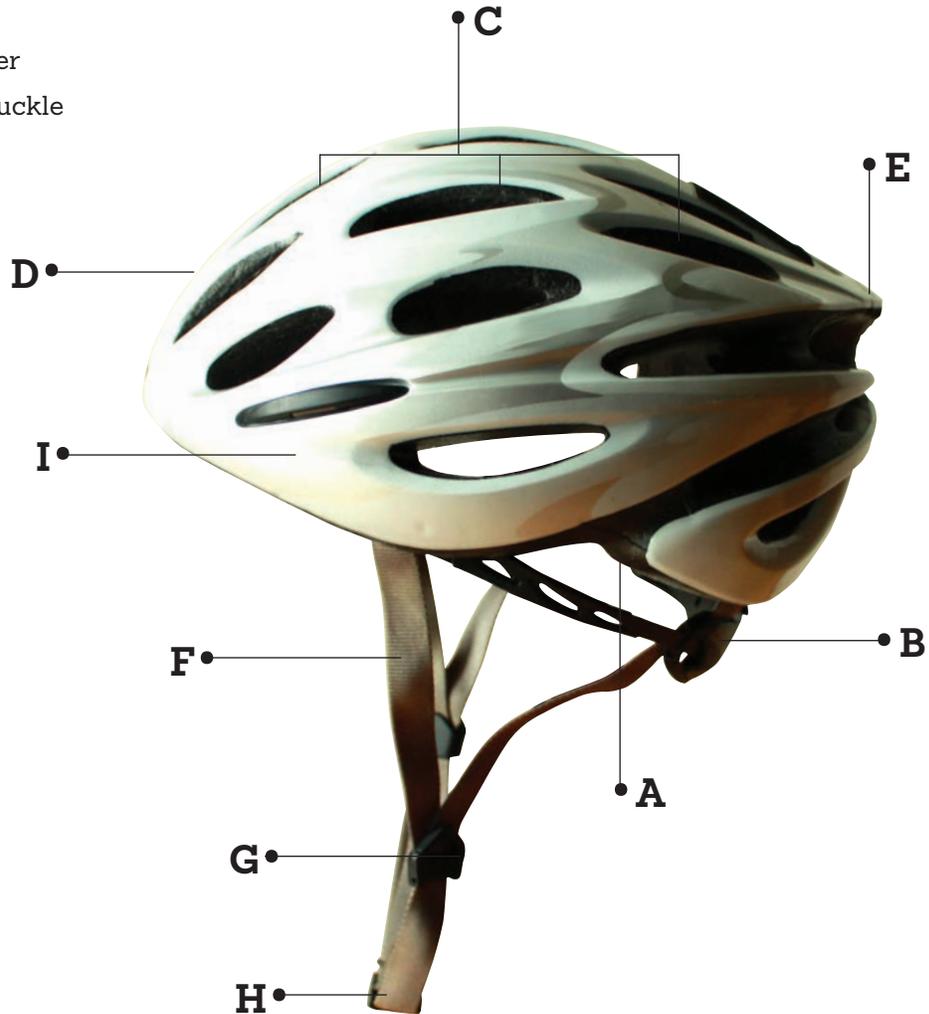
\_\_\_\_\_ Adjuster

\_\_\_\_\_ Chin buckle

\_\_\_\_\_ Vents

# BICYCLE HELMET FUNCTION WORKSHEET ANSWER KEY

- A Foam
- B Universal-fit mechanism
- C Vents
- D Front of helmet
- E Back of helmet
- F Straps
- G Adjuster
- H Chin buckle
- I Shell





# SKILL-BASED ACTIVITY

## Bicycle Helmet Fit

- Timeframe**      **Beginner:** 20 minutes  
**Intermediate:** 15 minutes  
**Advanced:** 15 minutes
- Objective**      At the conclusion of the activity, the student will be able to:
1. Demonstrate exceptional or reliable bicycle helmet fit as measured by the helmet fit rubric. (Psychomotor)
- National Standards** Standard 2  
Standard 4
- Equipment**      • Helmets  
• Head barriers  
• Pencils  
• *Bicycle Helmet Fit* worksheet
- Teacher Overview** This activity teaches students how to properly fit a bicycle helmet. This is a critical activity to help prevent brain injuries anytime students will be riding bicycles including during class time.
- Preparation**      1. Send home information about the bicycle unit of instruction several days in advance of the beginning of the unit to encourage students to arrive with bicycle helmet “friendly” hairstyles.
2. If helmets have not yet been ordered, request that they be color-coded for each size. Example: Red helmets are small, silver helmets are medium and blue helmets are large. If helmets are already present and are not color-coded, organize the helmets by numbering them from smallest to largest. Record the range of each size. Example: Small helmets are numbered 1-15; medium helmets are numbered 16-28.
  3. Provide head barriers if using a classroom set of helmets that are shared among students. Proper head barriers could be bandannas, bouffant caps, painter’s caps, book socks, etc. Do not use plastic head barriers. Plastic materials do not allow for air circulation, which can cause overheating.
  4. Determine the adjustment mechanism of the helmets. If only using helmet pads to adjust the helmet fit, ensure there are ample pads of various sizes for students to use. If helmets have a universal fit mechanism, become familiar with how to adjust the mechanism.  
Make appropriate number of copies of *Bicycle Helmet Fit* worksheet.

## Directions

1. Introduce this activity using the following prompt:

*Today, we will be learning how to properly fit a bicycle helmet. This is one of the most important skills you will learn. In order for a helmet to protect the head, it has to be properly fitted. A helmet won't do any good in a crash if the straps are loose or the helmet is sitting too far back on your head. A bicycle helmet is easy to fit when you know the steps to take. You should always check the fit of your helmet before each bicycle ride.*

2. Use the following sample questions to prompt students' thinking about the content in this activity.

**Q: What is the correct way to wear a helmet?**

**A:** Any of the following:

- Level on the head, approximately 2 finger widths above the eyebrow
- Straps snug and in a "V" under each ear
- The chin strap snug allowing only about 2 fingers between the chin and the chin strap
- The helmet should not easily move around on the head
- Other responses may be accepted

**Q: What are some different, unsafe ways you have seen people wear helmets?**

**A:** All responses are acceptable

**Q: Why doesn't a helmet protect the head when it's worn incorrectly?**

**A:** Any of the following:

- Crash forces may be directed to the brain as opposed to the helmet
- Helmet could fall off
- Other responses may be accepted

3. Identify the following parts of the bicycle helmet for students: front of helmet, back of helmet, shell, pads, foam, universal fit mechanism, straps, adjuster, chin buckle and air vents.

4. Discuss with students that there is a right way and a wrong way to wear a helmet. If the helmet is worn incorrectly, it cannot effectively protect the brain from injury. The most common mistakes made are:
  - Not wearing a helmet at all
  - Helmet too far off the forehead
  - Helmet straps not buckled
  - Helmet not fitted properly (example: straps too loose, straps twisted)

### Common Mistakes With Helmet Use

- Not wearing a helmet at all
- Helmet too far off the forehead
- Helmet straps not buckled
- Helmet not fitted properly (example: straps too loose, straps twisted)

5. Use the following steps to properly fit a bicycle helmet. Go over each step with students demonstrating what will be required of students before they complete the activity themselves. Verifying that the helmet is fitted properly according to these steps will be referred to as the Bicycle Helmet Check from this point forward. This should be performed at the beginning of any lesson that involves on-the-bike activity.

- Choose a helmet that fits snugly on the head. If the helmet is too big or too small, try another helmet. Newer helmets have a universal-fit mechanism in the back of the helmet, which can be used to make adjustments to fit.
- Sit helmet level on your head approximately two finger widths above the eyebrow.
- Slide each adjuster so the straps form a “V” under each ear. The adjuster should be positioned under and slightly in front of the ear lobe.
- Adjust the chin strap so that approximately two fingers fit between the chin and strap when buckled.
- Explain the 2-2-2 rule to students to ensure safety:
  - 2 fingers width between eyebrow and helmet
  - 2 straps make the “V” under and slightly in front of each ear lobe
  - 2 fingers between the chin and strap



- Helmets should not “rock-n-roll.”
  - If the helmet rocks back more than two fingers above the eyebrows, unbuckle, shorten the front strap, buckle and test again
  - If the helmet rocks forward over eyes, unbuckle, shorten the back strap, buckle and test again.

6. Pair students with partners or put into small groups to complete the helmet fit activity using the *Bicycle Helmet Fit* worksheet.

7. One student should complete the activity while the other completes the *Bicycle Helmet Fit* worksheet.

8. The peer assessor should ask each question on the *Bicycle Helmet Fit* worksheet and observe the student completing the activity and fill in the worksheet.

- Insert a **YES** on the worksheet if the activity is completed correctly.
- Insert a **NO** on the worksheet if the activity is completed incorrectly.
- If the activity is completed incorrectly, the peer assessor should identify what was incorrect and provide feedback to his peer about how to correctly perform the activity. The student should repeat the activity until it is completed correctly. If having problems, students should seek guidance from the teacher.

9. Encourage peers to assist each other in ensuring the helmet is the correct size and fitted properly.

See: Bicycle  
Helmet Fit  
Worksheet.  
Page 45.



Refer to optional take-home handouts.

10. Prepare and provide NHTSA handout(s) for take home (optional). Make copies from the parent section or print directly from the following links:  
[www.nhtsa.gov/staticfiles/nti/bicycles/pdf/8010-wear\\_a\\_helmet.pdf](http://www.nhtsa.gov/staticfiles/nti/bicycles/pdf/8010-wear_a_helmet.pdf)  
[www.nhtsa.gov/staticfiles/nti/bicycles/pdf/8019\\_Fitting-A-Helmet.pdf](http://www.nhtsa.gov/staticfiles/nti/bicycles/pdf/8019_Fitting-A-Helmet.pdf)

**Assessment**

1. Assess helmet fit of each student using the following rubric:

**PERFORMANCE RUBRIC: HELMET FIT** 

Exceptional	Reliable	Inconsistent	Struggling/ Survival
<p>Student is able to fit helmet correctly on his own, demonstrating the following characteristics of helmet fit (all must be correct):</p> <p>Is snug on head (no rock-n-roll side to side);</p> <p>Sits level on head;</p> <p>Straps form a V under ears;</p> <p>Strap is no more than two finger widths from chin;</p> <p>Does not rock-n-roll on head (forward or backward).</p>	<p>Student can fit helmet correctly, possibly with a little help from a teacher/aide, demonstrating the following characteristics of helmet fit (all must be correct):</p> <p>Is snug on head (no rock-n-roll side to side);</p> <p>Sits level on head;</p> <p>Straps form a V under ears;</p> <p>Strap is no more than two finger widths from chin;</p> <p>Does not rock-n-roll on head (forward or backward).</p>	<p>Student has difficulty fitting helmet correctly, requiring help from teacher/aide, and more than one of the following are not completed correctly:</p> <p>Is snug on head (no rock-n-roll side to side);</p> <p>Sits level on head;</p> <p>Straps form a V under;</p> <p>Strap is no more than two finger widths from chin;</p> <p>Does not rock-n-roll on head (forward or backward).</p>	<p>Student has difficulty fitting helmet correctly, needing a significant amount of help in the process.</p> <p>The student cannot fit a helmet on his/her own.</p>

2. Assess the performance of social behavior for each student using the following rubric.

PERFORMANCE RUBRIC: SOCIAL BEHAVIOR 

Exceptional	Reliable	Inconsistent	Struggling/ Survival
<p>Student is respectful toward classmates, teacher, and equipment;</p> <p>Student receives and uses feedback from teacher and peers in a courteous manner;</p> <p>Student participates fully, without teacher prompting or supervision;</p> <p>Student is able to work cooperatively and productively with classmates, including during peer assessments;</p> <p>Student perseveres, even through difficult skills/activities, and maintains a positive attitude;</p> <p>Student is committed to learning;</p> <p>Student is committed to engaging in cycling in a safe manner, and keeping all classmates safe during the cycling unit.</p>	<p>Student is respectful toward classmates, teacher, and equipment;</p> <p>Student receives and uses feedback from teacher and peers in a courteous manner;</p> <p>Student participates fully, but needs some teacher prompting and/or supervision;</p> <p>Participates in most class activities at an appropriate and productive level;</p> <p>Student is most often able to work cooperatively and productively with classmates, including during peer assessments;</p> <p>Student is able to work hard and not get frustrated with setbacks;</p> <p>Student is committed to learning;</p> <p>Student is committed to engaging in cycling in a safe manner, and keeping all classmates safe during the cycling unit.</p>	<p>Student may not always be respectful toward classmates, teacher, and equipment;</p> <p>Student may listen to feedback from teacher or peers, but may not attempt and/or have difficulty applying it;</p> <p>Student requires some teacher supervision, but does exhibit some self-control at times;</p> <p>Student demonstrates the ability to work cooperatively and productively with classmates, but may need teacher direction or supervision;</p> <p>Student participates in most class activities;</p> <p>Student is willing to try, but may get frustrated with setbacks, and pout and/or verbalize frustration;</p> <p>Student may fluctuate between riding safely and unsafely at times.</p>	<p>Student may struggle with being respectful toward classmates, teacher, and equipment and/or show anger and/or blame others for cycling mishaps;</p> <p>Student does not listen to feedback from teacher or peers, and does not attempt to apply it;</p> <p>Student requires ongoing supervision and does not ride safely;</p> <p>Student may be unprepared and show very little interest in learning or the activity;</p> <p>Student becomes frustrated easily and may quit participating.</p>

## Safety

None

## Differentiating Instruction

### Adapted

- Depending on the student's skill level, a teacher or aide may have to complete this activity for the student.
- At no time should a student be allowed to ride without a helmet. This may mean additional time should be allotted to fit students who may have additional challenges.

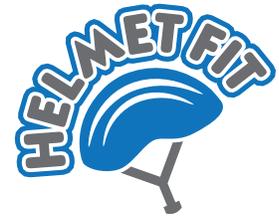
## Best Practices

1. The teacher should perform a quick visual inspection of proper helmet fit at the beginning of every class when on-the-bike activities are involved.
2. Use peers/partners to practice, inspect and correct helmet fit for each other. In addition to this being a way to reinforce proper fit, it will also make the most efficient use of class time. This should not replace teacher assessment.
3. Assign students a numbered helmet or helmet color, once proper fit is determined. This will be the helmet number or color of helmet that the student will use in every class. Log this number or color on the student roll.
4. Teach bicycle helmet instruction in the health classroom, if possible, to allow more time for on-the-bike instruction in the physical education classroom/gym.
5. Purchase and use bicycle helmets with the universal fit mechanisms, as opposed to helmets with only straps, if possible. They are easier for students to adjust and less likely to loosen, therefore saving class time and ensuring the helmet stays properly fit.
6. If students are sharing helmets, use head barriers to prevent head lice.
7. Ensure safety precautions if students opt to use their own helmets:
  - Check for the presence of CPSC label
  - Visually assess for the presence of obvious damage to the helmet
  - Request students to verify that helmets have not been associated with a previous crash. Teachers should have extra helmets on hand for those students who are unsure of their helmet's crash history

## Diagram: Correct Helmet Fit



# BICYCLE HELMET FIT WORKSHEET



Student \_\_\_\_\_ Date \_\_\_\_\_

**Directions:** Peer assessor should ask each question and observe the student completing the helmet fit. Place a checkmark in the **YES** column if the fit is completed correctly. Place a checkmark in the **NO** column if the helmet fit is completed incorrectly. If the activity is completed incorrectly, the peer assessor should identify what was incorrect and write down on the form what corrections need to be made. The student should repeat the helmet fit until it is completed correctly.

Activity	Date: _____		Date: _____		Date: _____	
	Observation 1	Observation 2	Observation 2	Observation 3	Observation 3	Observation 3
	YES	NO	YES	NO	YES	NO
Does the helmet fit snugly on your head? Is there rock-n-roll side to side? <i>Check the universal fit mechanisms / pads inside helmet</i>						
Does the helmet fit level on your head? <i>Check for 2 finger widths between eyebrows and helmet.</i>						
Do the straps form a "V" on both sides of the ears (under the ear and slightly in front of the ear lobes)? <i>Check the straps and adjuster to create a "V" on both sides.</i>						
Do more than two fingers fit between your chin and chinstrap? <i>Readjust the straps so there is no more than 2 finger widths between. This may change the angle of the "V" at the ears, so make sure to keep the "V".</i>						
Does your helmet rock-n-roll when you move your head forward/ backward or side to side? <i>Readjust the straps and possibly the internal fit mechanism, for a better fit.</i>						

Explain any NO checkmarks.





# SKILL-BASED ACTIVITY

## Bicycle Fit

- Timeframe**      **Beginner:** 20 minutes  
**Intermediate:** 15 minutes  
**Advanced:** 15 minutes
- Objectives**      At the conclusion of the activity, the student will be able to:
1. Demonstrate exceptional or reliable bicycle fit, as measured by the bicycle fit rubric. (Psychomotor)
  2. Demonstrate exceptional or reliable social behavior as measured by the social behavior rubric. (Affective)
- National Standards** Standard 2  
Standard 4
- Equipment**      • Bicycles  
• Allen wrench, if needed for seat height adjustment  
• Pencils  
• *Bicycle Fit* worksheet
- Teacher Overview** This activity teaches students how to properly fit a bicycle to the rider. This is an important activity to help ensure the safety and comfort of the bicyclist.
- Preparation**      1. Label bicycles with numbers from the smallest to the largest bicycle.
2. Determine the mechanism on the bicycle to adjust the seat height. Bicycles that have seat quick releases will enable the seat height to be easily adjusted without the use of any tools. If the bicycle does not have a seat quick release, an Allen wrench will be needed to make these adjustments and will require more classroom time.
  3. Make appropriate number of copies of *Bicycle Fit* worksheet.
- Directions**      1. Introduce this activity using the following prompt:
- Today, we will be learning how a properly fit a bicycle to a rider. There are some easy steps to take to make sure a bicycle fits. These should be done every time you are getting on a new bicycle or a bicycle that has been adjusted for another rider. Making sure a bicycle fits the rider will be safer for the rider as well as making it more comfortable to ride.*
2. Use the following sample questions to prompt students' thinking about the content in this activity.

**Q: Have you ever ridden a bike that was too big?**

**A:** All responses are acceptable

**Q: What did that feel like?**

**A:** All responses are acceptable

**Q: Did your legs hurt?**

**A:** All responses are acceptable

**Q: What advantages would there be to a properly fitted bicycle?**

**A:** Any of the following:

- Safety
- Comfort
- Other responses may be accepted

**3.** Demonstrate what is requested of students before allowing students to complete the activity.

**4.** Instruct students to straddle the bicycle with feet flat on the ground and to squat over the top tube.

- Each student should be able to squat about three inches for mountain bikes - from a standing position with feet flat on the ground to sitting on the top tube. If there is too much or not enough clearance, then assist students in finding a bike that is a better fit.
- The fit may vary depending on the type of bike.

**5.** Explain the relationship of seat height to comfort and safety.

- Seat heights that are too high or too low will result in uncomfortable and inefficient riding.
- Riders will often complain that their legs are tired or “burning” if seat height is too low.
- If a seat height is too high, the bicycle may be difficult to control.

**6.** Divide students in groups of three (3) to complete the *Bicycle Fit worksheet for each student*. One person is the cyclist, one assesses and one holds the bike steady.

7. Instruct peers to assess each other by asking the questions on the peer assessment, checking all aspects of bicycle fit and placing a checkmark in the most appropriate box on the worksheet.

The down stroke leg should be almost fully extended, with a slight bend at the knee.

- Instruct the cyclist to sit on the saddle and place the ball of one foot on the pedal in the down stroke or 6 o'clock position.
- If the down stroke leg is too straight or too bent, the seat height can be adjusted up or down to achieve the correct position.

**Proper Positioning.** If the down stroke leg is too straight or too bent, adjust the seat height up or down to achieve the correct position.



- Open the quick release lever on the seat tube. The correct way to use the seat quick release is to swing the lever from the fully closed position to the fully open position. Most levers will have the word "open" and "closed" on each side.
  - To loosen or tighten the quick release, use the knob to adjust the clamping force.
  - Not securing the quick release tightly enough can result in the seat height moving during riding.
  - Securing the quick release too tightly can damage the seat tube.
- Slide the seat post up or down. Ensure the seat post is inserted beyond the minimum insertion (or maximum extension) point of the post.
- To close the quick release, swing the lever from full open to full closed; you should just start to feel some resistance when the lever is perpendicular to the seat post. If you do not feel resistance at this point, tighten the clamping force. If you feel resistance before this point, loosen the clamping force. Not securing the quick release tight enough can result in the seat height moving during riding. Securing the quick release too tightly can damage the seat tube.
- Ensure the lever is tight and the seat cannot be moved before sitting on it.

8. Rotate positions so each student takes a turn fitting, assessing and holding.

**Assessment**

1. Assess bicycle fit of each student using the following rubric:

**PERFORMANCE RUBRIC: BIKE FIT** 

Exceptional	Reliable	Inconsistent	Struggling/ Survival
<p>Student is able to fit a bike correctly on her own, demonstrating the following characteristics of the bike fit (all must be correct):</p> <p>Student can straddle the bike with 3" of clearance between the rider and the top tube;</p> <p>Student can adjust the saddle height so that her knee has a slight bend when the foot/pedal is at the 6 o'clock position;</p> <p>Student's knees are not bent so much that pedaling is inefficient;</p> <p>Student does not rock side to side when pedaling;</p> <p>Seat post has at least 3" (7.6cm) in the seat tube or is not higher than the mark on the post;</p> <p>Nose of saddle is lined up with top tube;</p> <p>Saddle is level or the nose is slightly higher;</p> <p>Quick release on seat post is closed and tight.</p>	<p>Student is able to fit a bike correctly, possibly with a little help from a teacher/aide, demonstrating the following characteristics of the bike fit (all are correct):</p> <p>Student can straddle the bike with 3" of clearance;</p> <p>Student can adjust the saddle height such that her knee has a slight bend when the foot/pedal is at the 6 o'clock position;</p> <p>Student's knees are not bent too much so that pedaling is inefficient;</p> <p>Student does not rock side to side when pedaling;</p> <p>Seat post has at least 3" (7.6cm) in the seat tube or is not higher than the mark on the post;</p> <p>Nose of saddle is lined up with top tube. Saddle is level or the nose is slightly higher;</p> <p>Quick release on seat post is closed and tight.</p>	<p>Student has difficulty fitting bike correctly, requiring help from a teacher/aide, and the majority of the following is not completed correctly:</p> <p>Student can straddle the bike with 3" of clearance;</p> <p>Student can adjust the saddle height so that her knee has a slight bend when the foot/pedal is at the 6 o'clock position;</p> <p>Student's knees are not bent so much that pedaling is inefficient;</p> <p>Student does not rock side to side when pedaling;</p> <p>Seat post has at least 3" (7.6cm) in the seat tube or is not higher than the mark on the post;</p> <p>Nose of saddle is lined up with top tube;</p> <p>Saddle is level or the nose is slightly higher;</p> <p>Quick release on seat post is closed and tight.</p>	<p>Student has difficulty fitting bike correctly, needing a significant amount of help in the process;</p> <p>The student fails to understand the process of fitting a bike.</p> <p>Assess the performance of social behavior for each student using the following rubric.</p>

## PERFORMANCE RUBRIC: SOCIAL BEHAVIOR

Exceptional	Reliable	Inconsistent	Struggling/ Survival
<p>Student is respectful toward classmates, teacher, and equipment;</p> <p>Student receives and uses feedback from teacher and peers in a courteous manner;</p> <p>Student participates fully, without teacher prompting or supervision;</p> <p>Student is able to work cooperatively and productively with classmates, including during peer assessments;</p> <p>Student perseveres, even through difficult skills/activities, and maintains a positive attitude;</p> <p>Student is committed to learning;</p> <p>Student is committed to engaging in cycling in a safe manner, and keeping all classmates safe during the cycling unit.</p>	<p>Student is respectful toward classmates, teacher, and equipment;</p> <p>Student receives and uses feedback from teacher and peers in a courteous manner;</p> <p>Student participates fully, but needs some teacher prompting and/or supervision;</p> <p>Participates in most class activities at an appropriate and productive level;</p> <p>Student is most often able to work cooperatively and productively with classmates, including during peer assessments;</p> <p>Student is able to work hard and not get frustrated with setbacks;</p> <p>Student is committed to learning;</p> <p>Student is committed to engaging in cycling in a safe manner, and keeping all classmates safe during the cycling unit.</p>	<p>Student may not always be respectful toward classmates, teacher, and equipment;</p> <p>Student may listen to feedback from teacher or peers, but may not attempt and/or have difficulty applying it;</p> <p>Student requires some teacher supervision, but does exhibit some self-control at times;</p> <p>Student demonstrates the ability to work cooperatively and productively with classmates, but may need teacher direction or supervision;</p> <p>Student participates in most class activities;</p> <p>Student is willing to try, but may get frustrated with setbacks, and pout and/or verbalize frustration;</p> <p>Student may fluctuate between riding safely and unsafely at times.</p>	<p>Student may struggle with being respectful toward classmates, teacher, and equipment and/or show anger and/or blame others for cycling mishaps;</p> <p>Student does not listen to feedback from teacher or peers, and does not attempt to apply it;</p> <p>Student requires ongoing supervision and does not ride safely;</p> <p>Student may be unprepared and show very little interest in learning or the activity;</p> <p>Student becomes frustrated easily and may quit participating.</p>

## Safety

1. Ensure all seat posts are inserted beyond the minimum insertion (or maximum extension) point of the post.

### Minimum Insertion Line



## Differentiating Instruction

### Adapted and Beginner

- Set up less skilled students with both feet flat on the ground, while seated on the saddle, until skill level advances.
- Use adult tricycles, bicycles with training wheels, etc. for students that may be uncomfortable.

### Intermediate and Advanced

- Discuss the different types of bicycle and fit needed for different types of bicycles (see parent handout)
- Road bikes should have about 1-2 inches of clearance between the rider and the top tube.
- Mountain bikes should have about 3-4 inches of clearance between the rider and the top tube since these bicycles are typically used to ride on bumpy terrain trails the rider will move up and down more.

## Best Practices

1. Assign students a numbered bicycle, once proper fit is determined. This will be the bicycle that the student will ride in every class. This number should be logged on the student roll.
2. Use a bicycle that is too small, rather than one that is too big, if there are not enough properly sized bicycles for all students.

# BICYCLE FIT WORKSHEET



Student \_\_\_\_\_ Date \_\_\_\_\_

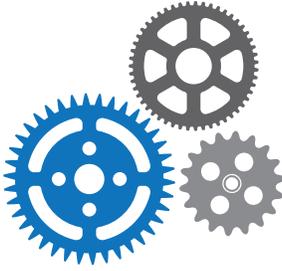
## Directions

1. Complete the bicycle fit in groups of three. One person is the cyclist, one assesses and one holds the bicycle steady. Each student takes a turn fitting, assessing and holding.
2. Assess the peers in your group by asking the questions on the peer assessment, checking all aspects of bicycle fit and placing a checkmark in the most appropriate box.
3. Do not proceed to riding without successfully completing the bicycle fit.

	Date:		Date:		Date:	
	Observation 1		Observation 2		Observation 3	
Activity	YES	NO	YES	NO	YES	NO
Can the bicyclist straddle the top tube and have about 3" of clearance? <i>Make sure the cyclist is standing on flat feet, not on toes.</i>						
When seated, is the bicyclist starting with one foot at 12 o'clock and the other at 6 o'clock? <i>Check to make sure the foot at the 6 o'clock position is at the very bottom of the pedal stroke, not slightly forward or backward.</i>						
With one foot at 6 o'clock, does the knee have a slight bend?						
When the seat height has been determined, is there at least 3" of seat post in the tube or is the line on the seat post <b>not</b> visible? <i>There must be 3" of seat post in the tube for safety reasons.</i>						
Is the nose of the saddle lined up with the top tube? <i>The nose and top tube should be aligned for comfort.</i>						
Is the saddle level or the nose of the saddle slightly higher? <i>The saddle should be level, to keep rider from sliding off the saddle.</i>						
Is the quick release lever of the saddle closed tightly?						

Explain all "NO" responses.



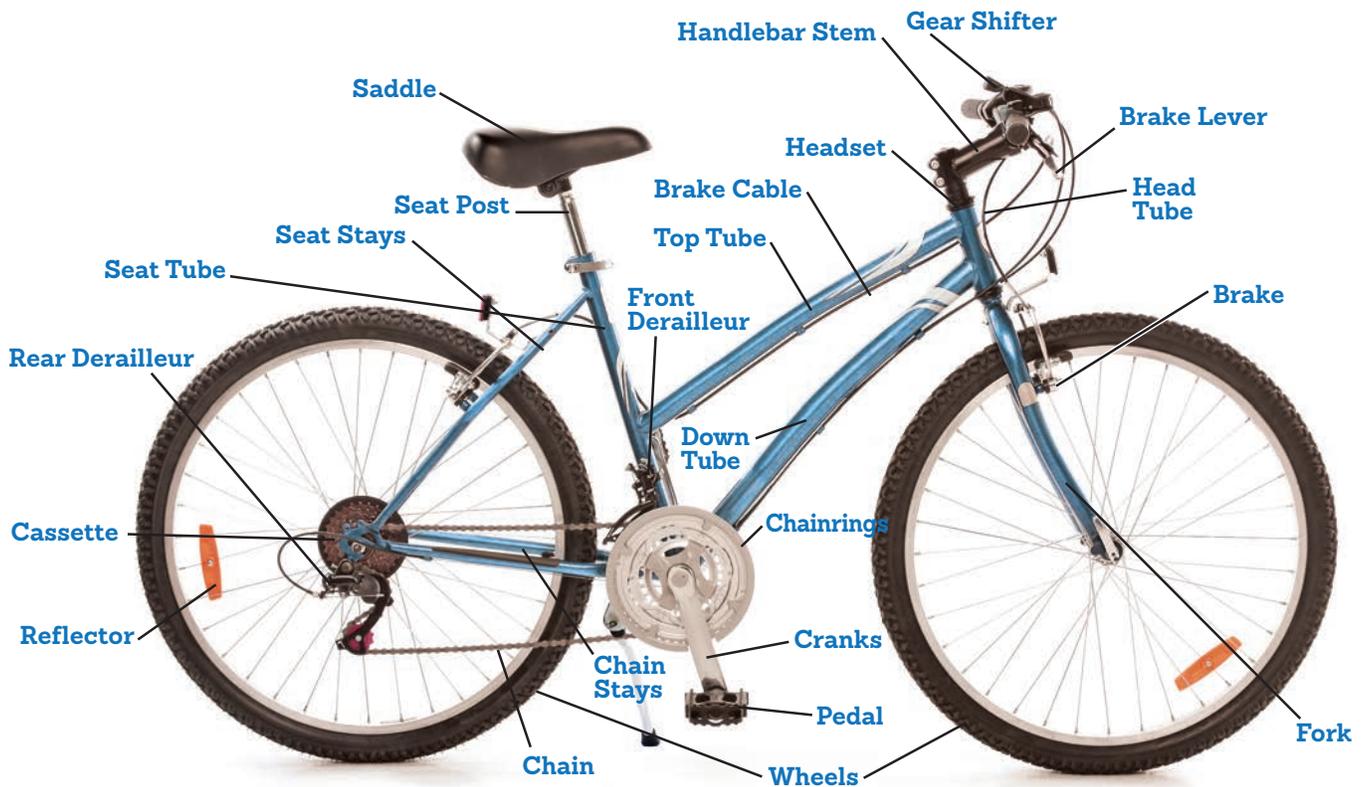


# SKILL-BASED ACTIVITY

## Bicycle Parts

- Timeframe**      **Beginner:** 10-12 minutes  
**Intermediate:** 10 minutes  
**Advanced:** 8-10 minutes
- Objective**      At the conclusion of the unit, the student will be able to:
1. Identify the basic parts of the bicycle, as measured by successful completion of the *Bicycle Parts* worksheet. (Cognitive)
- National Standards** Standard 2  
Standard 4
- Equipment**      • Bicycles  
• Bicycle part labels  
• Tape  
• Pencils  
• Scissors  
• *Bicycle Parts* worksheet
- Teacher Overview** This activity teaches students the proper names for various parts of the bicycle.
- Preparation**      Make appropriate number of copies of *Bicycle Parts* worksheet.  
Cut out each bicycle part to be taped onto bicycle, using bicycle parts labels.
- Directions**      1. Introduce this activity using the following prompt:
- Today, we will be learning the proper names for various parts of the bicycle.*
2. Use the following sample questions to prompt students' thinking about the content in this activity.
- Q: Why is it important to know the right names for the parts on a bicycle?**  
**A:** Any of the following:
- Be more knowledgeable about bicycles
  - Can get the correct part fixed if it is broken
  - Other responses may be accepted
- Q: How many parts can you name?**  
**A:** All responses are acceptable
- Identify the parts of the bicycle for the students by taping the bicycle parts to a bicycle in front of the class.
3. Divide class into small groups of 3-4 students. Students should work together to complete the worksheet.

## Bike Parts Diagram



**Assessment** Use worksheet based on student level: beginner, intermediate or advanced.

**Safety** None

### Differentiating Instruction

#### Beginner

- Instruct students to identify the frame, saddle, wheels, pedal, handlebars, chain and brakes.

#### Intermediate

- Instruct students to identify the frame, saddle, wheels, pedal, handlebars, chain and brakes.
- Instruct students to identify the top tube, seat tube, down tube, head tube, seat stays, chain stays, cranks, chainrings, cassette, rear derailleur, front derailleur, seat post, handlebar stem, headset, brake levers, brake cables, shifters and fork.

#### Advanced

- Identify bicycle parts and which parts are grouped as the frame and the drive train.
- Complete activity as a timed event.

### Best Practices

1. Use peers/partners to practice, inspect and correct each other.
2. Provide options for doing this activity, such as provide student with a completed picture and ask them to tape names of parts to their bike. They could begin doing what they know and use the picture to complete the ones they do not know.

# BIKE PARTS WORKSHEET

## BEGINNER



Student \_\_\_\_\_ Date \_\_\_\_\_

**Directions:** With your partner/group, please correctly label the bike parts by matching the letters in the picture with the parts listed below.



A. Frame

B. Wheels

C. Handlebars

D. Brake

E. Saddle

F. Pedal

G. Chain

# BIKE PARTS WORKSHEET

## ANSWER KEY • BEGINNER



A. Frame

B. Wheels

C. Handlebars

D. Brake

E. Saddle

F. Pedal

G. Chain

# BIKE PARTS WORKSHEET

## INTERMEDIATE



Student \_\_\_\_\_ Date \_\_\_\_\_

**Directions:** With your partner/group, please correctly identify the bike parts by matching the letters in the picture with the parts listed below.



- |                |                     |                 |                    |
|----------------|---------------------|-----------------|--------------------|
| A. Wheels      | B. Handlebar Stem   | C. Brake        | D. Saddle          |
| E. Pedal       | F. Chain            | G. Fork         | H. Top Tube        |
| I. Seat Tube   | J. Down Tube        | K. Gear Shifter | L. Head Tube       |
| M. Seat Stays  | N. Chain Stays      | O. Cranks       | P. Chainrings      |
| Q. Cassette    | R. Front Derailleur | S. Headset      | T. Seat Post       |
| U. Brake Lever | V. Brake Cable      | W. Reflector    | X. Rear Derailleur |

# BIKE PARTS WORKSHEET

## INTERMEDIATE

Each part of the bike listed above belongs in one of three categories: frame, drive train or other. Please write the parts under the correct category. One example has been filled in for you.

**Frame**

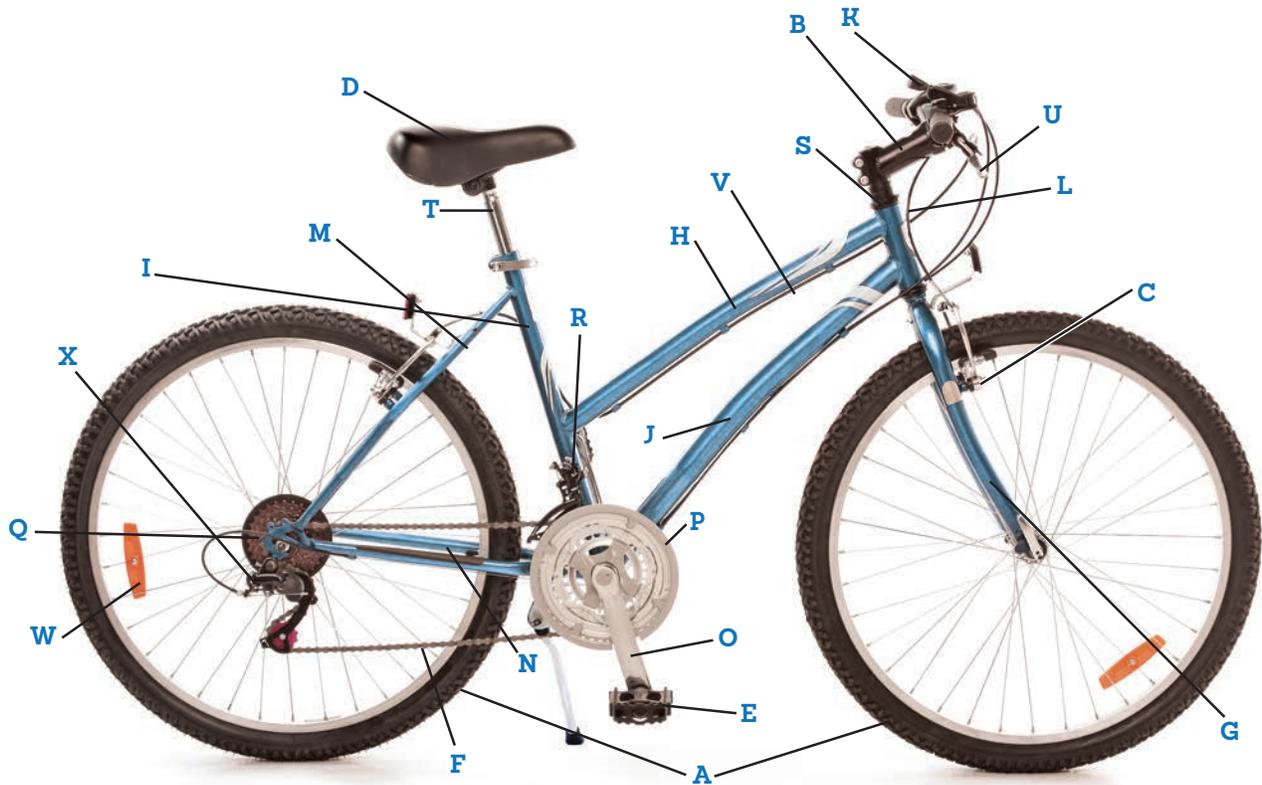
**Drive Train**

**Other**

	chain	

# BIKE PARTS WORKSHEET

## ANSWER KEY • INTERMEDIATE



- |                |                     |                 |                    |
|----------------|---------------------|-----------------|--------------------|
| A. Wheels      | B. Handlebar Stem   | C. Brake        | D. Saddle          |
| E. Pedal       | F. Chain            | G. Fork         | H. Top Tube        |
| I. Seat Tube   | J. Down Tube        | K. Gear Shifter | L. Head Tube       |
| M. Seat Stays  | N. Chain Stays      | O. Cranks       | P. Chainrings      |
| Q. Cassette    | R. Front Derailleur | S. Headset      | T. Seat Post       |
| U. Brake Lever | V. Brake Cable      | W. Reflector    | X. Rear Derailleur |

# BIKE PARTS WORKSHEET

## ANSWER KEY • INTERMEDIATE

Each part of the bike listed above belongs in one of three categories: frame, drive train or other. Please write the parts under the correct category. One example has been filled in for you.

Frame	Drive Train	Other
Top Tube	Chainrings	Saddle
Head Tube	Cassette	Seat Tube
Seat Tube	Crank	Brake Cable
Seat Stays		Wheels
Down Tube		Pedal
Fork		Handlebar Stem
Headset		Reflector
		Handlebars
		Front Derailleur
		Brake Lever
		Brake
		Shifters
		Kickstand

# BIKE PARTS WORKSHEET

## ADVANCED



Student \_\_\_\_\_ Date \_\_\_\_\_

**Directions:** With your partner/group, please correctly identify the bike parts by matching the letters in the picture with the parts listed below.

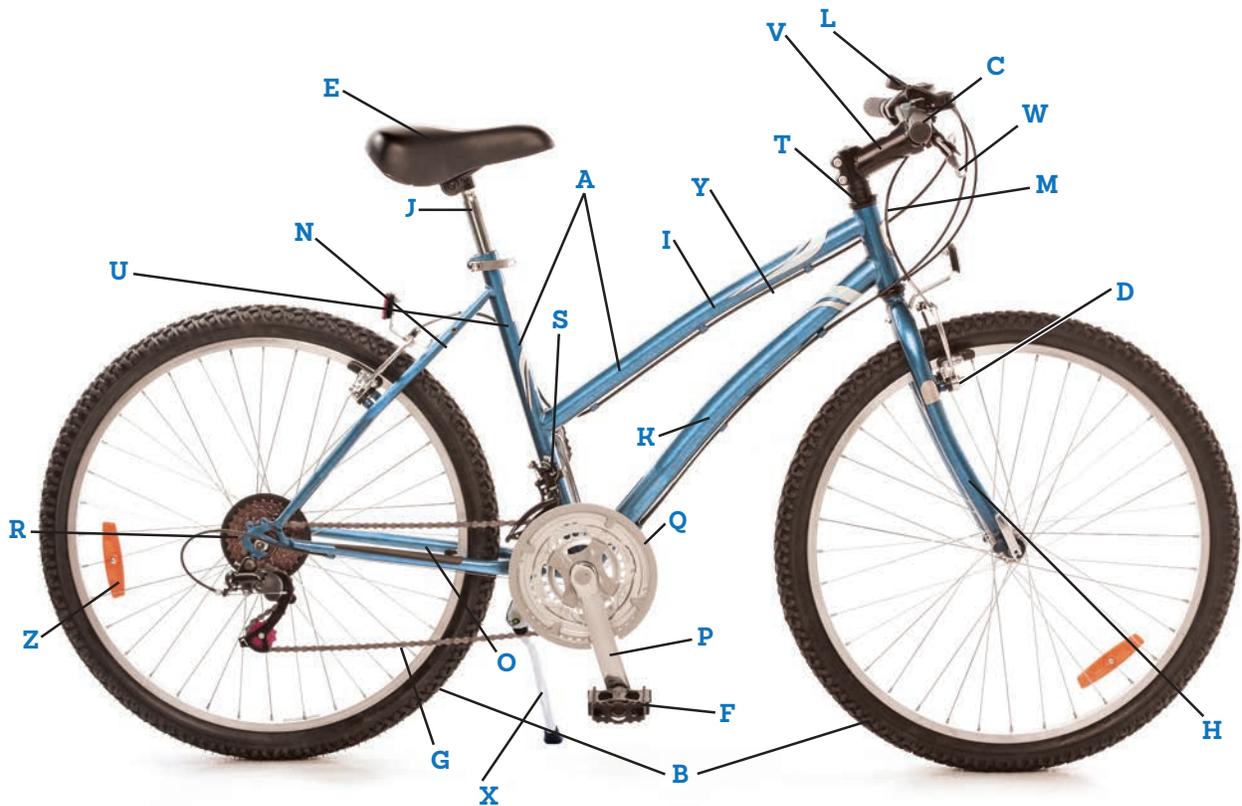


- |                |                   |                     |              |
|----------------|-------------------|---------------------|--------------|
| A. Frame       | B. Wheels         | C. Handlebars       | D. Brake     |
| E. Saddle      | F. Pedal          | G. Chain            | H. Fork      |
| I. Top Tube    | J. Seat Tube      | K. Down Tube        | L. Shifters  |
| M. Head Tube   | N. Seat Stays     | O. Chain Stays      | P. Cranks    |
| Q. Chainrings  | R. Cassette       | S. Front Derailleur | T. Headset   |
| U. Seat Tube   | V. Handlebar Stem | W. Brake Lever      | X. Kickstand |
| Y. Brake Cable | Z. Reflector      |                     |              |



# BIKE PARTS WORKSHEET

## ANSWER KEY • ADVANCED



A. Frame

E. Saddle

I. Top Tube

M. Head Tube

Q. Chainrings

U. Seat Post

Y. Brake Cable

B. Wheels

F. Pedal

J. Seat Tube

N. Seat Stays

R. Cassette

V. Handlebar Stem

Z. Reflector

C. Handlebars

G. Chain

H. Down Tube

O. Chain Stays

S. Front Derailleur

W. Brake Lever

D. Brake

H. Fork

L. Shifters

P. Cranks

T. Headset

X. Kickstand

# BIKE PARTS WORKSHEET

## ANSWER KEY • ADVANCED

Each part of the bike listed above belongs in one of three categories: frame, drive train or other. Please write the parts under the correct category. One example has been filled in for you.

### Frame

Top Tube

Head Tube

Seat Tube

Seat Stays

Down Tube

Fork

Headset

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

### Drive Train

Chainrings

Cassette

Crank

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

### Other

Saddle

Seat Tube

Brake Cable

Wheels

Pedal

Handlebar Stem

Reflector

Handlebars

Front Derailleur

Brake Lever

Brake

Shifters

Kickstand

Brake Cable

Reflector



# SKILL-BASED ACTIVITY

## ABC Quick Check

<b>Timeframe</b>	<b>Beginner:</b> 20 minutes <b>Intermediate:</b> 15 minutes <b>Advanced:</b> 10 minutes
<b>Objectives</b>	At the conclusion of the activity, the student will be able to: <ol style="list-style-type: none"><li>1. Demonstrate exceptional or reliable performance of the ABC Quick Check, as measured by the ABC Quick Check rubric. (Psychomotor)</li><li>2. Demonstrate exceptional or reliable social behavior as measured by the social behavior rubric. (Affective)</li></ol>
<b>National Standards</b>	Standard 1 Standard 2 Standard 4
<b>Equipment</b>	<ul style="list-style-type: none"><li>• Bicycles</li><li>• Helmets</li><li>• Head barriers</li><li>• Tire pump with air pressure gauge</li><li>• Cones</li><li>• Red floor tape</li><li>• Pencils</li><li>• <i>ABC Quick Check</i> worksheet</li></ul>
<b>Teacher Overview</b>	This activity teaches students an important safety check to ensure that the bicycle is in good working condition before riding. This is the first activity in this module that will involve students riding bicycles.
<b>Preparation</b>	<ol style="list-style-type: none"><li>1. Ensure the tire pumps are compatible with the types of valve stems on the tire tubes.</li><li>2. Identify the type of brakes on the bicycle to be able to instruct students how to check for proper function.</li><li>3. Designate a riding course.</li><li>4. If bicycles have both front and rear brakes, wrap the left handle of the bicycle with red floor tape to discourage students from using the front brake, until proper braking skill is taught.</li></ol>

5. Check all quick releases to make sure they are correctly tightened and in the correct direction. Use the correct technique when opening the wheel quick release by swinging the lever from the closed position to the open position. Most levers will have the word “open” and “closed” on each side.
  - To loosen or tighten the quick release, use the knob to adjust the clamping force. To close the quick release, swing the lever from full open to full closed; you should just start to feel some resistance when the lever is parallel to the ground.
  - If you do not feel resistance at this point, tighten the clamping force. If you feel resistance before this point, loosen the clamping force. Not securing the quick release can result in the wheel falling off the bicycle.
6. Make appropriate number of copies of *ABC Quick Check* worksheet

### Directions



1. Introduce this activity using the following prompt:

*Before going out on a bicycle ride, it's important to check your bicycle to make sure it is safe. There is an easy way to remember this. It's called the ABC Quick Check. A stands for Air; B stands for Brakes; C stands for Chain and Crank; Quick means check all Quick Releases; and Check means for check everything with a slow, short ride.*

2. Use the following sample questions to prompt students' thinking about the content in this activity.

**Q: How do you know your bicycle is safe to ride?**

**A:** Any of the following:

- All the parts are working properly
- By testing it out
- Other responses may be accepted

**Q: What parts do you think are important to check?**

**A:** Any of the following:

- Tires
- Brakes
- Chain
- Quick Releases
- Other responses may be accepted

**Q: What can happen if you ride a bicycle that is not safe or that has a problem?**

**A:** Any of the following:

- The rider could get hurt
- More likely to have a bicycle crash
- Won't enjoy the bicycle ride
- Other responses may be accepted

3. Arrange students in a “U” shape to facilitate all students being able to watch your instruction.

4. Demonstrate the ABC Quick Check for the whole group, going through each step and describing the use of the mnemonic as an easy way to remind them of the steps.

**4A. Discuss the letter A stands for Air**

- Explain that maintaining proper air pressure in the tires makes riding more comfortable and increases the life of the tires.
- Check the front and rear tires for air pressure by squeezing the tires. Tires should be hard, not soft. **(Cue)** If tires need air, students should pump up tires.
- Demonstrate how to use a tire pump.

**4B. Discuss the letter B stands for Brakes**

- There are three different types of braking systems: coaster brakes, rim brakes and disc brakes.
- Discuss use of brakes based on the type of brake. If a bicycle has coaster brakes, the rider will stop the bicycle by pedaling backward. If the bicycle has rim or disc brakes, the rider will stop the bicycle by squeezing the brake levers on the handlebar.
- To use the brake lever, always use the index and middle fingers to the apply brakes. The right brake lever stops the rear wheel and the left brake lever stops the front wheel.
- Care should be taken when using the front brake. If the front brake is applied too hard or too quickly, the rider could be propelled over the handlebars.
- Until proper braking skill is taught, only the rear brake should be used. Cover the left-hand brake with red tape and remind students not to use the that brake. Some bicycles, such as BMX bikes, may only have a rear brake.
- Demonstrate proper brake use for students before they try it themselves:
  - Squeeze brake lever to ensure the distance between the brake lever and handlebar is a minimum of 1 inch (from knuckle to knuckle). **(Cue)**
  - Apply brakes while pushing the bicycle forward and backward to ensure that the bicycle stops.

**4C. Discuss the letter C stands for Chain and Crank**

- Explain to students: It is very rare to have a crank that is loose. If this occurs, however, do not use bicycle until it has been repaired by a professional.
- Demonstrate the following to students before they try it themselves.
  - Check the cranks by grasping the crank and trying to move it horizontally toward and away from the frame of the bicycle, to ensure crank is securely attached to the frame.
  - Explain to students that the chain should be completely on a gear to help prevent the chain from falling off.
  - Check the chain by placing a hand under the saddle to lift rear wheel off the ground; using the other hand, grasp the pedal and spin, moving the wheel to ensure the chain is properly set on the gears.



Tires should be hard, not soft.

**Cue:** Hard as a rock.



Ensure the distance between the brake lever and handlebar is a minimum of 1 inch.

**Cue:** 1 inch = from knuckle to knuckle.



Allow enough space for all students to be riding at the same time, three-bicycles-length between each rider.



**Cue:** Three-bicycles-lengths between each rider.

- 4D.** Discuss the words **Quick Check: Quick-check quick releases and Check - check everything with a slow, short ride.** Use the bulleted steps if bicycles have quick release levers or skip to step #5.
- Point to lever behind seat and explain to close the quick release lever so it does not catch on clothing or potentially open.
  - Instruct students to inspect the seat quick release.
  - Explain the front wheel quick release should be closed and pointing in an upward direction, parallel to the fork, so it does not catch on anything on the ground and potentially open.
  - Instruct students to inspect the front wheel quick release.
  - Explain the rear wheel quick release should be closed and pointing toward the front tire, in between the chain and seat stays, so it does not catch on anything on the ground and potentially open.
  - Instruct students to inspect the rear wheel quick release.
- 5.** Explain they will be completing a short, slow ride on the designated course to check for safety and comfort. This is an opportunity for students to evaluate the comfort and efficiency of the bicycle. They need to allow enough space for all students to be riding at the same time. **(Cue)**
- Remind students of the following safety rules while riding:
  - Explain the 2-2-2-2 rule to students to ensure safety and classroom management:
    - 2 wheels on the ground
    - 2 feet on the pedals
    - 2 hands on the handlebars
    - 2 fingers on the brake levers
  - If bicycles have both a front and rear brake, explain to students not to use the brake on the red taped, left handlebar (front brake) during the ride.
- 6.** Explain the ABC Quick Check should be performed before every ride.
- 7.** Divide students into small groups of two to three.
- 8.** Have each group of students complete the *ABC Quick Check* worksheet for each member of the group.
- 9.** Distribute the NHTSA *ABC Quick Check* handout at the end of the class.



Handout reinforces the information taught in class. See:  
[www.nhtsa.gov/DOT/NHTSA/NTI/SRTS/7505-06-ABCQuickCheck.pdf](http://www.nhtsa.gov/DOT/NHTSA/NTI/SRTS/7505-06-ABCQuickCheck.pdf)

**Assessments**

1. Assess performance of the ABC Quick Check of each student using the following rubric:

**PERFORMANCE RUBRIC: ABC QUICK CHECK** 

Exceptional	Reliable	Inconsistent	Struggling/ Survival
<p>Student is able to conduct the ABC Quick Check correctly on his own, demonstrating the following characteristics (all must be correct):</p> <ul style="list-style-type: none"> <li>Checks both tires for air;</li> <li>Checks both front and rear brakes (knuckle to knuckle) by spinning each tire and squeezing each brake;</li> <li>Checks the front chainring (gears) by grabbing the crank set and jiggling it;</li> <li>Checks the chain by turning the pedals with the rear wheel off the ground;</li> <li>Checks all quick releases (seat post, front, and rear wheel) for security;</li> <li>Takes a short ride for overall check.</li> </ul>	<p>Student is able to conduct the ABC Quick Check correctly, possibly with help from a peer (peer assessment process may serve to guide specific details of process), demonstrating the following characteristics (all must be correct):</p> <ul style="list-style-type: none"> <li>Checks both tires for air;</li> <li>Checks both front and rear brakes (knuckle to knuckle) by spinning each tire and squeezing each brake;</li> <li>Checks the front chainring (gears) by grabbing the crank set and jiggling it;</li> <li>Checks the chain by turning the pedals with the rear wheel off the ground;</li> <li>Checks all quick releases (seat post, front, and rear wheel) for security;</li> <li>Takes a short ride for overall check.</li> </ul>	<p>Student has difficulty conducting the ABC Quick Check correctly, requiring help from a teacher/aide, and more several of the following are not completed correctly:</p> <ul style="list-style-type: none"> <li>Checks both tires for air;</li> <li>Checks both front and rear brakes (knuckle to knuckle) by spinning each tire and squeezing each brake;</li> <li>Checks the front chainring (gears) by grabbing the crank set and jiggling it;</li> <li>Checks the chain by turning the pedals with the rear wheel off the ground;</li> <li>Checks all quick releases (seat post, front, and rear wheel) for security;</li> <li>Takes a short ride for overall check.</li> </ul>	<p>Student has difficulty conducting the ABC Quick Check correctly, needing a significant amount of help in the process. The student fails to understand the process of the ABC Quick Check.</p>

2. Assess the performance of social behavior for each student using the following rubric.

PERFORMANCE RUBRIC: SOCIAL BEHAVIOR 

Exceptional	Reliable	Inconsistent	Struggling/ Survival
<p>Student is respectful toward classmates, teacher, and equipment;</p> <p>Student receives and uses feedback from teacher and peers in a courteous manner;</p> <p>Student participates fully, without teacher prompting or supervision;</p> <p>Student is able to work cooperatively and productively with classmates, including during peer assessments;</p> <p>Student perseveres, even through difficult skills/activities, and maintains a positive attitude;</p> <p>Student is committed to learning;</p> <p>Student is committed to engaging in cycling in a safe manner, and keeping all classmates safe during the cycling unit.</p>	<p>Student is respectful toward classmates, teacher, and equipment;</p> <p>Student receives and uses feedback from teacher and peers in a courteous manner;</p> <p>Student participates fully, but needs some teacher prompting and/or supervision;</p> <p>Participates in most class activities at an appropriate and productive level;</p> <p>Student is most often able to work cooperatively and productively with classmates, including during peer assessments;</p> <p>Student is able to work hard and not get frustrated with setbacks;</p> <p>Student is committed to learning;</p> <p>Student is committed to engaging in cycling in a safe manner, and keeping all classmates safe during the cycling unit.</p>	<p>Student may not always be respectful toward classmates, teacher, and equipment;</p> <p>Student may listen to feedback from teacher or peers, but may not attempt and/or have difficulty applying it;</p> <p>Student requires some teacher supervision, but does exhibit some self-control at times;</p> <p>Student demonstrates the ability to work cooperatively and productively with classmates, but may need teacher direction or supervision;</p> <p>Student participates in most class activities;</p> <p>Student is willing to try, but may get frustrated with setbacks, and pout and/or verbalize frustration;</p> <p>Student may fluctuate between riding safely and unsafely at times.</p>	<p>Student may struggle with being respectful toward classmates, teacher, and equipment and/or show anger and/or blame others for cycling mishaps;</p> <p>Student does not listen to feedback from teacher or peers, and does not attempt to apply it;</p> <p>Student requires ongoing supervision and does not ride safely;</p> <p>Student may be unprepared and show very little interest in learning or the activity;</p> <p>Student becomes frustrated easily and may quit participating.</p>

## Safety

1. Remind students they should only use the rear brake to stop the bicycle, until their skill level advances to be able to safely use the front brake.
2. Students should only be visually inspecting the quick releases. Advanced students would only practice properly opening/closing and tightening/loosening the wheel quick release after proper instruction and constant supervision by the teacher.

## Differentiating Instruction

### Adapted

- Depending on skill level, teacher or aide may have to perform this activity with the student.

### Beginner

- Students should only use the rear brake to stop the bicycle.
- Instruct students not to use the brake lever on the red side of the handlebar.
- This should be done until their skill level advances to be able to safely use the front brake. Student should only visually inspect the quick releases.
- Perform this activity as a group.

### Intermediate

- Locate the Pounds per Square Inch (PSI) range on the tire.
- Identify the type of brakes on the bicycle.
- Locate the “Open” and “Closed” labels on the seat quick release; practice tightening and loosening the quick releases, as they are opened and closed.
- Perform as a group and then individually.

### Advanced

- Determine the current PSI of each tire by using an air pressure gauge on the tire pump and add or remove air as needed.
- Discuss the two types of tube valves: Presta, Schrader.
- Locate the “Open” and “Closed” labels on both wheel quick release; practice tightening and loosening the quick releases, as they are opened and closed.
- After initial group performance of skill, students can perform this skill individually, in small groups or with partners at the beginning of each class.



Schrader

Presta

## Best Practices



1. Complete the Helmet Check and ABC Quick Check at the beginning of every class in which the students will be riding.
2. Use peers/partners to practice, inspect and correct each other to make the most efficient use of class time and reinforce bicycle safety skills. This should not replace teacher assessment.
3. Attach the tube valve, then raise and lower the tire pump handle. The needle on the air pressure gauge will stop at the current air pressure level. Based on the PSI range on the tire, one can determine if more or less air is needed.
4. Refer to the picture above to see the difference between a Presta and a Schrader valve.
5. Refer to the picture below to see the difference between rim brakes and disc brakes.



**Rim Brakes**



**Disc Brakes**

6. Check for the following if the brake lever touches the handlebars:
  - Check to see that the brake quick release is not open.
  - The handlebars of BMX bikes can turn to face the wrong direction and affect the braking capability.
7. Make minor adjustments to the brake cables.
8. If brake lever still touches the handlebar, the brakes will not work and the bicycle should not be used.
9. Assess the riding skills, bike fit and seat height during this activity.

# ABC QUICK CHECK

## BEGINNER



Student \_\_\_\_\_ Date \_\_\_\_\_

**Directions:** Ask your peer each question and observe your peer completing the ABC Quick Check. Place a checkmark in the **YES** column if it is completed correctly. Place a checkmark in the **NO** column if the ABC Quick Check is completed incorrectly. If the activity is completed incorrectly, the peer assessor should identify what was incorrect and write down what corrections need to be made on the form. Repeat the process until it is completed correctly.

	Date: _____		Date: _____		Date: _____	
	Observation 1		Observation 2		Observation 3	
Activity	YES	NO	YES	NO	YES	NO
Did the bicyclist check the air in the tires? Are the tires "hard as a rock"? <i>Use the air pump if needed.</i>						
Did the bicyclist check the brakes by squeezing both the front and rear brakes and getting knuckle to knuckle? <i>There should be no less than 1" between brake lever and handlebars. If there is more than 1", please see the teacher! The bike should not be ridden!</i>						
Did the bicyclist check the brakes by squeezing the brakes and pushing the bike forward & backward? <i>The bike tires should not move when the brakes are squeezed fully. If they do, please see the teacher! The bike should not be ridden!</i>						
Did the bicyclist check the cranks (front gears) for tightness? Did the cyclist grasp the crank and try to move it horizontally toward and away from the frame? <i>If the crank set is loose, please see the teacher! The bike should not be ridden!</i>						
Did the bicyclist check the chain by turning the pedals with the rear wheel off the ground? <i>Reset the chain if it is not working correctly or see the teacher for help.</i>						

Continued >

	Date:		Date:		Date:	
	Observation 1		Observation 2		Observation 3	
Activity	YES	NO	YES	NO	YES	NO
Did the bicyclist check the saddle quick release to make sure it is closed and in the right direction? <i>The quick release should be pointing to the rear of the bicycle so it does not interfere with clothing.</i>						
Did the bicyclist check the front wheel quick release to make sure it is closed and in the right direction? <i>The quick release should be pointing up and aligned with front fork.</i>						
Did the bicyclist check the rear wheel quick release to make sure it is closed and in the right direction? <i>The quick release should be pointing toward the front wheel in between the chain and seat stays.</i>						
Did the bicyclist take a short slow ride to check for comfort and safety? <i>This allows the rider to notice other problems with the bike they may not have seen in the ABC quick check.</i>						

Please explain any NO checkmarks.

# ABC QUICK CHECK

## INTERMEDIATE



Student \_\_\_\_\_ Date \_\_\_\_\_

**Directions:** Place a checkmark in the **YES** column if the check is completed correctly. Place a checkmark in the **NO** column if the ABC Quick Check is completed incorrectly. Please describe what is being checked for each segment of the ABC Quick Check and describe how the check should be conducted. Please see the teacher if you have questions. Fill in the blanks below the check.

	Successful Check		What is being checked?	How should it be checked?
	YES	NO		
A				
B				
C				
Quick				
Check				

PSI range of tires \_\_\_\_\_

Type of brake system \_\_\_\_\_



# ABC QUICK CHECK ADVANCED



Student \_\_\_\_\_ Date \_\_\_\_\_

**Directions:** Place a checkmark in the **YES** column if the check is completed correctly. Place a checkmark in the **NO** column if the ABC Quick Check is completed incorrectly. Please describe what is being checked for each segment of the ABC Quick Check and describe how the check should be conducted. Please see the teacher if you have questions. Fill in the blanks below the check.

	Successful Check		What is being checked?	How should it be checked?
	YES	NO		
A				
B				
C				
Quick				
Check				

PSI range of tires \_\_\_\_\_

PSI of front tire \_\_\_\_\_

Type of brake system \_\_\_\_\_

PSI of back tire \_\_\_\_\_

Type of tube valve \_\_\_\_\_





# CLOSURE ACTIVITY

## Walk & Share

- Timeframe**      **Beginner:** 3-5 minutes  
**Intermediate:** 3-5 minutes  
**Advanced:** 3-5 minutes
- Objective**      At the conclusion of the activity, the student will be able to:
1. Describe key concepts from Unit 1, bicycle fit, helmet fit and ABC Quick Check, as measured by participation in peer discussion about bicycle safety. (Cognitive)
- National Standards** Standard 2  
Standard 4
- Equipment**      • *Bicycle Safety Word Search* worksheet (optional)  
• *Bicycle Safety Crossword Puzzle* worksheet (optional)
- Teacher Overview** This activity prompts students to think about what they have learned during the first unit by asking questions about correct bicycling behaviors. By working in groups to respond to the questions, the brainstorming will initiate peer discussion about safe bicycling behaviors.
- Preparation**      1. Make appropriate number of copies of *Bicycle Safety Word Search* worksheet and/or *Bicycle Safety Crossword Puzzle* worksheet (optional)
- Directions**      1. Introduce this activity using the following prompt:
- We have now completed Unit 1 – “Getting Ready to Ride.” All of the skills learned in this unit will help you be safe when you are out riding. Helmet fit, bike fit and ABC Quick Check should be completed every time you get on a bike, whether at school or home.*
2. Divide students into pairs.
  3. Ask partners to walk the perimeter of the gym. Explain that they will be given questions that they need to discuss with their partner when walking.
  4. Instruct students to stop when the whistle blows and be prepared to share something that they discussed with their partner.
  5. Use the following sample questions to prompt students’ thinking about the content presented in this unit.
- Q: Why should you wear a helmet every time you ride your bicycle?**  
**A:** To protect your brain from injury

**Q: What are the three most important things to do when fitting your helmet?**

- A:**
- Level on your head
  - Snug straps so it doesn't rock back and forth
  - Snug chin strap

**Q: Why is it important to have a bicycle that fits properly?**

- A:** Any of the following:
- A bicycle that is too big is more likely to result in a crash.
  - A properly fitted bicycle will result in a safer more comfortable ride

**Q: How can you test to see how well a bike fits you?**

**A:** Complete the bicycle fit steps

**Q: What does ABC Quick Check stand for?**

**A:** Air, Brakes, Chain/Crank, Quick Releases and a check everything out with a slow, short ride for safety and comfort

**Q: Why is it important to do pre-ride safety checks?**

- A:** Any of the following:
- To make sure everything is working properly on the bicycle; this could prevent a crash.
  - There may be a problem that you otherwise would not know about.

**Q: What was the most important new thing you learned in this module?**

**A:** All responses are acceptable

6. If desired, use the *Bicycle Safety Word Search* worksheet provided or create a similar one, using a free online word search tool. You may want to simplify the word search for younger students, and possibly not have students answer the questions provided.
7. If desired, use *Bicycle Safety Crossword Puzzle* worksheet provided as a summative form of assessing student understanding. Modify the crossword puzzle by simplifying it as appropriate for younger students. Simplify the puzzle as needed for younger students. Older beginner students, could complete a more difficult crossword puzzle or word search if the information was covered in class and/or students were provided some reading material.

**Assessments**

Check for understanding by asking students to share responses with whole group.

**Safety**

None

**Differentiating Instruction**

**All levels**

- Vary the type of activity students are performing including such things as galloping, sideways sliding, easy jogging, etc.

**Intermediate and Advanced**

- Set up lanes that students need to travel in. Include stop signs and intersections.

# BICYCLE SAFETY WORD SEARCH

Student \_\_\_\_\_ Date \_\_\_\_\_

Classroom teacher \_\_\_\_\_ File Color \_\_\_\_\_ # \_\_\_\_\_

## Directions

Find each of the words listed below and circle them in the word search. Then answer the questions by filling in the blanks to each question. A word may be used more than once.

## Terms to be found in the word search

ABC quick check

- air
- rear brake
- brain injury
- brakes
- bright clothing
- cassette
- chain
- chainring
- crank
- derailleur
- frame
- front brake
- gears
- handlebars
- hand signals
- headlight
- helmet
- helmet straps
- helmet vents
- quick release levers
- ride right
- rock n roll
- saddle
- shifters
- top tube
- two fingers
- visibility
- wheels

s f d y y f e v p h o n c x j e h m r t q w w m s h m s m k  
m s r i l u y n e e u o h w r d n i h m g m u r q e q b z i  
w p w i b v d l h m y e t n m b j g z n s e e l t l r t e v  
m z p d d k m h g l l g n i r n i a h c y v s e r m r m l k  
n s w v t e u r m m m o r x n l r v l c e p j c p e e r d i  
v c m k t h s n e t b e e t d i p p w l t g w n f t e o d h  
k l p w u z c t l i d s l a t q g h e k o m f t b s p b a f  
z h q p w f v q c a s s e t t e t s v x p s m n p t f m s f  
g z t t s e v v u e n h e r z d a v m r t r l k g r r d b p  
p p m k n h s k t q k u a q s e k a r b u e v d p a a y j q  
g q m t z o w l n z a a b b l n l g z a b g i e l p m i o i  
c c s g k q p q e e z y r e c t c a b a e n s t z s e h b u  
q j e r p b r u k e q w r b s q o m z c m i i z s c z c v u  
y l f j f u y a k s h k t x r l u c l p o f b r b p e k q y  
i k g s s f r f v k c w m u a a a i b b n o i v c g k t w y  
s g e z f b c u n i w q z z x v e n c v h w l p g z s h w q  
c f c r t r h a u r b x h a l y t r g k a t i c n e q g r p  
y a a n e n r q p q l m l a w u v p d i c z t g t y a i c m  
i n o a t c d e w z r h n d n d i l s r s h y t x o q r b s  
e r b m w w u x x b p t z j h d b e o p h d e b f t n e s u  
f f i d b y r u j n i n i a r b l c b z c s n c t n g d m c  
c t j o w l s q n c c h a i n u k e d y l q h a k r p i u r  
h r v y m c w i i x t y y a n z i b t g t b i h q l r x u  
e z z l t v d d l q f y j j r x e s h a l x s w f e p j e s  
z p l b l s z j i x l s a o i j w h c s r i s r p t a x q l  
m u m w p g r j w m i i l z w d k m d j c s r a m p e z d j  
p g s v w l h w z n r l v b r i g h t c l o t h i n g r e i  
u t s m w n k s o d e r a i l l e u r o g r k d j v n g s y  
n o e h o n h e k p j l l j v v g j n x t s l s w z a b a o  
l j n b i x j x o c k l m y g a i y f p q f t e n t q c m d

**Directions**

Answer the questions by filling in the blanks to each question. A word may be used more than once.

1. \_\_\_\_\_ is what a cyclist should do every day before riding.
2. A = \_\_\_\_\_, which is the first thing we check as part of the quick check.
3. \_\_\_\_\_ help riders stop slowly or quickly.
4. Keeping the \_\_\_\_\_ and \_\_\_\_\_ clean makes a bike ride go more smoothly.
5. The \_\_\_\_\_ should be used more often than the \_\_\_\_\_ when cycling, unless both are used in conjunction to stop, particularly in emergencies.
6. The \_\_\_\_\_ is used to change gears, when the \_\_\_\_\_ are clicked.
7. Circulation is improved if the \_\_\_\_\_ has \_\_\_\_\_.
8. Q = \_\_\_\_\_, which need to be checked prior to a ride.
9. The structure of the bike is also known as the \_\_\_\_\_.
10. A cue to remind cyclists how to ride in traffic is to \_\_\_\_\_.
11. C = \_\_\_\_\_ and \_\_\_\_\_ need to be checked prior to each ride.
12. To stop the front wheel from turning, engage the \_\_\_\_\_.
13. After stopping the bike, it is best to stand over the \_\_\_\_\_ prior to starting again.
14. Using the appropriate \_\_\_\_\_ at the most appropriate time is helpful when climbing hills.
15. Wearing a helmet helps protect us from a \_\_\_\_\_.

16. To increase their \_\_\_\_\_, cyclists need to wear brightly colored clothing and use headlights and even the back blinking light.
17. B = \_\_\_\_\_, which is the second thing we check on our bike prior to riding.
18. To alert others that you are about to make a turn, use the appropriate \_\_\_\_\_
19. It is important to always wear a \_\_\_\_\_ when cycling.
20. Both hands should remain on the \_\_\_\_\_ unless signaling.
21. The \_\_\_\_\_ are supposed to form a V around the ears.
22. Wearing \_\_\_\_\_ helps cyclists be more visible.
23. The \_\_\_\_\_ is also known as the front gears.
24. A helmet should not \_\_\_\_\_ on the head, but instead be tight and stable on the head.
25. \_\_\_\_\_ are used to change gears while riding.
26. A \_\_\_\_\_ is used when riding at dusk, dawn or in the dark.
27. The \_\_\_\_\_ rule applies to helmet fit;  
 \_\_\_\_\_ between eyebrows and helmet;  
 \_\_\_\_\_ making a V with the helmet strap;  
 \_\_\_\_\_ under the chin strap.
28. To increase safety, both \_\_\_\_\_ should be on the ground.
28. Another name for the bike seat is the \_\_\_\_\_.



# BICYCLE SAFETY WORD SEARCH

## ANSWER KEY

1. **ABC Quick Check** is what a bicyclist should do every day before riding.
2. A = **Air**, which is the first thing we check as part of the quick check.
3. **Brakes** help riders stop slowly or quickly.
4. Keeping the **chain** and **cassette** clean makes a bike ride go more smoothly.
5. The **rear brake** should be used more often than the **front brake** when cycling, unless both are used in conjunction to stop, particularly in emergencies.
6. The **derailleur** is used to change gears, when the **shifters** are clicked.
7. Circulation is improved if the **helmet** has **helmet vents**.
8. Q = **Quick release levers** which need to be checked prior to a ride.
9. The structure of the bike is also known as the **frame**.
10. A cue to remind cyclists how to ride in traffic is to **ride right**.
11. C = **chain** and **crank** need to be checked prior to each ride.
12. To stop the front wheel from turning, engage the **front brake**.
13. After stopping the bike, it is best to stand over the **top tube** prior to starting again.
14. Using the appropriate **gears** at the most appropriate time is helpful when climbing hills.
15. Wearing a helmet helps protect us from a **brain injury**.
16. To increase their **visibility**, cyclists need to wear brightly colored clothing and use headlights and even the back blinking light.
17. B = **Brakes**, which is the second thing we check on our bike prior to riding.
18. To alert others that you are about to make a turn, use the appropriate **hand signals**.
19. It is important to always wear a **helmet** when cycling.
20. Both hands should remain on the **handlebars** unless signaling.
21. The **helmet straps** supposed to form a V around the ears.
22. Wearing **bright clothing** helps cyclists be more visible.
23. The **chain ring** is also known as the front gears.
24. A helmet should not **rock 'n roll** on the head, but instead be tight and stable on the head.
25. **Shifters** are used to change gears while riding.
25. A **headlight** is used when riding at dusk, dawn or in the dark.
26. The **two finger** rule applies to helmet fit; **two fingers** between eyebrows and helmet; **two fingers** making a V with the helmet strap; **two fingers** under the chin strap.
27. To increase safety, both **wheels** should be on the ground.
28. Another name for the bike seat is the **saddle**.

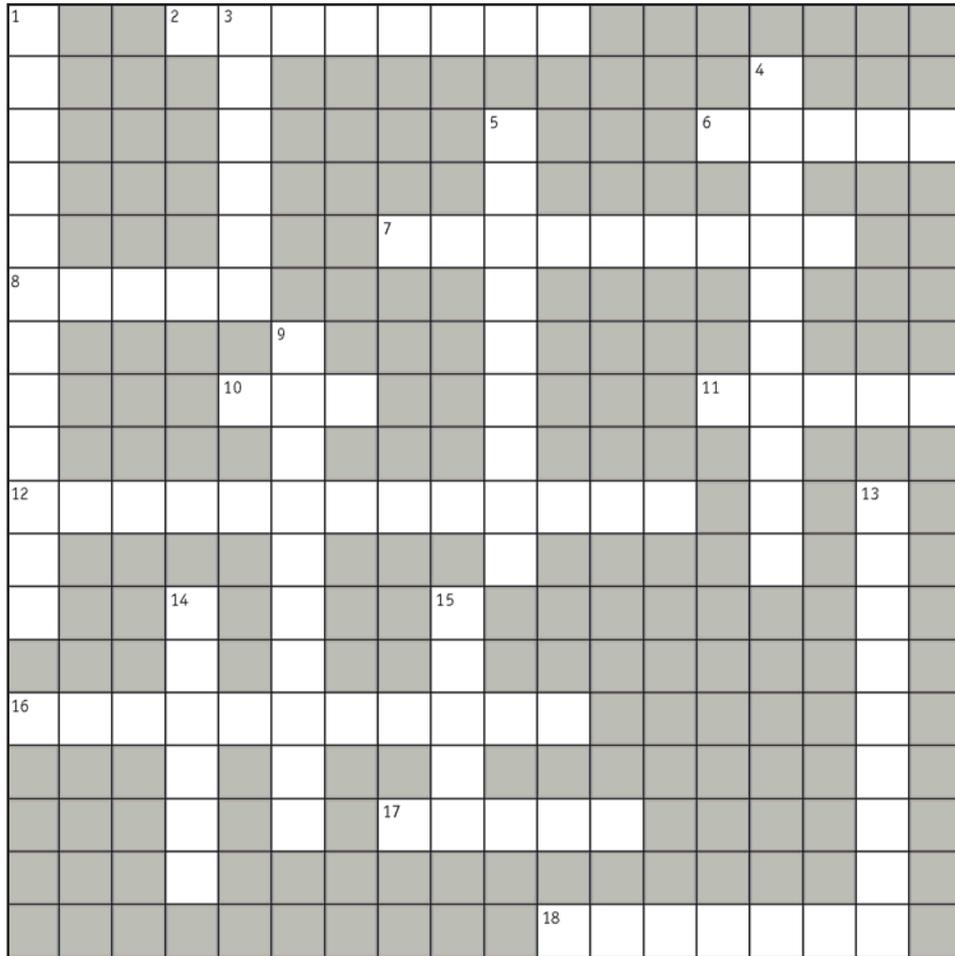


# BICYCLE SAFETY CROSSWORD PUZZLE

Student \_\_\_\_\_ Date \_\_\_\_\_

Classroom teacher \_\_\_\_\_ File Color \_\_\_\_\_ # \_\_\_\_\_

**Directions:** Please complete the crossword puzzle below.



## ACROSS

2. Use these to change gears while riding.
6. The C in the ABC Quick Check.
7. Another name for the front gears.
8. A cyclist should ride on what side of the road?
10. The A in the ABC Quick Check.
11. The B in the ABC Quick Check.
12. What a cyclist should do every time prior to riding.
16. What a cyclist should use to communicate to other cyclists and motorists.
17. Shifting through these can really help when climbing hills.
18. This rule applies to fitting a helmet correctly.

## DOWN

1. The Q in ABC Quick Check.
3. The best way to protect your brain is to wear one of these.
4. Use this to stop the front wheel.
5. A cyclist needs one of these when riding in the dark or at dusk/dawn.
9. Brightly colored clothing enhances a cyclist's \_\_\_\_\_.
13. This is used more often when trying to stop, except in emergencies.
14. Another name for the seat of the bike.
15. The structure of the bike is also known as the \_\_\_\_\_.

# BICYCLE SAFETY CROSSWORD PUZZLE

## ANSWER KEY

1	Q			2	S	3	H	I	F	T	E	R	S								
	U						E										4	C			
	I						L				5	H				6	C	H	A	I	N
	C						M					E					I				
	K						E			7	C	H	A	I	N	R	I	N	G		
8	R	I	G	H	T							D						S			
	E						9	V				L						T			
	L					10	A	I	R			I				11	B	R	A	K	E
	E						S					G					A				
12	A	B	C	Q	U	I	C	K	C	H	E	C	K			P			13	L	
	S						B				T					S				E	
	E			14	S		I			15	F										F
				A			L			R											T
16	H	A	N	D	S	I	G	N	A	L	S										B
				D		T				M											R
				L		Y		17	G	E	A	R	S								A
				E																	K
														18	2	2	2	R	U	L	E



# CLOSURE ACTIVITY

## Journal Writing

### Timeframe

**Beginner:** 10-15 minutes  
**Intermediate:** 10 minutes  
**Advanced:** 10 minutes

### Objectives

At the conclusion of this activity, the student will be able to:

1. Describe key concepts from Unit 1, bicycle fit, helmet fit and ABC Quick Check, as measured by providing responses to questions in journals. (Cognitive)
2. Describe how they feel about their ability to ride safely and their level of enjoyment of bicycling, as measured by providing responses to questions in journals. (Affective)

**National Standards** Standard 2  
Standard 5

**Equipment** • Journals or portfolios for each student.

**Teacher Overview** This activity prompts students to think about what they have learned during the first unit by asking questions about correct bicycling behaviors and providing written responses in journals.

**Preparation** Determine method for distributing, collecting and storing journals or portfolios before beginning this activity.

### Directions

1. Introduce this activity using the following prompt:

*We have now completed Unit 1 – “Getting Ready to Ride.” All of the skills learned in this unit will help you be safe when you are out riding. Helmet fit, bike fit and ABC Quick Check should be completed every time you get on a bike, whether at school or home.*

2. Provide portfolios or journals for students to write in.
3. Choose a location where students can sit comfortably and complete assessment, if completing journal writing activity in class.
- 4 Use the following sample questions to prompt students' thinking about the content presented in this unit.

**Q: Why should you wear a helmet every time you ride your bicycle?**

**A:** To protect your brain from injury

**Q: What are the three most important things to do when fitting your helmet?**

**A:** Make sure: (1) the helmet is level on the head (not too far off the forehead or too low on the forehead; (2) the straps are snug (enough so the helmet doesn't rock back and forth); and (3) the chin strap is buckled.

**Q: Why is it important to have a bicycle that fits properly?**

**A:** Any of the following:

- Maintaining control of the bicyclist is one key skill in preventing a bicycle crash.
- A bicycle that is too big increases the likelihood of loss of control of the bicycle and thus increased risk of a crash.
- A properly fitted bicycle will result in a safer more comfortable ride.

**Q: How can you test to see how well a bike fits you?**

**A:** Complete the bicycle fit steps

**Q: What does ABC Quick Check stand for?**

**A:** Air, Brakes, Chain/Crank, Quick Releases and a check of everything out with a slow, short ride for safety and comfort.

**Q: Why is it important to do pre-ride safety checks?**

**A:** Any of the following:

- To make sure everything is working properly on the bicycle.
- There may be a problem that you otherwise would not know about.

**Q: What was the most important new thing you learned in this unit?**

**A:** All responses are acceptable

**Assessment**

1. Be thoughtful about assessing journal writing, particularly when asking open ended "opinion-type" questions. Not all students may enjoy cycling and should be allowed to voice their opinions. To encourage honest answers, refrain from grading thoughts and opinions. However, this should not be an excuse for not learning the material.
2. Consider assessing writing skills and integrate literacy (spelling, use of correct grammar and complete sentences, etc.) in journal writing. Some teachers may want to specify length of answers for specific questions.

**Safety**

None

**Differentiating Instruction**

**All levels**

- Choose questions that are appropriate for the age and ability level of students.
- Some students may need to share their answers verbally with a teacher if they have difficulty writing.
- Some students may need the teacher or an aide to read the questions.

**Best Practices**

1. Complete this activity in classroom settings, health classes science classes if cross-curricular units are planned or to maximize riding time in physical education class.
2. Assign the journal writing for Unit 1 as homework to maximize riding time in physical education class.



# UNIT 2

## Bicycle Handling Basics

### OBJECTIVES

At the conclusion of this unit the student will be able to:

1. Describe bicycle handling basics as measured by completion of the *Bicycle Handling Basics worksheet* (Cognitive)
2. Demonstrate exceptional or reliable bicycle helmet fit as measured by the helmet fit rubric. (Psychomotor)
3. Demonstrate exceptional or reliable performance of the ABC Quick Check, as measured by the ABC Quick Check rubric. (Psychomotor)
4. Demonstrate exceptional or reliable performance of the balance skill as measured by the balance rubric. (Psychomotor)
5. Demonstrate exceptional or reliable performance of controlled braking as measured by the controlled braking rubric. (Psychomotor)
6. Demonstrate exceptional or reliable performance of straight line riding as measured by the straight-line rubric. (Psychomotor)
7. Demonstrate exceptional or reliable performance of the Power Start skill as measured by the Power Start rubric. (Psychomotor)
8. Demonstrate exceptional or reliable performance of the Ready Position skill as measured by the Ready Position rubric. (Psychomotor)
9. Demonstrate exceptional or reliable performance of scanning as measured by the scanning rubric. (Psychomotor)
10. Demonstrate exceptional or reliable performance of signaling as measured by the signaling rubric. (Psychomotor)
11. Demonstrate exceptional or reliable social behavior as measured by the social behavior rubric. (Affective)
12. Describe key concepts from Unit 2, Power Start, Ready Position, Scanning and Signaling, as measured by completion of the *Bicycle Handling Skills worksheet*. (Cognitive)

13. List and describe three key concepts from Unit 2 that illustrate a clear understanding of the need to have safe bicycle handling skills as measured by providing responses to questions in journals. (Cognitive)
14. Describe feelings about the ability to ride safely and their level of enjoyment of bicycling, as measured by providing responses to questions in journals. (Affective)

## NATIONAL STANDARDS FOR K-12 PHYSICAL EDUCATION

### Standard 1

The physically literate individual demonstrates competency in a variety of motor skills and movement patterns.

### Standard 2

The physically literate individual applies knowledge of concepts, principles, strategies and tactics related to movement and performance.

### Standard 3

The physically literate individual demonstrates the knowledge and skills to achieve and maintain a health-enhancing level of physical activity and fitness.

### Standard 4

The physically literate individual exhibits responsible personal and social behavior that respects self and others.

### Standard 5

The physically literate individual recognizes the value of physical activity for health, enjoyment, challenge, self-expression and/or social interaction.

## KEY VOCABULARY/TERMS

**Bicycle Driver:** In all states, bicycles are considered vehicles or bicyclists are the driver of a vehicle. Bicyclists 'drive-- their vehicles much like drivers of motorized vehicles. Both bicyclists and motorists have the same rights and the same responsibilities to follow the same rules-of-the-road when in traffic. To emphasize this concept, some teachers of bicycle safety will refer to this as "acting like a bicycle driver" or "driving your bicycle."

**Braking:** The act of stopping the bicycle using one of a variety of methods. Some bicycles use hand brake levers. The right brake lever stops the rear wheel; the left brake lever stops the front wheel. Some bicycles have coaster brakes where the bicyclist pedals backward to engage the brakes on the rear wheel.

**Power Start/Power Takeoff:** A fast and efficient way to get bicycle moving from a stopped position. The rider straddles the bicycle and places one foot on the ground, the other foot on the pedal between the 12 and 2 o'clock position. The rider should be standing, not sitting on the saddle. The rider pushes down on the pedal moving it to the 6 o'clock position and pushes off the ground with the other foot at the same time. The rider should be standing above the saddle, coast and count to three before placing the other foot onto the other pedal and sitting on the saddle.

**Ready Position:** A particular way to position the body on a bicycle enabling the rider to have control over the bicycle and to be prepared for most maneuvers. The rider is standing over the saddle with most of his/her weight over the rear tire; pedals are parallel to the ground; and the index and middle fingers are lightly resting on the brake lever.

**Scanning:** The act of looking over one's shoulder to observe if it is clear to change direction or to be aware of one's surroundings.

**Signaling:** A form of communication using the bicyclist's hands to indicate changes in direction and speed.

**Track Stand:** A rider attempts to balance on the bicycle with both feet on the pedals in a stationary position. The goal is to keep the wheels from moving forward or backward.

## ACTIVITIES

Each unit should include three types of activities: introduction, skill-based with assessments and closure. In some cases, more than one activity option is offered for the introduction and closure; choose the appropriate activities that fit into your allotted class time when developing your lesson plans. If class time is too short to allow for all three types of activities, focus your lesson on the skill-based activities.

**Introduction:** The following activity can be used to introduce this unit of learning.

- Walk & Share

**Skill-Based with Assessments:** Each skill-based activity is associated with an assessment to measure student knowledge and application of the identified skill. Depending on the amount of class time available and the skill level of students, more than one of the following skill-based activities may be completed during one class. All of the skill-based activities are considered essential in creating the foundation for safe bicycling. Regardless of skill level and/or if students have learned this material in previous years, all skill-based activities in this unit should be completed before moving to the next unit. This will ensure that students have the safety knowledge and basic skills necessary to practice safe bicycling behaviors.

- Helmet Fit and ABC Quick Check
- Balance
- Controlled Braking
- Straight-Line Riding
- Power Start
- Ready Position
- Scanning
- Signaling

**Closure:** The following activities can be used to conclude this unit of learning. If desired, these activities can be assigned as homework. Choose the activity which best fits the needs of your students and class.

- Walk & Share
- Journal writing

### EQUIPMENT NEEDED

- Helmets
- Head barriers
- Bicycles
- Bicycle pump
- Allen wrench
- Red floor tape
- Cones, domes, polypots or chalk to mark riding course
- Pencils
- *Bicycle Handling Basics* worksheet
- *Bicycle Handling Skills* worksheet
- Helmet Fit handout (optional) [http://www.nhtsa.gov/staticfiles/nti/bicycles/pdf/8010-wear\\_a\\_helmet.pdf](http://www.nhtsa.gov/staticfiles/nti/bicycles/pdf/8010-wear_a_helmet.pdf)
- ABC Quick Check handout (optional) <http://www.nhtsa.gov/DOT/NHTSA/NTI/SRTS/7505-06-ABCQuickCheck.pdf>
- Student Journals
- Jump ropes (optional)

### CROSS-CURRICULAR ACTIVITIES

#### **Language Arts**

- Journal writing



# INTRODUCTION ACTIVITY

## Walk & Share / Bicycle Handling Basics

<b>Timeframe</b>	<b>Beginner:</b> 5-7 minutes <b>Intermediate:</b> 5-7 minutes <b>Advanced:</b> 5-7 minutes
<b>Objective</b>	At the conclusion of the activity the student will be able to: <ol style="list-style-type: none"><li>1. Describe bicycle handling basics as measured by completion of the <i>Bicycle Handling Basics</i> worksheet (Cognitive)</li></ol>
<b>National Standards</b>	Standard 2 Standard 4
<b>Equipment</b>	<ul style="list-style-type: none"><li>• <i>Bicycle Handling Basics</i> worksheet</li><li>• Pencils</li></ul>
<b>Teacher Overview</b>	This activity prompts students to think about basic bicycle riding skills. Questions for student pairs will initiate peer discussion as they walk and keep moving.
<b>Preparation</b>	Make appropriate number of copies of <i>Bicycle Handling Basics</i> worksheet.
<b>Directions</b>	<ol style="list-style-type: none"><li>1. Introduce this activity using the following prompt: <i>Today, we will be learning about some basic bicycle riding skills. These skills are the foundation for being a safe bicycle driver.</i></li><li>2. Divide students into groups of two or three.</li><li>3. Ask students to walk the perimeter of the gym while answering the <i>Bicycle Handling Basics</i> worksheet questions. Students may stop to write a quick answer, but should continue moving as much as possible.</li><li>4. Instruct students to stop when the whistle blows and be prepared to share something they discussed with their partner(s).</li></ol>
<b>Assessment</b>	Successful completion of the <i>Bicycle Handling Basics</i> worksheet.
<b>Safety</b>	<ol style="list-style-type: none"><li>1. Do not let students run or walk too quickly if carrying pencils.</li></ol>
<b>Differentiating Instruction</b>	<b>Intermediate and Advanced</b> <ul style="list-style-type: none"><li>• Set up lanes that students need to travel in.</li><li>• Include stop signs and intersections.</li></ul>
<b>Best Practices</b>	<ol style="list-style-type: none"><li>1. Complete this activity when weather prevents riding.</li></ol>



# BICYCLE HANDLING BASICS WORKSHEET



Student \_\_\_\_\_ Date \_\_\_\_\_

**Directions:** Please answer the questions below.

1. What are some basic skills needed to ride a bicycle?
2. How do the brakes work on your bicycle?
3. Which brake controls the front wheel and which controls the rear wheel?
4. What should be completed before riding your bike every time?
5. What does ABC Quick Check stand for?
6. How do you know your helmet fits properly?
7. How do you know your bicycle fits properly?

# BICYCLE HANDLING BASICS

## WORKSHEET

### ANSWER KEY



1. What are some basic skills needed to ride a bicycle?

**Responses include:**

**Balance**

**Braking**

**Riding in a straight line**

**Other answers may be accepted.**

2. How do the brakes work on your bicycle?

**Brakes stop the wheels from turning which will stop the bicycle**

3. Which brake controls the front wheel and which controls the rear wheel?

**The left brake controls the front wheel and the right brake controls the rear wheel.**

4. What should be completed before riding your bike every time?

**ABC Quick Check**

5. What does ABC Quick Check stand for?

**Responses should include all of the following:**

**A = Air**

**B = Brakes**

**C = Crank and chain**

**Quick = Quick releases on wheels and seat post**

**Check = go for a short, slow ride to check for safety and comfort (e.g., brake functioning, rubbing of tires)**

6. How do you know your helmet fits properly?

**At a minimum, the student should respond with the rule**

**Follow the 2, 2, 2 rule**

**Helmet sits flat/level on head; 2 fingers between eyebrows and helmet.**

**Straps form a V (2 straps) on either side of ears**

**No more than 2 fingers between strap and chin**

**Snug fit; no movement when shaking head around (no rocking and rolling)**

7. How do you know your bicycle fits properly?

**Both responses are necessary:**

**The rider should be able to squat about three inches for mountain bicycles from a standing position with feet flat on the ground to sitting on the top tube.**

**When the rider's foot is at down stroke or 6 o'clock position, the leg should be almost fully extended with only a slight bend at the knee.**



# SKILL-BASED ACTIVITY

## Helmet Fit & ABC Quick Check

### Timeframe

**Beginner:** 10-12 minutes  
**Intermediate:** 10 minutes  
**Advanced:** 8-10 minutes

### Objectives

At the conclusion of this activity the student will be able to:

1. Demonstrate exceptional or reliable bicycle helmet fit as measured by the helmet fit rubric. (Psychomotor)
2. Demonstrate exceptional or reliable performance of the ABC Quick Check, as measured by the ABC Quick Check rubric. (Psychomotor)
3. Demonstrate exceptional or reliable social behavior as measured by the social behavior rubric. (Affective)

### National Standards

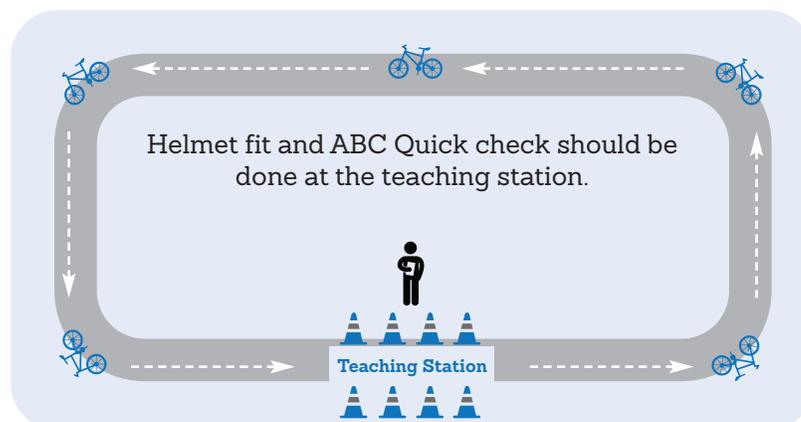
Standard 1  
Standard 2  
Standard 3  
Standard 4

### Equipment

- Bicycles
- Helmets
- Head barriers
- Cones, domes, polypots or chalk to mark riding course
- Helmet Fit handout (optional)  
[www.nhtsa.gov/staticfiles/nti/bicycles/pdf/8010-wear\\_a\\_helmet.pdf](http://www.nhtsa.gov/staticfiles/nti/bicycles/pdf/8010-wear_a_helmet.pdf)
- ABC Quick Check handout (optional)  
[www.nhtsa.gov/DOT/NHTSA/NTI/SRTS/7505-06-ABCQuickCheck.pdf](http://www.nhtsa.gov/DOT/NHTSA/NTI/SRTS/7505-06-ABCQuickCheck.pdf)

### Teacher Overview

Complete this activity each time students will be riding a bicycle. This will ensure that each student has a properly fitted bicycle helmet and a properly functioning bicycle. Eventually, this activity can be completed and checked by peer assessment to reduce the amount of class time required.



## Preparation

1. Designate a riding course that enables the teacher to see the students at all times. This will enable students to ride throughout the class period, even when they are not performing skills.
2. Set up a “chute” using cones, to indicate where the student will perform the skill and the teacher will conduct the assessment. This area should also serve as a teaching station in which the skill will be demonstrated for the students, and where students will return when instructed.
3. If bicycles have both front and rear brakes: Wrap the left handle of the bicycle with red floor tape to discourage students from using the front brake, until proper braking skill is taught.

## Directions

1. Introduce this activity using the following prompt:

*Today, we will be practicing the two activities that you should always do before riding a bicycle—fitting your bicycle helmet and making sure your bicycle is in good working order. We have already learned how important it is to protect your brain from injury by wearing a bicycle helmet; how to properly fit a bicycle helmet and how to make sure your bicycle is in good working order using the ABC Quick Check. These are two things that we will do at the beginning of every class if we are going to be riding.*

2. Use the following sample questions to prompt students' thinking about the content in this activity.

**Q: You are asked to fit a helmet for your friend. What guideline do you follow as you help your friend?**

**A:** 2, 2, 2 = helmet level & 2 fingers between eyebrows and helmet; 2 straps make a V around ears; no more than 2 fingers between strap and chin.

**Q: You need to explain to your family or friends why they need to wear a helmet. What do you tell them?**

**A:** Any of the following are acceptable:

- Protect your brain from injury
- Other answers may be accepted.

**Q: What are some of the biggest errors people make in terms of helmet use?**

**A:** Any of the following:

- Not wearing a helmet.
- Wearing a helmet that is not fitted properly.
- Wearing a helmet that is not buckled, or not buckled tightly enough to provide protection.
- Other answers may be accepted.



The Helmet Fit and ABC Quick Check should be performed before every ride or, in this case, at the beginning of every lesson.



**Q: You notice your friend or family member starting to ride their bicycle without doing a safety check. Can someone explain the safety check for a bicycle?**

**A:** A = Air; B = Brakes; C = Chain and cranks; Quick = Quick releases; Check = Go for a short, slow ride.

**Q: Why should it be performed before every ride?**

**A:** So you know you're riding a bicycle that is safe. Some bicycle crashes are due to failure of the bicycle itself.

3. Divide students into groups of two or three.



4. Instruct students to fit helmets and have partner(s) check if the helmet is fitted correctly.

5. Instruct students to retrieve bicycles according to number assigned.



6. Instruct one student to complete the ABC Quick Check while the partner observes to ensure that the check was completed properly, and to provide prompts if an item was missed. Switch roles.

7. Instruct pairs to proceed to riding area to meet teacher after students have successfully completed the helmet fit and ABC Quick Check.

**Assessment** 1. Assess helmet fit of each student using the following rubric.

PERFORMANCE RUBRIC: HELMET FIT 

Exceptional	Reliable	Inconsistent	Struggling/ Survival
<p>Student is able to fit helmet correctly on his own, demonstrating the following characteristics of helmet fit (all must be correct):</p> <p>Is snug on head (no rock-n-roll side to side);</p> <p>Sits level on head;</p> <p>Straps form a V under ears;</p> <p>Strap is no more than 2 finger widths from chin;</p> <p>Does not rock-n-roll on head (forward or backward).</p>	<p>Student can fit helmet correctly, possibly with a little help from a teacher/aide, demonstrating the following characteristics of helmet fit (all must be correct):</p> <p>Is snug on head (no rock-n-roll side to side);</p> <p>Sits level on head;</p> <p>Straps form a V under ears;</p> <p>Strap is no more than 2 finger widths from chin;</p> <p>Does not rock-n-roll on head (forward or backward).</p>	<p>Student has difficulty fitting helmet correctly, requiring help from teacher/aide, and more than one of the following are not completed correctly:</p> <p>Is snug on head (no rock-n-roll side to side);</p> <p>Sits level on head;</p> <p>Straps form a V under ears;</p> <p>Strap is no more than 2 finger widths from chin;</p> <p>Does not rock-n-roll on head (forward or backward).</p>	<p>Student has difficulty fitting helmet correctly, needing a significant amount of help in the process.</p> <p>The student cannot fit a helmet on his/her own.</p>

2. Assess performance of the ABC Quick Check of each student using the following rubric.

PERFORMANCE RUBRIC: ABC QUICK CHECK 

Exceptional	Reliable	Inconsistent	Struggling/ Survival
<p>Student is able to conduct the ABC Quick Check correctly on his own, demonstrating the following characteristics (all must be correct):</p> <p>Checks both tires for air;</p> <p>Checks both front and rear brakes (knuckle to knuckle) by spinning each tire and squeezing each brake;</p> <p>Checks the front chainring (gears) by grabbing the crank set and jiggling it;</p> <p>Checks the chain by turning the pedals with the rear wheel off the ground;</p> <p>Checks all quick releases (seat post, front, and rear wheel) for security;</p> <p>Takes a short ride for overall check.</p>	<p>Student is able to conduct the ABC Quick Check correctly, possibly with help from a peer (peer assessment process may serve to guide specific details of process), demonstrating the following characteristics (all must be correct):</p> <p>Checks both tires for air;</p> <p>Checks both front and rear brakes (knuckle to knuckle) by spinning each tire and squeezing each brake;</p> <p>Checks the front chainring (gears) by grabbing the crank set and jiggling it;</p> <p>Checks the chain by turning the pedals with the rear wheel off the ground;</p> <p>Checks all quick releases (seat post, front, and rear wheel) for security;</p> <p>Takes a short ride for overall check.</p>	<p>Student has difficulty conducting the ABC Quick Check correctly, requiring help from a teacher or aide, and more several of the following are not completed correctly:</p> <p>Checks both tires for air;</p> <p>Checks both front and rear brakes (knuckle to knuckle) by spinning each tire and squeezing each brake;</p> <p>Checks the front chainring (gears) by grabbing the crank set and jiggling it;</p> <p>Checks the chain by turning the pedals with the rear wheel off the ground;</p> <p>Checks all quick releases (seat post, front, and rear wheel) for security;</p> <p>Takes a short ride for overall check.</p>	<p>Student has difficulty conducting the ABC Quick Check correctly, needing a significant amount of help in the process. The student fails to understand the process of the ABC Quick Check.</p>

3. Assess the performance of social behavior for each student using the following rubric.

PERFORMANCE RUBRIC: SOCIAL BEHAVIOR 

Exceptional	Reliable	Inconsistent	Struggling/ Survival
<p>Student is respectful toward classmates, teacher, &amp; equipment;</p> <p>Student receives and uses feedback from teacher and peers in a courteous manner;</p> <p>Student participates fully, without teacher prompting or supervision;</p> <p>Student is able to work cooperatively and productively with classmates, including during peer assessments;</p> <p>Student perseveres, even through difficult skills/activities, and maintains a positive attitude;</p> <p>Student is committed to learning;</p> <p>Student is committed to engaging in cycling in a safe manner, and keeping all classmates safe during the cycling unit.</p>	<p>Student is respectful toward classmates, teacher, &amp; equipment;</p> <p>Student receives and uses feedback from teacher and peers in a courteous manner;</p> <p>Student participates fully, but needs some teacher prompting and/or supervision;</p> <p>Participates in most class activities at an appropriate and productive level;</p> <p>Student is most often able to work cooperatively and productively with classmates, including during peer assessments;</p> <p>Student is able to work hard and not get frustrated with setbacks;</p> <p>Student is committed to learning;</p> <p>Student is committed to engaging in cycling in a safe manner, and keeping all classmates safe during the cycling unit.</p>	<p>Student may not always be respectful toward classmates, teacher, &amp; equipment;</p> <p>Student may listen to feedback from teacher or peers, but may not attempt and/or have difficulty applying it;</p> <p>Student requires some teacher supervision, but does exhibit some self-control at times;</p> <p>Student demonstrates the ability to work cooperatively and productively with classmates, but may need teacher direction or supervision;</p> <p>Student participates in most class activities;</p> <p>Student is willing to try, but may get frustrated with setbacks, and pout and/or verbalize frustration;</p> <p>Student may fluctuate between riding safely and unsafely at times.</p>	<p>Student may struggle with being respectful toward classmates, teacher, &amp; equipment and/or show anger and/or blame others for cycling mishaps;</p> <p>Student does not listen to feedback from teacher or peers, and does not attempt to apply it;</p> <p>Student requires ongoing supervision and does not ride safely;</p> <p>Student may be unprepared and show very little interest in learning or the activity;</p> <p>Student becomes frustrated easily and may quit participating.</p>

## Safety

1. Remind students they should only use the rear brake to stop the bicycle, until their skill level advances to be able to safely use the front brake.
2. Students should only be visually inspecting the quick releases. Advanced students would only practice properly opening/closing and tightening/loosening the wheel quick release after proper instruction and constant supervision by the teacher.

## Differentiating Instruction

### Adapted

- Depending on the student's skill level, a teacher or aide may have to complete this activity for the student.
- At no time should a student be allowed to ride without a helmet. This may mean additional time should be allotted to fit students who may have additional challenges.

### Beginner

- Students should only use the rear brake to stop the bicycle.
- Instruct students not to use the brake lever on the red side of the handlebar.
- This should be done until their skill level advances to be able to safely use the front brake. Student should only visually inspect the quick releases.
- Perform this activity as a group.

### Intermediate and Advanced

- Students should be able to complete this activity independently.
- Intermediate and Advanced students can be paired with less skilled students to assist them in completing this activity.

## Best Practices

1. The teacher should perform a quick visual inspection of proper helmet fit at the beginning of every class when on-the-bike activities are involved.
2. Use peers/partners to practice, inspect and correct helmet fit for each other. In addition to this being a way to reinforce proper fit, it will also make the most efficient use of class time. This should not replace teacher assessment.
3. Use head barriers if students are sharing helmets, because it is important for the prevention of head lice.
4. Ensure safety precautions if you or students opt to use their own helmets:
  - Check for the presence of CPSC label
  - Visually assess for the presence of obvious damage to the helmet
  - Request students to verify that helmets have not been associated with a previous crash. Teachers should have extra helmets for those students who are unsure or for any student the teacher opts to provide a helmet for class use.
5. Provide a discreet opportunity and safe environment for students to share information pertaining to their ability and comfort level for riding a bicycle.
6. Complete the ABC Quick Check at the beginning of every lesson.
7. Check the bicycle for proper fit every class. It is essential for students to check their bikes every day, particularly if bikes are shared with other students/classes.





# SKILL-BASED ACTIVITY

## Balance

### Timeframe

**Beginners:** 10-12 minutes  
**Intermediate:** 8-10 minutes  
**Advanced:** 5 minutes

### Objectives

At the conclusion of this activity, the student will be able to:

1. Demonstrate exceptional or reliable performance of the balance skill as measured by the balance rubric. (Psychomotor)
2. Demonstrate exceptional or reliable social behavior as measured by the social behavior rubric. (Affective)

**National Standards** Standard 1  
Standard 2  
Standard 3  
Standard 4

### Equipment

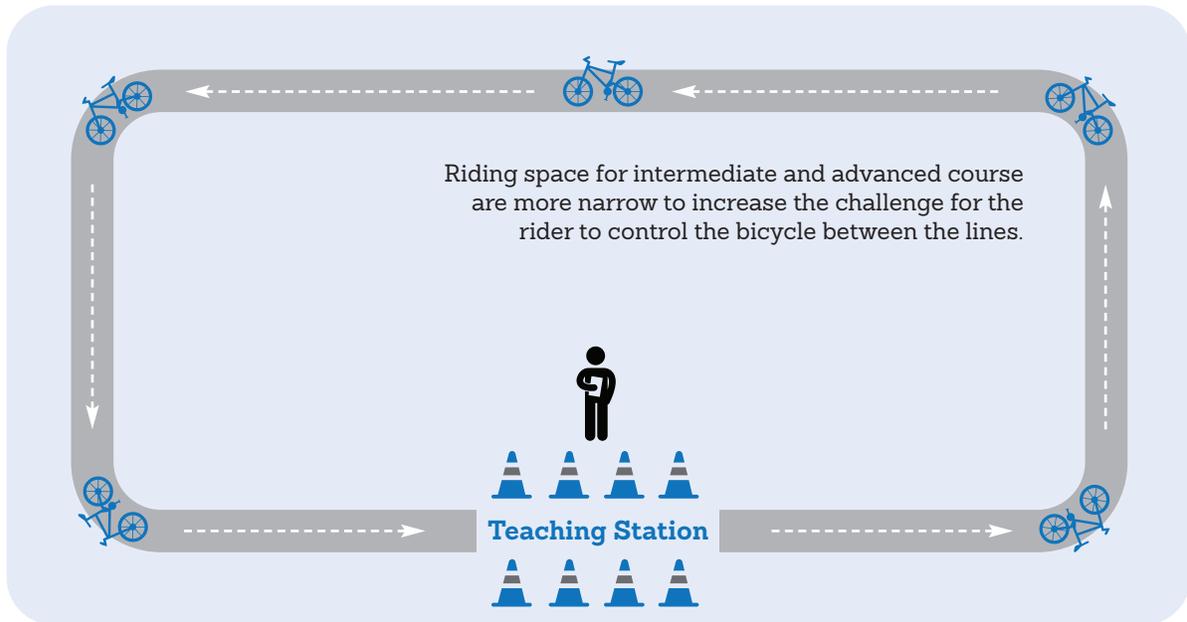
- Bicycles
- Helmets
- Head barriers
- Allen wrench
- Cones, domes, polypots or chalk to mark riding course
- Red floor tape

**Teacher Overview** This activity teaches and/or strengthens the key skill of balance. Students will be riding the bicycle with and without pedaling. Students with more advanced riding skills can be challenged by focusing on balance while riding very slowly.

### Preparation

1. Designate a riding course that enables the teacher to see the students at all times. This will enable students to ride throughout the class period, even when they are not performing skills.
2. Set up a “chute” using cones, to indicate where the student will perform the skill and the teacher will conduct the assessment. This area should also serve as a teaching station in which the skill will be demonstrated for the students, and where students will return when instructed.
3. If bicycles have both front and rear brakes: Wrap the left handle of the bicycle with red floor tape to discourage students from using the front brake, until proper braking skill is taught.
4. Practice the balance skill before demonstrating to students.

## Diagram: Balance Course



### Directions

1. Introduce this activity using the following prompt:

*Having good balance is a crucial component of controlling a bicycle. Today, we are going to practice balancing on a bicycle.*

2. Use the following sample questions to prompt students' thinking about the content in this activity.

**Q: What is the most important skill to know to ride a bicycle and why?**

**A:** Any of the following:

- Balance is the most important skill to know because without balance we cannot ride a bicycle.
- Balancing on a bike is the first step to riding.
- Other responses may be accepted

**Q: What muscles are used to help us maintain balance?**

**A:** Any of the following:

- Core muscles:
  - Abdominals
  - Back muscles
  - Gluteal muscles

**Q: Is there any other part of the body that helps us with balance?**

**A:** Your inner ear.



The pedals can be removed, but most students can perform this exercise without any problems with the pedals attached.

3. Explain and demonstrate the balance skill without pedaling (coasting) to students in the teaching station, reinforcing the following points. Riders should:
  - Lower the bicycle seat so seated with both feet flat on the ground.
  - Use both feet to push forward, lift feet about an inch off the ground and coast.
  - Practice coasting to get a feel for balancing on the bicycle. Because the bicycle will coast slowly, riders can put their feet down if the bicycle begins to wobble too much.
  - Keep knees and feet close to the bicycle; this will enable better balance and allow for greater control to ride in a straight line.
  - Push and coast around the designated course, trying to increase the amount of time balancing between pushes.
  - Squeeze the saddle with both thighs to help with balance.
4. Instruct students to ride the designated course again and when riding through the chute, each rider should remain seated, pedal and try to remain within the boundaries of the chute without hitting the (cone, polyspot, etc.).

**Assessment**

1. Assess performance of the balance skill of each student using the following rubric.

**PERFORMANCE RUBRIC: BALANCE SKILL** 

Exceptional	Reliable	Inconsistent	Struggling/ Survival
<p>Student has excellent balance when pedaling and coasting, even when riding very slowly;</p> <p>Student can maintain balance riding in tight turns at a slower speed;</p> <p>Student may be able to attempt a track stand for up to a few seconds.</p>	<p>Student is able to balance in nearly all situations when pedaling and coasting;</p> <p>Student is able to balance at slower speeds, but may have difficulty maintaining balance during tight turns at slow speeds.</p>	<p>Student can pedal and maintain balance, but may at times be wobbly or weave some, as he loses and regains balance without putting down a foot;</p> <p>Student may not be able to ride slowly and maintain balance.</p>	<p>Student is unable to balance on 2 wheels for any length of time when pedaling;</p> <p>Student can balance when pushing on the ground with feet and/or may still be using training wheels.</p>

2. Assess the performance of social behavior for each student using the following rubric.

PERFORMANCE RUBRIC: SOCIAL BEHAVIOR 

Exceptional	Reliable	Inconsistent	Struggling/ Survival
<p>Student is respectful toward classmates, teacher, and equipment;</p> <p>Student receives and uses feedback from teacher and peers in a courteous manner;</p> <p>Student participates fully, without teacher prompting or supervision;</p> <p>Student is able to work cooperatively and productively with classmates, including during peer assessments;</p> <p>Student perseveres, even through difficult skills/activities, and maintains a positive attitude;</p> <p>Student is committed to learning;</p> <p>Student is committed to engaging in cycling in a safe manner, and keeping all classmates safe during the cycling unit.</p>	<p>Student is respectful toward classmates, teacher, and equipment;</p> <p>Student receives and uses feedback from teacher and peers in a courteous manner;</p> <p>Student participates fully, but needs some teacher prompting and/or supervision;</p> <p>Participates in most class activities at an appropriate and productive level;</p> <p>Student is most often able to work cooperatively and productively with classmates, including during peer assessments;</p> <p>Student is able to work hard and not get frustrated with setbacks;</p> <p>Student is committed to learning;</p> <p>Student is committed to engaging in cycling in a safe manner, and keeping all classmates safe during the cycling unit.</p>	<p>Student may not always be respectful toward classmates, teacher, and equipment;</p> <p>Student may listen to feedback from teacher or peers, but may not attempt and/or have difficulty applying it;</p> <p>Student requires some teacher supervision, but does exhibit some self-control at times;</p> <p>Student demonstrates the ability to work cooperatively and productively with classmates, but may need teacher direction or supervision;</p> <p>Student participates in most class activities;</p> <p>Student is willing to try, but may get frustrated with setbacks, and pout and/or verbalize frustration;</p> <p>Student may fluctuate between riding safely and unsafely at times.</p>	<p>Student may struggle with being respectful toward classmates, teacher, &amp; equipment and/or show anger and/or blame others for cycling mishaps;</p> <p>Student does not listen to feedback from teacher or peers, and does not attempt to apply it;</p> <p>Student requires ongoing supervision and does not ride safely;</p> <p>Student may be unprepared and show very little interest in learning or the activity;</p> <p>Student becomes frustrated easily and may quit participating.</p>

## Safety



1. Follow the 2-2-2-2 Rule (2 wheels on the ground; 2 feet on the pedals; 2 hands on the handlebars; 2 fingers on the brake levers) while riding the bicycle.
2. Use the rear brake only to stop the bicycle, until the skill level advances to be able to safely use the front brake.
3. Instruct students to ride the bicycles on the designated course and demonstrate the skill components in the “chute.”
4. Instruct students to keep at least three-bikes-lengths between each rider.

## Differentiating Instruction

### Adapted and Beginner

- Remove the pedals from some of the bicycles to help students successfully complete this activity.
- Allow students to practice balancing while using a bicycle that is on a stationary bicycle trainer.

### Intermediate

- Instruct students that the slower a bicycle moves, the harder it is to maintain one’s balance.
- Have students take one pedal stroke to start riding.
- Students should see how long and slowly they can coast without pedaling or touching the ground.
- Students will have more success if they quickly, but subtly, move the handlebars back and forth as they are coasting.

### Advanced

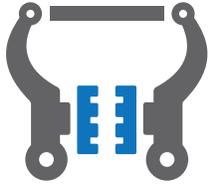
- Attempt a “track stand” to perfect balance. A track stand is when a rider attempts to balance on the bicycle with both feet on the pedals in a stationary position. The goal is to keep the wheels from moving forward or backward. The student may be in a sitting or standing position to perform this skill.

## Best Practices



1. Provide a discreet opportunity and safe environment for students to share information pertaining to their ability and comfort level for riding a bicycle.
2. Always complete the Helmet Fit and ABC Quick Check at the beginning of every class in which the students will be riding. The use of peers/partners to practice, inspect, and correct each other will make the most efficient use of class time and reinforce bicycle safety skills. This should not replace teacher assessment.
3. Review the three-bikes-length rule to promote safe riding. The three-bicycles-length rule is a reminder of keeping a safe distance between cyclists while riding single-file. To help maintain proper spacing, have a marker on the course that allows students to see when it is their turn to go: when the person in front of them gets to the marker, the next student may start riding.





# SKILL-BASED ACTIVITY

## Controlled Braking

### Timeframe

**Beginners:** 10-12 minutes  
**Intermediate:** 8-10 minutes  
**Advanced:** 3-4 minutes

### Objectives

At the conclusion of this activity the student will be able to:

1. Demonstrate exceptional or reliable performance of controlled braking as measured by the controlled braking rubric. (Psychomotor)
2. Demonstrate exceptional or reliable social behavior as measured by the social behavior rubric. (Affective)

**National Standards** Standard 1  
Standard 2  
Standard 3  
Standard 4

### Equipment

- Bicycles
- Helmets
- Head barriers
- Allen wrench
- Cones, domes, polypots or chalk to mark riding course
- Red floor tape

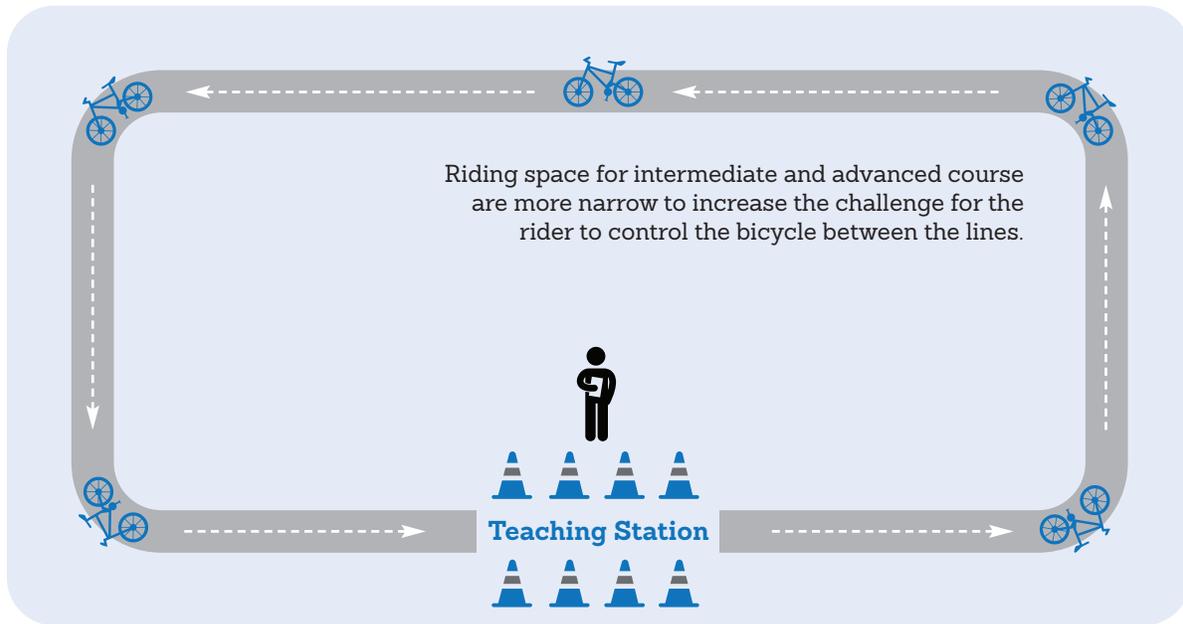
### Teacher Overview

This activity helps students understand the important difference in how the rear and front brakes each stop the bicycle. Students will first learn to use the rear brake to accomplish a controlled stop. The rear brake allows for a much more gradual braking result. Although not as efficient as using the front brake, it is a much safer manner in which to learn braking.

### Preparation

1. Designate a riding course that enables the teacher to see the students at all times. This will enable students to ride throughout the class period, even when they are not performing skills.
2. Set up a “chute” using cones, to indicate where the student will perform the skill and the teacher will conduct the assessment. This area should also serve as a teaching station in which the skill will be demonstrated for the students, and where students will return when instructed.
3. If bicycles have both front and rear brakes: Wrap the left handle of the bicycle with red floor tape to discourage students from using the front brake, until proper braking skill is taught.
4. Practice the controlled braking skill before demonstrating to students.

## Diagram: Controlled Braking Course



### Directions

1. Introduce this activity using the following prompt:  
*Almost as important as being able to balance, is being able to safely stop a bicycle. In this activity, you will learn the difference in how the rear and front brakes each stop the bicycle. You will also practice stopping the bicycle in a controlled manner using the rear brake.*
2. Use the following sample questions to prompt students thinking about the content in this activity.

**Q: What are some reasons for braking on a bicycle?**

**A:** Any of the following:

- You may need to slow or stop for various reasons
- Other answers may be accepted.

**Q: Which brake controls which tire?**

**A:** Left brake = front wheel; right brake = rear wheel.

**Q: Why should braking happen in a controlled manner?**

**A:** Any of the following:

- It is safer
- Uncontrolled braking can send a bicyclist over the handlebars or out of control.
- Explain and demonstrate the difference in how the front and rear brakes each stop the bicycle. Riders should:
  - Jog slowly forward next to the bicycle; apply just the rear brake and observe how the bicycle stops. Remember right is rear.
  - Jog slowly forward next to the bicycle; apply just the front brake and observe how the bicycle stops. Explain that this activity is focused on only using the rear brake. Using both the front and rear brakes will be taught in a future activity.

3. After this demonstration, use the following sample questions to further prompt students' thinking about the content in this activity.

**Q: What is the difference between using the front and rear brakes?**

**A:** Any of the following:

- The front brake stops the bicycle quicker
- The rear brake stops the bicycle slower
- A bicyclist has to be careful if just using the front brake
- Other responses may be accepted

**Q: When would be a more appropriate time to use the rear brake?**

**A:** On most occasions, the rear brake is used by itself. When you know you're going to stop you can slow down with the rear brake and then stop, not even needing to touch the front brake.

**Q: When would you use the front brake, in combination with the rear brake, be necessary?**

**A:** In an emergency situation when you need to stop suddenly, or coming down a steep hill.

4. Instruct students to begin riding on the designated course and remain in the **seated** position.

Upon entering the chute, remain in the **seated** position, apply the rear brake, come to a stop and place both feet on the ground.

5. Instruct students to begin riding on the designated course again and remain in the **seated** position.

Upon entering the chute, enter into the **standing** position, apply the rear brake, come to a stop and place both feet on the ground.

### Assessment

1. Assess controlled braking of each student using the following rubric.

## PERFORMANCE RUBRIC: CONTROLLED BRAKING

Exceptional	Reliable	Inconsistent	Struggling/ Survival
Student demonstrates the ability to control her braking, and come to a complete stop safely and effectively; Student is able to control which brake she uses; Student will use her rear brake to stop and does not use her front brake, except in emergency situations.	Student demonstrates the ability to control her braking, and come to a stop in the majority of cases; Student uses her rear brake to stop in most cases, but may want to rely on her front brake more than necessary.	Student sometimes uses her brake, but may use her feet on occasion to stop; Student is able to use her rear brake but, if available, will intermittently use her front brake; Student has some difficulty stopping safely and effectively.	Student is not able to use the hand brake correctly and/or safely, and may want to use her feet to stop, instead of her brake; Student does not understand how to use her brake to control stopping. Student is unable to stop safely and effectively.

2. Assess the performance of social behavior for each student using the following rubric.

PERFORMANCE RUBRIC: SOCIAL BEHAVIOR 

Exceptional	Reliable	Inconsistent	Struggling/ Survival
<p>Student is respectful toward classmates, teacher, and equipment;</p> <p>Student receives and uses feedback from teacher and peers in a courteous manner;</p> <p>Student participates fully, without teacher prompting or supervision;</p> <p>Student is able to work cooperatively and productively with classmates, including during peer assessments;</p> <p>Student perseveres, even through difficult skills/activities, and maintains a positive attitude;</p> <p>Student is committed to learning;</p> <p>Student is committed to engaging in cycling in a safe manner, and keeping all classmates safe during the cycling unit.</p>	<p>Student is respectful toward classmates, teacher, and equipment;</p> <p>Student receives and uses feedback from teacher and peers in a courteous manner;</p> <p>Student participates fully, but needs some teacher prompting and/or supervision;</p> <p>Participates in most class activities at an appropriate and productive level;</p> <p>Student is most often able to work cooperatively and productively with classmates, including during peer assessments;</p> <p>Student is able to work hard and not get frustrated with setbacks;</p> <p>Student is committed to learning;</p> <p>Student is committed to engaging in cycling in a safe manner, and keeping all classmates safe during the cycling unit.</p>	<p>Student may not always be respectful toward classmates, teacher, and equipment;</p> <p>Student may listen to feedback from teacher or peers, but may not attempt and/or have difficulty applying it;</p> <p>Student requires some teacher supervision, but does exhibit some self-control at times;</p> <p>Student demonstrates the ability to work cooperatively and productively with classmates, but may need teacher direction or supervision;</p> <p>Student participates in most class activities;</p> <p>Student is willing to try, but may get frustrated with setbacks, and pout and/or verbalize frustration;</p> <p>Student may fluctuate between riding safely and unsafely at times.</p>	<p>Student may struggle with being respectful toward classmates, teacher, and equipment and/or show anger and/or blame others for cycling mishaps;</p> <p>Student does not listen to feedback from teacher or peers, and does not attempt to apply it;</p> <p>Student requires ongoing supervision and does not ride safely;</p> <p>Student may be unprepared and show very little interest in learning or the activity;</p> <p>Student becomes frustrated easily and may quit participating.</p>

## Safety



1. Follow the 2-2-2-2 Rule (2 wheels on the ground; 2 feet on the pedals; 2 hands on the handlebars; 2 fingers on the brake levers) while riding the bicycle.
2. Use the rear brake only to stop the bicycle, until the skill level advances to be able to safely use the front brake.
3. Instruct students to ride the bicycles on the designated course and demonstrate the skill components in the “chute.”
4. Instruct students to keep at least three-bikes-lengths between each rider.

## Differentiating Instruction

### Adapted and Beginner

- Encourage slower riding at first.
- Make sure the course used is safe and flat.
- Check that there is considerable space for students to safely ride, without obstacles or other rider interference. It may be necessary for an aide to work with adapted students and/or students who are truly beginners, to help them remember to use the brake instead of their feet to stop.

### Intermediate and Advanced

- Students can progress to the Quick Stop found in Unit 3.

## Best Practices



1. Provide a discreet opportunity and safe environment for students to share information pertaining to their ability and comfort level for riding a bicycle.
2. Always complete the Helmet Fit and ABC Quick Check at the beginning of every class in which the students will be riding. The use of peers/partners to practice, inspect, and correct each other will make the most efficient use of class time and reinforce bicycle safety skills. This should not replace teacher assessment.
3. Review the three-bicycles-length rule to promote safe riding. The three-bicycles-length rule is a reminder of keeping a safe distance between cyclists while riding single-file. To help maintain proper spacing, have a marker on the course that allows students to see when it is their turn to go: when the person in front of them gets to the marker, the next student may start riding.



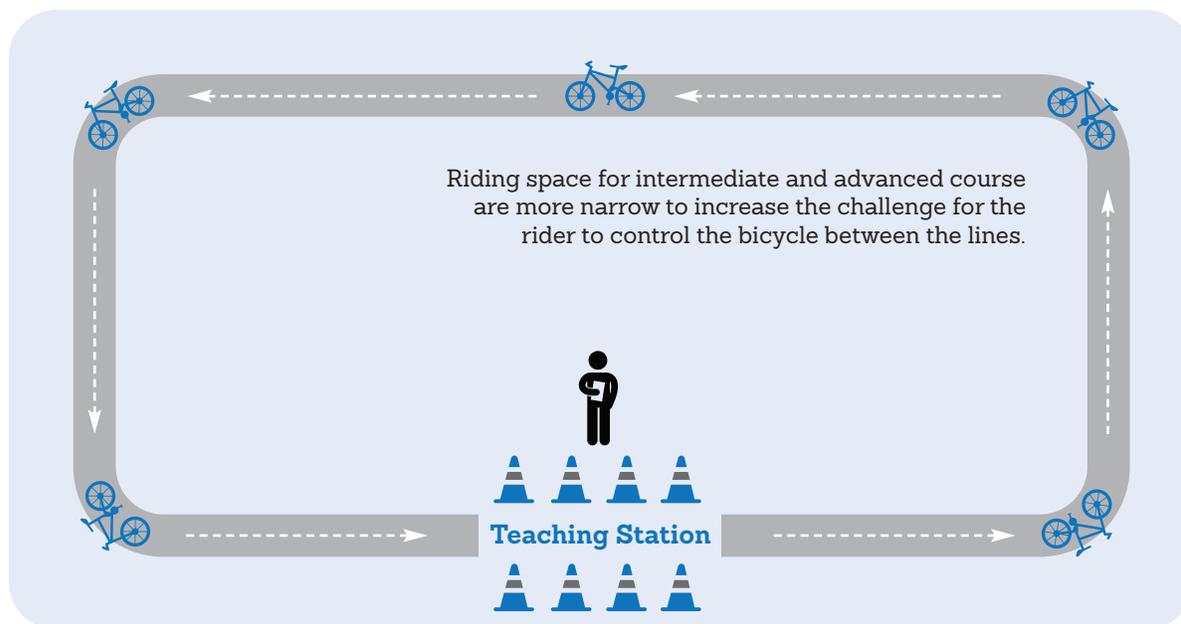


# SKILL-BASED ACTIVITY

## Straight-Line Riding

- Timeframe**      **Beginners:** 5–7 minutes  
**Intermediate:** 5 minutes  
**Advanced:** 5 minutes
- Objectives**      At the conclusion of this activity the student will be able to:
1. Demonstrate exceptional or reliable performance of straight line riding as measured by the straight line rubric. (Psychomotor)
  2. Demonstrate exceptional or reliable social behavior as measured by the social behavior rubric. (Affective)
- National Standards** Standard 1  
Standard 2  
Standard 3  
Standard 4
- Equipment**      • Bicycles  
• Helmets  
• Head barriers  
• Allen wrench  
• Cones, domes, polypots or chalk to mark riding course  
• Red floor tape
- Teacher Overview** This activity reinforces the skill of riding a bicycle in a straight line. This activity can be conducted in a relatively short timeframe.
- Preparation**      1. Designate a riding course that enables the teacher to see the students at all times. This will enable students to ride throughout the class period, even when they are not performing skills.
2. Set up a “chute” using cones, to indicate where the student will perform the skill and the teacher will conduct the assessment. This area should also serve as a teaching station in which the skill will be demonstrated for the students, and where students will return when instructed.
  3. If bicycles have both front and rear brakes: Wrap the left handle of the bicycle with red floor tape to discourage students from using the front brake, until proper braking skill is taught.
  4. Practice the straight line riding skill before demonstrating to students.

Diagram: Straight-Line Riding Course



### Directions

1. Introduce this activity using the following prompt:

*Straight line riding is a skill that is necessary to ride safely in a number of situations. Riding in a straight line allows bicyclists to ride on bike paths, and to ride next to friends and family, without causing a crash. Riding in a straight line also helps motorists, pedestrians and other bicyclists better able to predict a bicyclist's movements.*

2. Use the following sample questions to prompt students' thinking about the content in this activity.

**Q: Why would it be good to know how to ride in a straight line?**

**A:** Any of the following:

- There might be times when riding in a straight line would be more appropriate.
- It is also safer to ride straight than to zigzag all over the road or bike path.

**Q: When might you need to ride in a straight line?**

**A:** Any of the following:

- If you were riding with a friend on a bike path and someone wanted to pass or someone was coming toward you.
- Bicyclists typically ride in single-file, instead of side by side, when riding on a street.
- Other responses may be accepted.

3. Discuss expected bicycle positioning while riding the course:
  - Aim to ride three-bicycles-lengths apart on riding course.
  - As students progress in skill level and control, they can ride as close as one bike length, but not until directed to do so by the teacher.
  - Ride at a controlled pace without passing other riders.
  - Ride on the course or between the lines.
4. Blow the whistle to stop students. Students should stop in a controlled manner, without tire skidding or getting too close to the rider in front of them.
5. Repeat activity step #4 to practice riding and stopping in a controlled manner. This will serve as the basis for classroom management during the bike unit.

### Assessment

1. Assess performance of straight line riding for each student using the following rubric.

## PERFORMANCE RUBRIC: STRAIGHT-LINE RIDING

Exceptional	Reliable	Inconsistent	Struggling/ Survival
<p>Student is able to maintain a straight line while riding alone and in a line of riders, without passing or overlapping wheels (maintaining appropriate safe distance);</p> <p>Student can stop and maintain a safe distance from the cyclist in front.</p>	<p>Student is able to maintain a straight line while riding alone and in a line of riders, but sometimes has difficulty in not overlapping wheels with the rider in front;</p> <p>Student can stop safely without touching wheels, but may overlap wheels with the rider in front.</p>	<p>Student can maintain a straight line for a short distance before weaving;</p> <p>Student has difficulty riding in a straight line with other riders and often overlaps wheels;</p> <p>Student has difficulty stopping without running into (or nearly running into) other riders.</p>	<p>Student is unable to maintain a straight line while riding, and is unable to safely ride in a straight line with other riders.</p>

2. Assess the performance of social behavior for each student using the following rubric.

## PERFORMANCE RUBRIC: SOCIAL BEHAVIOR

Exceptional	Reliable	Inconsistent	Struggling/ Survival
<p>Student is respectful toward classmates, teacher, and equipment;</p> <p>Student receives and uses feedback from teacher and peers in a courteous manner;</p> <p>Student participates fully, without teacher prompting or supervision;</p> <p>Student is able to work cooperatively and productively with classmates, including during peer assessments;</p> <p>Student perseveres, even through difficult skills/activities, and maintains a positive attitude;</p> <p>Student is committed to learning;</p> <p>Student is committed to engaging in cycling in a safe manner, and keeping all classmates safe during the cycling unit.</p>	<p>Student is respectful toward classmates, teacher, and equipment;</p> <p>Student receives and uses feedback from teacher and peers in a courteous manner;</p> <p>Student participates fully, but needs some teacher prompting and/or supervision;</p> <p>Participates in most class activities at an appropriate and productive level;</p> <p>Student is most often able to work cooperatively and productively with classmates, including during peer assessments;</p> <p>Student is able to work hard and not get frustrated with setbacks;</p> <p>Student is committed to learning;</p> <p>Student is committed to engaging in cycling in a safe manner, and keeping all classmates safe during the cycling unit.</p>	<p>Student may not always be respectful toward classmates, teacher, and equipment;</p> <p>Student may listen to feedback from teacher or peers, but may not attempt and/or have difficulty applying it;</p> <p>Student requires some teacher supervision, but does exhibit some self-control at times;</p> <p>Student demonstrates the ability to work cooperatively and productively with classmates, but may need teacher direction or supervision;</p> <p>Student participates in most class activities;</p> <p>Student is willing to try, but may get frustrated with setbacks, and pout and/or verbalize frustration;</p> <p>Student may fluctuate between riding safely and unsafely at times.</p>	<p>Student may struggle with being respectful toward classmates, teacher, and equipment and/or show anger and/or blame others for cycling mishaps;</p> <p>Student does not listen to feedback from teacher or peers, and does not attempt to apply it;</p> <p>Student requires ongoing supervision and does not ride safely;</p> <p>Student may be unprepared and show very little interest in learning or the activity;</p> <p>Student becomes frustrated easily and may quit participating.</p>

## Safety



1. Follow the 2-2-2 Rule (2 wheels on the ground; 2 feet on the pedals; 2 hands on the handlebars; 2 fingers on the brake levers) while riding the bicycle.
2. Use the rear brake only to stop the bicycle, until the skill level advances to be able to safely use the front brake.
3. Instruct students to keep at least three-bikes-lengths between each rider.

## Differentiating Instruction

### Adapted and Beginner

- Beginning riders will often be more wobbly and have less ability to ride in a straight line; hence the need for a course that is wider. It is also very difficult for beginners to ride at a faster pace and riding slower makes maintaining balance and riding in a straight line more difficult – given the need for advanced balancing skills.
- Beginning riders will need space, time and a wider course, where they cannot hurt themselves or other students. Lower the seat so that beginning riders can touch the ground with their feet.

### Intermediate and Advanced

- Challenge more advanced riders, as appropriate, to ride more slowly and/or ride within one bicycle length, while riding single-file.

## Best Practices



1. Provide a discreet opportunity and safe environment for students to share information pertaining to their ability and comfort level for riding a bicycle.
2. Always complete the Helmet Fit and ABC Quick Check at the beginning of every class in which the students will be riding. The use of peers/partners to practice, inspect, and correct each other will make the most efficient use of class time and reinforce bicycle safety skills. This should not replace teacher assessment.
3. Review the three-bikes-lengths rule to promote safe riding. This is a reminder of keeping a safe distance between cyclists while riding single-file. To help maintain proper spacing, have a marker on the course that allows students to see when it is their turn to go: when the person in front of them gets to the marker, the next student may start riding.





# SKILL-BASED ACTIVITY

## Power Start

### Timeframe

**Beginners:** 5-7 minutes  
**Intermediate:** 5 minutes  
**Advanced:** 5 minutes

### Objectives

At the conclusion of this activity the student will be able to:

1. Demonstrate exceptional or reliable performance of the Power Start skill as measured by the Power Start rubric. (Psychomotor)
2. Demonstrate exceptional or reliable social behavior as measured by the social behavior rubric. (Affective)

**National Standards** Standard 1  
Standard 2  
Standard 3  
Standard 4

### Equipment

- Bicycles
- Helmets
- Head barriers
- Allen wrench
- Cones, domes, polypots or chalk to mark riding course
- Red floor tape

### Teacher Overview

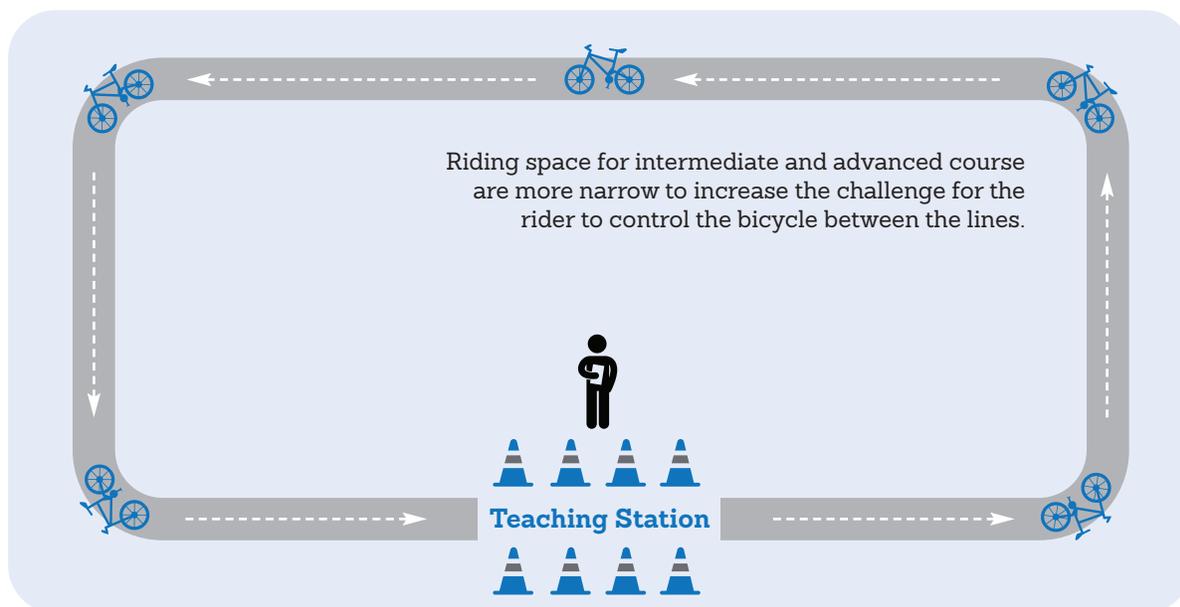
This activity enables the rider to begin riding in a strong, controlled manner. Although a basic skill, this can be challenging for beginning riders who are not comfortable standing on the pedals.

### Preparation

1. Designate a riding course that enables the teacher to see the students at all times. This will enable students to ride throughout the class period, even when they are not performing skills.
2. Set up a “chute” using cones, to indicate where the student will perform the skill and the teacher will conduct the assessment. This area should also serve as a teaching station in which the skill will be demonstrated for the students, and where students will return when instructed.
3. If bicycles have both front and rear brakes: Wrap the left handle of the bicycle with red floor tape to discourage students from using the front brake, until proper braking skill is taught.
4. Practice the Power Start skill before demonstrating to students.



## Diagram: Power Start Course



### Directions

1. Introduce this activity using the following prompt:  
*Now we are going to learn how to start riding a bicycle in a strong, controlled manner and prevent hesitation and wobbling.*
2. Use the following sample questions to prompt students' thinking about the content in this activity.

**Q: Does it matter how you start riding?**

**A:** Yes, there is a way to start to be more efficient.

**Q: What might you gain if you started out standing?**

**A:** Either of the following:

- Power
- Stability

3. Explain and demonstrate skills to students in the teaching station reinforcing the following points. Power Start, riders should:

- Straddle the bicycle and place one foot on the ground, the other foot on the pedal between the 12 and 2 o'clock position. The rider should be standing, not sitting on the saddle.
- Push down on the pedal moving it to the 6 o'clock position and push off the ground with the other foot at the same time. The rider should be standing above the saddle, coast, and count to three before placing the other foot onto the other pedal.
- Then sit on the saddle.



4. Instruct students to begin the Power Start.
5. Instruct students to repeat the Power Start, using the other foot on the pedal to start.

**Assessment**

1. Assess performance of the Power Start for each student using the following rubric.

PERFORMANCE RUBRIC: POWER START 

Exceptional	Reliable	Inconsistent	Struggling/ Survival
<p>Student can start immediately, is able to get pedal into the correct position (near 12 o'clock) and start from a standing position, and push off with the ground foot;</p> <p>Student is able to pedal and coast for up to 3 seconds before sitting on the saddle;</p> <p>Student has power to his start.</p>	<p>Student can start immediately, is able to get the pedal into the correct position (near 12 o'clock) and start from a standing position, but may not push off with the ground foot;</p> <p>Student starts with a pedal, but may sit on the saddle immediately instead of coasting;</p> <p>Student may at times not have enough power to get going.</p>	<p>Student can get started more quickly, but may be unable to stand, and instead want to remain seated to start;</p> <p>Student is able to move the pedal into the correct position (near 12 o'clock) in order to begin pedaling when starting.</p>	<p>Student has difficulty starting from a Power Start position and often takes a great deal of time getting started;</p> <p>Student is unable to stand and start, and may not understand how to place the pedal (near 12 o'clock position) in order gain power to start riding.</p>

2. Assess the performance of social behavior for each student using the following rubric.

## PERFORMANCE RUBRIC: SOCIAL BEHAVIOR



Exceptional	Reliable	Inconsistent	Struggling/ Survival
<p>Student is respectful toward classmates, teacher, and equipment;</p> <p>Student receives and uses feedback from teacher and peers in a courteous manner;</p> <p>Student participates fully, without teacher prompting or supervision;</p> <p>Student is able to work cooperatively and productively with classmates, including during peer assessments;</p> <p>Student perseveres, even through difficult skills/activities, and maintains a positive attitude;</p> <p>Student is committed to learning;</p> <p>Student is committed to engaging in bicycling in a safe manner, and keeping all classmates safe during the bicycling unit.</p>	<p>Student is respectful toward classmates, teacher, and equipment;</p> <p>Student receives and uses feedback from teacher and peers in a courteous manner;</p> <p>Student participates fully, but needs some teacher prompting and/or supervision;</p> <p>Participates in most class activities at an appropriate and productive level;</p> <p>Student is most often able to work cooperatively and productively with classmates, including during peer assessments;</p> <p>Student is able to work hard and not get frustrated with setbacks;</p> <p>Student is committed to learning;</p> <p>Student is committed to engaging in bicycling in a safe manner, and keeping all classmates safe during the bicycling unit.</p>	<p>Student may not always be respectful toward classmates, teacher, and equipment;</p> <p>Student may listen to feedback from teacher or peers, but may not attempt and/or have difficulty applying it;</p> <p>Student requires some teacher supervision, but does exhibit some self-control at times;</p> <p>Student demonstrates the ability to work cooperatively and productively with classmates, but may need teacher direction or supervision;</p> <p>Student participates in most class activities;</p> <p>Student is willing to try, but may get frustrated with setbacks, and pout and/or verbalize frustration;</p> <p>Student may fluctuate between riding safely and unsafely at times.</p>	<p>Student may struggle with being respectful toward classmates, teacher, and equipment and/or show anger and/or blame others for cycling mishaps;</p> <p>Student does not listen to feedback from teacher or peers, and does not attempt to apply it;</p> <p>Student requires ongoing supervision and does not ride safely;</p> <p>Student may be unprepared and show very little interest in learning or the activity;</p> <p>Student becomes frustrated easily and may quit participating.</p>

## Safety



1. Follow the 2-2-2 Rule (2 wheels on the ground; 2 feet on the pedals; 2 hands on the handlebars; 2 fingers on the brake levers) while riding the bicycle.
2. Use the rear brake only to stop the bicycle, until the skill level advances to be able to safely use the front brake.
3. Instruct students to ride the bicycles on the designated course and demonstrate the skill components in the “chute.”
4. Instruct students to keep at least three-bikes-lengths between each rider.

## Differentiating Instruction

### Adapted and Beginner

- Beginning riders will often want to start seated.
- An aide or volunteer may be needed to help beginners as they try a Power Start.
- Pairing more experienced peers with those less familiar with riding could also be useful.

### Intermediate and Advanced

- Challenge these riders to start on an uphill, or in a single-file line while maintaining a safe distance.

## Best Practices



1. Provide a discreet opportunity and safe environment for students to share information pertaining to their ability and comfort level for riding a bicycle.
2. Always complete the Helmet Fit and ABC Quick Check at the beginning of every class in which the students will be riding. The use of peers/partners to practice, inspect and correct each other will make the most efficient use of class time and reinforce bicycle safety skills. This should not replace teacher assessment.
3. Review the three-bikes-length rule to promote safe riding. This is a reminder of keeping a safe distance between cyclists while riding single-file. To help maintain proper spacing, have a marker on the course that allows students to see when it is their turn to go: when the person in front of them gets to the marker, the next student may start riding.





# SKILL-BASED ACTIVITY

## Ready Position

### Timeframe

**Beginners:** 5–7 minutes  
**Intermediate:** 5 minutes  
**Advanced:** 5 minutes

### Objectives

At the conclusion of this activity the student will be able to:

1. Demonstrate exceptional or reliable performance of the Ready Position skill as measured by the Ready Position rubric. (Psychomotor)
2. Demonstrate exceptional or reliable social behavior as measured by the social behavior rubric. (Affective)

**National Standards** Standard 1  
Standard 2  
Standard 3  
Standard 4

### Equipment

- Bicycles
- Helmets
- Head barriers
- Allen wrench
- Cones, domes, polypots or chalk to mark riding course
- Jump ropes
- Red floor tape

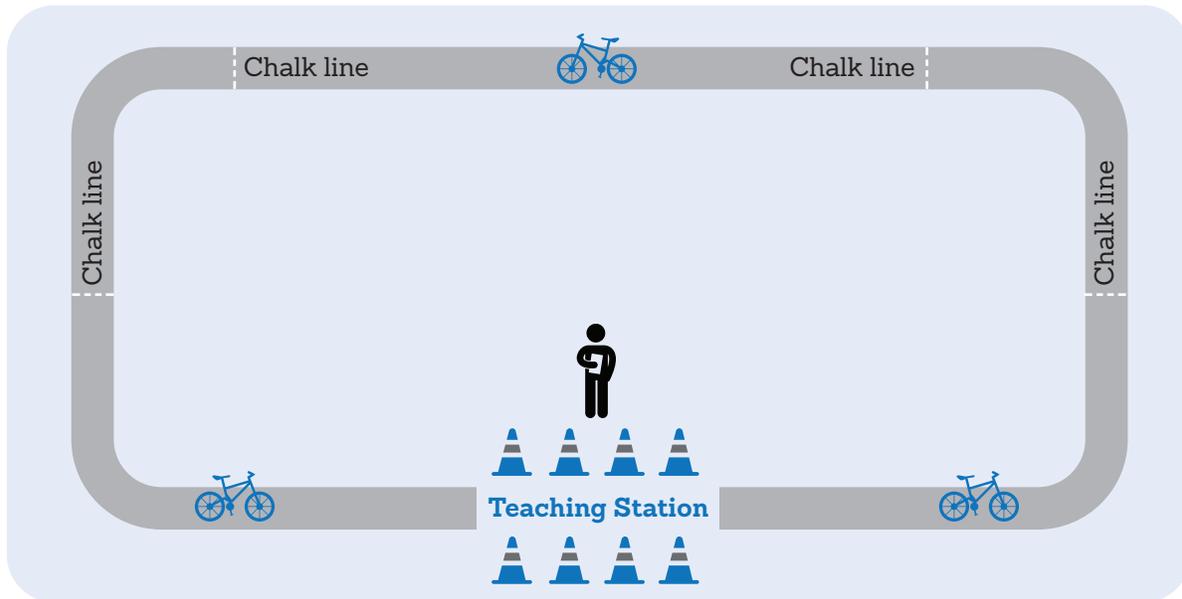
### Teacher Overview

This activity teaches a body position that enables a rider to be in control of the bicycle and be prepared to absorb bumps, ride over uneven terrain and be ready to make quick stops and turns.

### Preparation

1. Designate a riding course that enables the teacher to see the students at all times. This will enable students to ride throughout the class period, even when they are not performing skills.
2. Set up the riding course so that it varies in difficulty using chalk lines for less experienced riders and jump ropes for more experienced bicyclists.
3. Set up a “chute” using cones, to indicate where the student will perform the skill and the teacher will conduct the assessment. This area should also serve as a teaching station in which the skill will be demonstrated for the students, and where students will return when instructed.
4. If bicycles have both front and rear brakes: Wrap the left handle of the bicycle with red floor tape to discourage students from using the front brake, until proper braking skill is taught.
5. Practice the Ready Position skill before demonstrating to students.

## Diagram: Ready Position Course



### Directions

1. Introduce this activity using the following prompt:

*Now we are going to learn how to perform the Ready Position. The Ready Position is a body position that helps keep you alert and ready to maneuver the bicycle. It will enable you to quickly control your bicycle if you ride over a bump or uneven terrain. It will also set you up to be able to quickly turn or stop if needed.*

2. Use the following sample questions to prompt students' thinking about the content in this activity.

**Q: How might you be prepared to run over something with your bicycle?**

**A:** Any of the following:

- Ready Position
- Standing over saddle
- Fingers on the brake levers

### Ready Position





- Cue:** two fingers
- Cue:** weight back
- Cue:** pedals parallel

3. Explain and demonstrate skills to students in the teaching station reinforcing the following points. Riders should:
  - Extend arms with two fingers resting on brake levers without squeezing the levers. **(Cue)**
  - Stand over the saddle, with the majority of weight over the back tire. **(Cue)**
  - Position pedals parallel to the ground, in the 9 o'clock and 3 o'clock position. **(Cue)**
4. Instruct students to perform the Ready Position while coasting through the chute.
5. Ride the designated course and perform the Ready Position when riding over chalk lines or jump ropes representing bumps on the course.
6. Provide more practice opportunities by instructing students to ride multiple laps around the designated course. While students are riding, the teacher should blow a whistle signaling the students to perform the ready position skill for five seconds and then continue riding.

**Assessment**

1. Assess performance of the Ready Position skill of each student using the following rubric:

PERFORMANCE RUBRIC: READY POSITION 

Exceptional	Reliable	Inconsistent	Struggling/ Survival
<p>Student has her fingers ready to brake;</p> <p>Student is standing with pedals in correct position (9 o'clock &amp; 3 o'clock) and has her body weight distributed over the back of the bike;</p> <p>Student is able to maintain some flexibility as she rides in this position, so as to give with the terrain /bump in the road (e.g., railroad tracks).</p>	<p>Student has her fingers ready to brake, is standing in the correct position (9 o'clock &amp; 3 o'clock), but may be unable to position weight over the back tire;</p> <p>Student may still ride in a rigid position, instead of being more flexible.</p>	<p>Student may not have her fingers ready to brake;</p> <p>Student can move her pedals into the correct position (9 o'clock &amp; 3 o'clock), but may be unable to stand;</p> <p>If student does stand, she may be unable to position weight over the rear wheel;</p> <p>Student does have her fingers ready to brake.</p>	<p>Student doesn't have her fingers (if applicable) ready to brake; Student does not understand the Ready Position;</p> <p>Student cannot move the pedals to the correct position (9 o'clock &amp; 3 o'clock);</p> <p>Student's weight is not positioned toward the back of the bike, and she is unable to stand.</p>

2. Assess the performance of social behavior for each student using the following rubric.

PERFORMANCE RUBRIC: SOCIAL BEHAVIOR 

Exceptional	Reliable	Inconsistent	Struggling/ Survival
<p>Student is respectful toward classmates, teacher, &amp; equipment;</p> <p>Student receives and uses feedback from teacher and peers in a courteous manner;</p> <p>Student participates fully, without teacher prompting or supervision;</p> <p>Student is able to work cooperatively and productively with classmates, including during peer assessments;</p> <p>Student perseveres, even through difficult skills/activities, and maintains a positive attitude;</p> <p>Student is committed to learning;</p> <p>Student is committed to engaging in cycling in a safe manner, and keeping all classmates safe during the cycling unit.</p>	<p>Student is respectful toward classmates, teacher, &amp; equipment;</p> <p>Student receives and uses feedback from teacher and peers in a courteous manner;</p> <p>Student participates fully, but needs some teacher prompting and/or supervision;</p> <p>Participates in most class activities at an appropriate and productive level;</p> <p>Student is most often able to work cooperatively and productively with classmates, including during peer assessments;</p> <p>Student is able to work hard and not get frustrated with setbacks;</p> <p>Student is committed to learning;</p> <p>Student is committed to engaging in cycling in a safe manner, and keeping all classmates safe during the cycling unit.</p>	<p>Student may not always be respectful toward classmates, teacher, &amp; equipment;</p> <p>Student may listen to feedback from teacher or peers, but may not attempt and/or have difficulty applying it;</p> <p>Student requires some teacher supervision, but does exhibit some self-control at times;</p> <p>Student demonstrates the ability to work cooperatively and productively with classmates, but may need teacher direction or supervision;</p> <p>Student participates in most class activities;</p> <p>Student is willing to try, but may get frustrated with setbacks, and pout and/or verbalize frustration;</p> <p>Student may fluctuate between riding safely and unsafely at times.</p>	<p>Student may struggle with being respectful toward classmates, teacher, &amp; equipment and/or show anger and/or blame others for cycling mishaps;</p> <p>Student does not listen to feedback from teacher or peers, and does not attempt to apply it;</p> <p>Student requires ongoing supervision and does not ride safely;</p> <p>Student may be unprepared and show very little interest in learning or the activity;</p> <p>Student becomes frustrated easily and may quit participating.</p>

## Safety



1. Follow the 2-2-2-2 Rule (2 wheels on the ground; 2 feet on the pedals; 2 hands on the handlebars; 2 fingers on the brake levers) while riding the bicycle.
2. Use the rear brake only to stop the bicycle, until the skill level advances to be able to safely use the front brake.
3. Instruct students to ride the bicycles on the designated course and demonstrate the skill components in the “chute.”
4. Instruct students to keep at least three-bikes-lengths between each rider.

## Differentiating Instruction

### Adapted

- Divide students into separate courses, as needed, based on skill level. This will ensure a safe riding environment as students ride at a pace and through a course appropriate for their level.
- Beginners may not be able to stand on their bike, but can assume the pedal position (3 o'clock and 9 o'clock) while seated.

### Intermediate and Advanced

- To challenge more advanced riders, use small tree limbs, several jump ropes in a row (to resemble a grate), and other small objects.
- Take care to ensure objects will not roll or move and present a safety issue.

## Best Practices



1. Provide a discreet opportunity and safe environment for students to share information pertaining to their ability and comfort level for riding a bicycle.
2. Always complete the Helmet Fit and ABC Quick Check at the beginning of every class in which the students will be riding. The use of peers/partners to practice, inspect and correct each other will make the most efficient use of class time and reinforce bicycle safety skills. This should not replace teacher assessment.
3. Review the three-bikes-lengths rule to promote safe riding. This is a reminder of keeping a safe distance between cyclists while riding single-file. To help maintain proper spacing, have a marker on the course that allows students to see when it is their turn to go: when the person in front of them gets to the marker, the next student may start riding.





# SKILL-BASED ACTIVITY

## Scanning

### Timeframe

**Beginner:** 5-7 minutes  
**Intermediate:** 5 minutes  
**Advanced:** 5 minutes

### Objectives

At the conclusion of this activity the student will be able to:

1. Demonstrate exceptional or reliable performance of scanning as measured by the scanning rubric. (Psychomotor)
2. Demonstrate exceptional or reliable social behavior as measured by the social behavior rubric. (Affective)

### National Standards

Standard 1  
Standard 2  
Standard 3  
Standard 4

### Equipment

- Bicycles
- Helmets
- Head barriers
- Allen wrench
- Cones, domes, polypots or chalk to mark riding course
- Red floor tape

### Teacher Overview

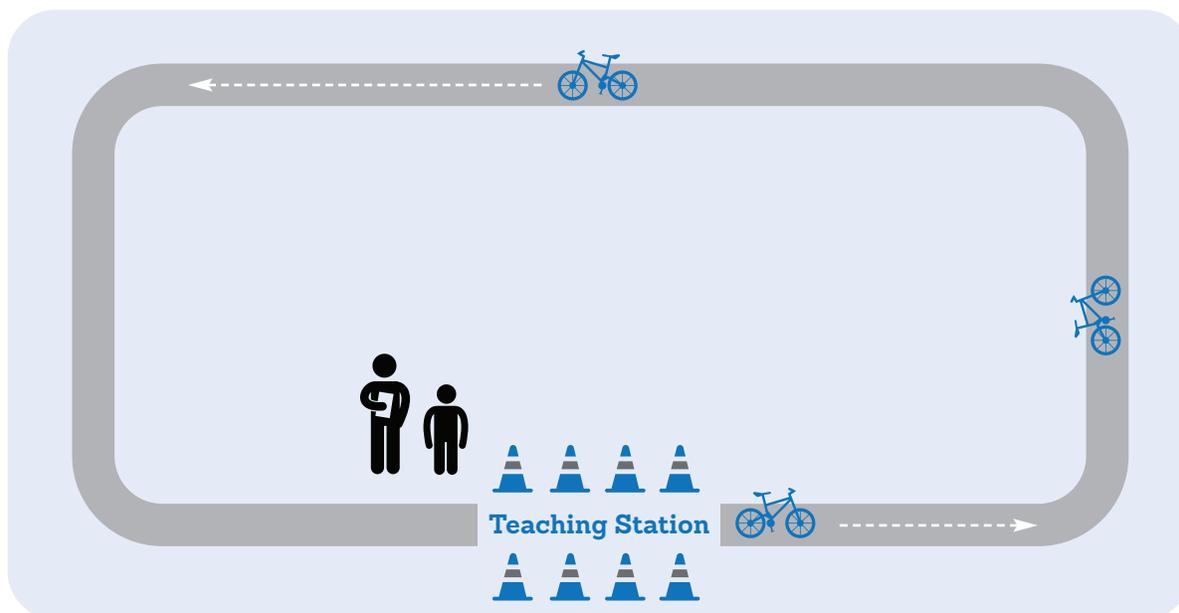
This activity teaches students how to scan behind them as they ride. When riding in traffic, bicyclists need to scan left and right for traffic and obstacles in the roadway on an ongoing basis. When preparing to turn or change lane positions, however, bicyclists like drivers, must not only scan left and right, but also scan for any traffic behind them. This skill involves looking over one's shoulder, identifying an object while looking (car, numbers of fingers, other object), all while maintaining a straight line on the bicycle. This is something that takes practice. Many will find that scanning over either the right or left shoulder is easier than the other. This activity is designed to give students practice scanning over both shoulders. This will require students to be able to balance while riding a bicycle.

### Preparation

1. Designate a riding course that enables the teacher to see the students at all times. This will enable students to ride throughout the class period, even when they are not performing skills.
2. Set up a "chute" using cones, to indicate where the student will perform the skill and the teacher will conduct the assessment. This area should also serve as a teaching station in which the skill will be demonstrated for the students, and where students will return when instructed.

3. If bicycles have both front and rear brakes: Wrap the left handle of the bicycle with red floor tape to discourage students from using the front brake, until proper braking skill is taught.
4. Practice the scanning skill before demonstrating to students.

**Diagram: Scanning Course**



### Directions

1. Introduce this activity using the following prompt:

*Today, we are going to practice looking to the rear while you are riding. This skill is called **scanning**. Because a bicyclist's surroundings are always changing, it is important to scan repeatedly during a ride. This makes scanning an essential bicycle safety skill. Bicyclists will sometimes find that scanning on one side is easier than the other. However it is important to be able to safely perform this skill from both sides. Therefore this skill will be practiced using both shoulders.*

2. Use the following sample questions to prompt students' thinking about the content in this activity.

**Q: How do riders know when it is safe to change lanes?**

**A:** Riders must look around to see if cars are coming up behind them.

**Q: What steps are necessary to scan?**

**A:** Remain in the seated position, glance over the shoulder and continue riding in a straight line.

3. Explain and demonstrate skills to students in the teaching station reinforcing the following points. Riders should:

- Stay seated upon entering the chute.
- Glance over the shoulder - touching the chin to the shoulder - and continue riding in a straight line within the lines of the chute. **(Cue)**

### Cue:

Chin to shoulder.



- Maintain a straight line of travel. This is one of the biggest challenges with scanning. To assist those students who continue to turn the handlebars of the bicycle when they scan, instruct those students to release the hand on the same side that the rider is scanning from the handlebar and drop it to the thigh while scanning.

4. Instruct students to begin riding the designated course with a Power Start.
5. Position yourself along the side of the chute with polypots, some other type of colored objects or large pictures of objects or signs. It is important for students not just to glance quickly, but to actually focus on surroundings behind the rider. The student will need to be able to identify what is being held up.
6. Instruct student to look over their left shoulder upon entering the chute and identify the color of the object being held up by the teacher, while remaining within the boundaries of the chute.
7. Repeat activity steps #4-6 using the right shoulder.
8. Provide more practice opportunities, for students by instructing them to ride multiple laps around the designated course. While students are riding, the teacher should blow a whistle signaling for the students to scan over either shoulder for five seconds and then continue riding.

**Assessment**

1. Assess performance of scanning for each student using the following rubric:

**PERFORMANCE RUBRIC: SCANNING**



Exceptional	Reliable	Inconsistent	Struggling/ Survival
<p>Student is able to scan over his shoulder for a longer period of time, enabling him to clearly see what is behind him;</p> <p>Student can scan without weaving or losing control of the bike.</p>	<p>Student is able to scan over his shoulder, but the scan may too brief to see much;</p> <p>Student may occasionally weave as a result of scanning, but is able to get the bike under control quickly.</p>	<p>Student is able to briefly glance over his shoulder (right or left), but typically then weaves/loses control as a result of turning his body and/or handlebars while scanning;</p> <p>Student does not understand the importance of scanning while riding.</p>	<p>Student is unable to scan while riding, so he must stop first and then look over his shoulder (right or left) to scan, then begin riding again;</p> <p>Because student has difficulty with balance and straight line riding, scanning is difficult and not safe to do while riding;</p> <p>Student may also not understand the importance of scanning.</p>

2. Assess the performance of social behavior for each student using the following rubric.

PERFORMANCE RUBRIC: SOCIAL BEHAVIOR 

Exceptional	Reliable	Inconsistent	Struggling/ Survival
<p>Student is respectful toward classmates, teacher, and equipment;</p> <p>Student receives and uses feedback from teacher and peers in a courteous manner;</p> <p>Student participates fully, without teacher prompting or supervision;</p> <p>Student is able to work cooperatively and productively with classmates, including during peer assessments;</p> <p>Student perseveres, even through difficult skills/activities, and maintains a positive attitude;</p> <p>Student is committed to learning;</p> <p>Student is committed to engaging in cycling in a safe manner, and keeping all classmates safe during the cycling unit.</p>	<p>Student is respectful toward classmates, teacher, and equipment;</p> <p>Student receives and uses feedback from teacher and peers in a courteous manner;</p> <p>Student participates fully, but needs some teacher prompting and/or supervision;</p> <p>Participates in most class activities at an appropriate and productive level;</p> <p>Student is most often able to work cooperatively and productively with classmates, including during peer assessments;</p> <p>Student is able to work hard and not get frustrated with setbacks;</p> <p>Student is committed to learning;</p> <p>Student is committed to engaging in cycling in a safe manner, and keeping all classmates safe during the cycling unit.</p>	<p>Student may not always be respectful toward classmates, teacher, and equipment;</p> <p>Student may listen to feedback from teacher or peers, but may not attempt and/or have difficulty applying it;</p> <p>Student requires some teacher supervision, but does exhibit some self-control at times;</p> <p>Student demonstrates the ability to work cooperatively and productively with classmates, but may need teacher direction or supervision;</p> <p>Student participates in most class activities;</p> <p>Student is willing to try, but may get frustrated with setbacks, and pout and/or verbalize frustration;</p> <p>Student may fluctuate between riding safely and unsafely at times.</p>	<p>Student may struggle with being respectful toward classmates, teacher, and equipment and/or show anger and/or blame others for cycling mishaps;</p> <p>Student does not listen to feedback from teacher or peers, and does not attempt to apply it;</p> <p>Student requires ongoing supervision and does not ride safely;</p> <p>Student may be unprepared and show very little interest in learning or the activity;</p> <p>Student becomes frustrated easily and may quit participating.</p>

## Safety



1. Follow the 2-2-2-2 Rule (2 wheels on the ground; 2 feet on the pedals; 2 hands on the handlebars; 2 fingers on the brake levers) while riding the bicycle.
2. Use the rear brake only to stop the bicycle, until the skill level advances to be able to safely use the front brake.
3. Instruct students to ride the bicycles on the designated course and demonstrate the skill components in the “chute.”
4. Instruct students to keep at least three-bikes-lengths between each rider.
5. Instruct students that when they scan over the right shoulder, they will need to keep both hands on the handlebar to ensure that if braking is needed, it is done with the rear brake.

## Differentiating Instruction

### Adapted and Beginner

- Beginning students who have difficulty with straight line riding will likely have difficulty scanning while riding.
- Beginners may need to ride, stop and scan and then ride again, slowly moving to the point of not stopping.
- Having a wider course/chute for beginners is necessary.

### Intermediate and Advanced

- Set up a more difficult course for more experienced bicyclists.
- Have students scan and call out what they see.
- Make objects more difficult to see while scanning.

## Best Practices



1. Provide a discreet opportunity and safe environment for students to share information pertaining to their ability and comfort level for riding a bicycle.
2. Complete the Helmet Fit and ABC Quick Check at the beginning of every class when students will be riding. The use of peers/partners to practice, inspect, and correct each other will make the most efficient use of class time and reinforce bicycle safety skills. This should not replace teacher assessment.
3. Review the three-bikes-lengths rule to promote safe riding. This is a reminder for students to keep a safe distance between each other while riding single-file. To help maintain proper spacing, use a marker on the course so students can see when it is their turn to go: when the person in front of them gets to the marker, the next student may start.





# SKILL-BASED ACTIVITY

## Signaling

### Timeframe

**Beginners:** 5–7 minutes  
**Intermediate:** 5 minutes  
**Advanced:** 5 minutes

### Objectives

At the conclusion of this activity the student will be able to:

1. Demonstrate exceptional or reliable performance of signaling as measured by the signaling rubric. (Psychomotor)
2. Demonstrate exceptional or reliable social behavior as measured by the social behavior rubric. (Affective)

**National Standards** Standard 1  
Standard 2  
Standard 3  
Standard 4

### Equipment

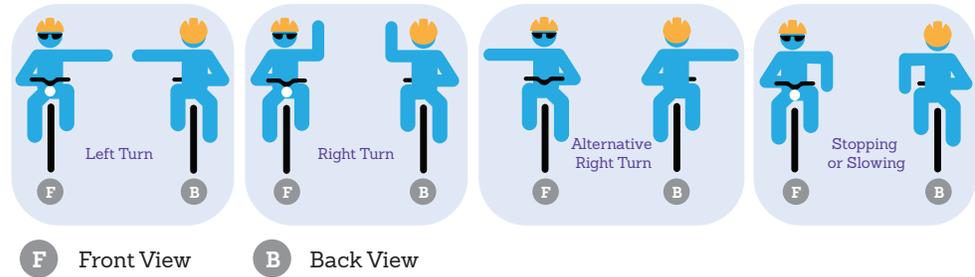
- Bicycles
- Helmets
- Head barriers
- Allen wrench
- Cones, domes, polypots or chalk to mark riding course
- Red floor tape
- *Hand Signals* handout

**Teacher Overview** This activity has students practicing hand signals while riding a bicycle. This skill will require students to ride with one hand while signaling and therefore will require a good deal of balance.

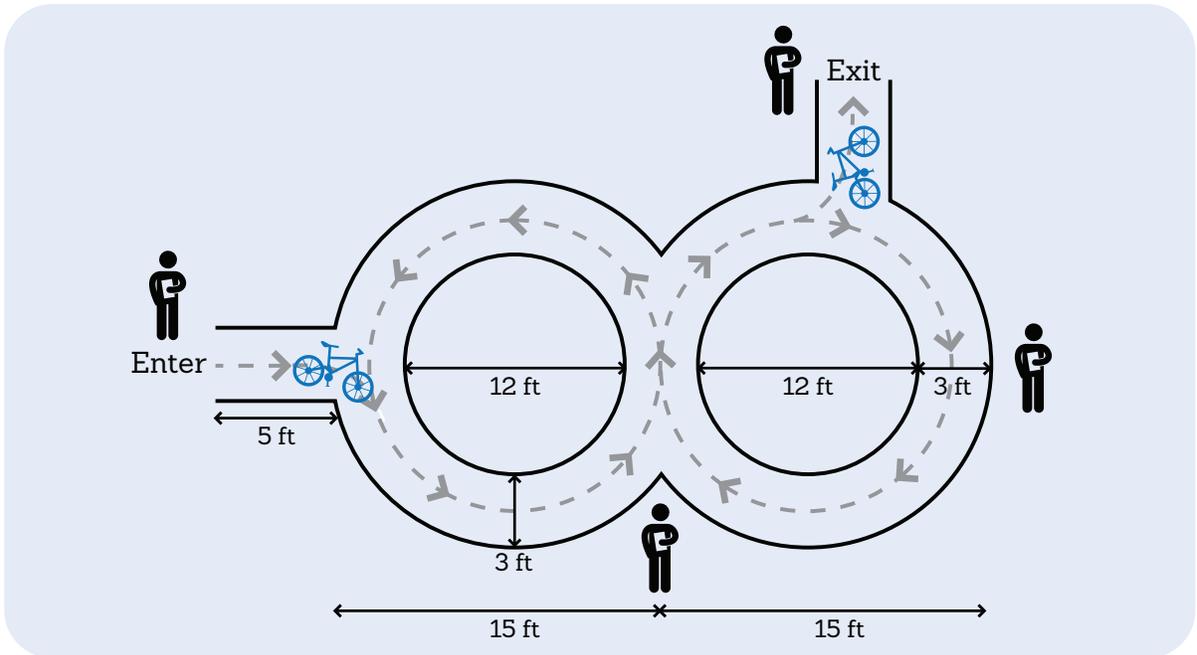
### Preparation

1. Designate a riding course that enables the teacher to see the students at all times. This will enable students to ride throughout the class period, even when they are not performing skills.
2. Set up a “chute” using cones, to indicate where the student will perform the skill and the teacher will conduct the assessment. This area should also serve as a teaching station in which the skill will be demonstrated for the students, and where students will return when instructed.
3. If bicycles have both front and rear brakes: Wrap the left handle of the bicycle with red floor tape to discourage students from using the front brake, until proper braking skill is taught.
4. Practice signaling before demonstrating to students.

## Hand Signals



## Signaling Course



## Directions

1. Introduce this activity using the following prompt:

*Now we are going to learn how to signal turning and stopping while riding a bicycle. Signals help other road users (drivers, riders and pedestrians) know your intentions when riding. Using hand signals to indicate turning requires being able to ride the bicycle with one hand – it takes skill and practice. As a vehicle on the road, bicyclists are required by law to signal to other bicycle riders or motor vehicles. Like scanning, using hand signals and maintaining a straight line while bicycling, takes practice. It is also important to verbalize signals, when riding with other bicyclists, so when signaling a stop, the cyclists should also call out “stopping.”*

2. Use the following sample questions to prompt students' thinking about the content in this activity.

**Q: How do drivers of cars signal other drivers of their intentions?**

**A:** With blinkers

**Q: Early cars did not have blinkers, so how did drivers signal back then?**

**A:** With hand signals, out the driver's side window

**Q: What if a modern-day car's blinker lights are broken? How should the driver signal?**

**A:** The driver should use hand signals

**Q: What is the signal for a left turn?**

**A:** Left arm out and parallel to ground, pointing left

**Q: What is the signal for right turn?**

**A:** Left arm out, parallel to the ground, elbow bent and hand pointing up

**Q: What is the signal for stopping?**

**A:** Left arm out, parallel to the ground, elbow bent and hand pointing down

**Q: Why should signals be used when bicycling?**

**A:** Responses can include:

- Bicycles are considered vehicles and must abide by traffic laws
- Signals let others know what a bicyclist intends to do

**3.** Practice hand signals with students, with them standing next to their bicycles as a group.

**4.** Instruct students to begin riding the designated course with a Power Start.

**5.** Instruct students to remain seated upon entering the chute, use their left hand to perform the three hand signals one right after another - right, left and stop - while staying within the boundaries of the chute.

**6.** Provide *Hand Signal* handout for take home (optional)



In some states it is legal to signal a right turn by using the right hand to point to the right, similar to the left turn signal. However, this practice is questionable among many safe bicycle advocates for several reasons. The driver of a motor vehicle is more likely to notice the signal made on the left side because it is being made on the driver's side of the vehicle. Many advocates feel bicyclists should use the same signals that are taught in their states driver's education courses and in their motor vehicle operator's manual. Most importantly for children and other inexperienced riders, making the signal with the left hand enables the rider to brake with the rear brake, using their right hand and therefore less likely to flip over the front of the handlebars if the left hand uses the front brake.

**Assessment**

1. Assess performance of signaling for each student using the following rubric:

**PERFORMANCE RUBRIC: SIGNALING**



Exceptional	Reliable	Inconsistent	Struggling/ Survival
Student has no difficulty signaling and uses the correct signals appropriately; Student signals prior to a turn, and then replaces his hand to make the turn.	Student is able to signal appropriately and replace his hand for turning; Student may weave just slightly when signaling, but regains control of the bike quickly, even with one hand.	Student may have difficulty remembering which signal to use at the appropriate time; Student may be uncomfortable riding with one hand when signaling, and may weave when signaling.	Student is unable to ride with one hand and signal, so he must stop, signal, then restart; Student may not understand the need to signal and/or be able to differentiate signals.

## Signaling

Because a bicycle is a vehicle, bicyclists must signal intention to turn or stop by using hand signals. The left hand is safest to perform these signals for a number of reasons:

- The right hand controls the rear brake and would allow a rider to signal and apply the brakes without the danger of being thrown over the handlebars.
- Motorists may not recognize or expect to see turn signals being made with the right hand. (We recommend you teach what is provided in your state driver's manual).

2. Assess the performance of social behavior for each student using the following rubric.

PERFORMANCE RUBRIC: SOCIAL BEHAVIOR 

Exceptional	Reliable	Inconsistent	Struggling/ Survival
<p>Student is respectful toward classmates, teacher, and equipment;</p> <p>Student receives and uses feedback from teacher and peers in a courteous manner;</p> <p>Student participates fully, without teacher prompting or supervision;</p> <p>Student is able to work cooperatively and productively with classmates, including during peer assessments;</p> <p>Student perseveres, even through difficult skills/activities, and maintains a positive attitude;</p> <p>Student is committed to learning;</p> <p>Student is committed to engaging in cycling in a safe manner, and keeping all classmates safe during the cycling unit.</p>	<p>Student is respectful toward classmates, teacher, and equipment;</p> <p>Student receives and uses feedback from teacher and peers in a courteous manner;</p> <p>Student participates fully, but needs some teacher prompting and/or supervision;</p> <p>Participates in most class activities at an appropriate and productive level;</p> <p>Student is most often able to work cooperatively and productively with classmates, including during peer assessments;</p> <p>Student is able to work hard and not get frustrated with setbacks;</p> <p>Student is committed to learning;</p> <p>Student is committed to engaging in cycling in a safe manner, and keeping all classmates safe during the cycling unit.</p>	<p>Student may not always be respectful toward classmates, teacher, and equipment;</p> <p>Student may listen to feedback from teacher or peers, but may not attempt and/or have difficulty applying it;</p> <p>Student requires some teacher supervision, but does exhibit some self-control at times;</p> <p>Student demonstrates the ability to work cooperatively and productively with classmates, but may need teacher direction or supervision;</p> <p>Student participates in most class activities;</p> <p>Student is willing to try, but may get frustrated with setbacks, and pout and/or verbalize frustration;</p> <p>Student may fluctuate between riding safely and unsafely at times.</p>	<p>Student may struggle with being respectful toward classmates, teacher, and equipment and/or show anger and/or blame others for cycling mishaps;</p> <p>Student does not listen to feedback from teacher or peers, and does not attempt to apply it;</p> <p>Student requires ongoing supervision and does not ride safely;</p> <p>Student may be unprepared and show very little interest in learning or the activity;</p> <p>Student becomes frustrated easily and may quit participating.</p>

## Safety



1. Follow the 2-2-2-2 Rule (2 wheels on the ground; 2 feet on the pedals; 2 hands on the handlebars; 2 fingers on the brake levers) while riding the bicycle.
2. Use the rear brake only to stop the bicycle, until the skill level advances to be able to safely use the front brake.
3. Instruct students to ride the bicycles on the designated course and demonstrate the skill components in the “chute.”
4. Instruct students to keep at least three-bikes-lengths between each rider.

## Differentiating Instruction

### Adapted

- Students may need to practice riding with one hand only, prior to using hand signals. This will require balance; so beginning riders will need space where they will not run into other. This process will take time and gradual “letting go”
- Beginning riders may also need to stop, signal and start again. Safety and control of the bike are first and foremost; signaling with the hand may be a necessary step, but it in no way replaces the need for arm signals.

### Intermediate and Advanced

- Use field paint or chalk to draw a large figure eight somewhere along the designated course.
- Instruct students to circle the field and, when they reach the figure eight, to ride on the lines of the figure eight with the left hand signaling a right turn. This will help increase the student’s comfort level with riding with one hand.

## Best Practices



1. Provide a discreet opportunity and safe environment for students to share information pertaining to their ability and comfort level for riding a bicycle.
2. Always complete the Helmet Fit and ABC Quick Check at the beginning of every class in which the students will be riding. The use of peers/partners to practice, inspect, and correct each other will make the most efficient use of class time and reinforce bicycle safety skills. This should not replace teacher assessment.
3. Review the three-bikes-lengths rule to promote safe riding. This is a reminder of keeping a safe distance between cyclists while riding single-file. To help maintain proper spacing, have a marker on the course that allows students to see when it is their turn to go: when the person in front of them gets to the marker, the next student may start riding.



# CLOSURE ACTIVITY

## Walk & Share

- Timeframe**      **Beginner:** 3-5 minutes  
**Intermediate:** 3-5 minutes  
**Advanced:** 3-5 minutes
- Objective**      At the conclusion of this activity the student will be able to:
1. Describe key concepts from Unit 2 including: Power Start, Ready Position, Scanning and Signaling as measured by completion of the *Bicycle Handling Skills worksheet*. (Cognitive)
- National Standards** Standard 2  
Standard 4
- Equipment**      • *Bicycle Handling Skills* worksheet  
• Pencils
- Teacher Overview** This activity prompts the students to think about what they have learned during Unit 2, by asking questions about basic bicycle handling skills. By working in groups to respond to the questions, the brainstorming will initiate peer discussion about safe bicycling behaviors.
- Preparation**      Make appropriate number of copies of *Bicycle Handling Skills worksheets*
- Directions**      1. Introduce this activity using the following prompt:
- We have now completed Unit 2 – “Bicycle Handling Basics.” All of the skills learned in this module to help you better control of your bicycle and communicate with other road users. Balance, controlled braking, scanning and signaling are essential skills to master and periodically practice.*
2. Divide students into pairs.
  3. Ask students to walk the perimeter of the gym. Explain that they will be given questions that they need to discuss with their partner when walking.
  4. Instruct students to stop when the whistle blows, and be prepared to share something that they discussed with their partner.
  5. Use the following sample questions to prompt students’ thinking about the content presented in this unit.
- Q: What is the key to being able to ride a bicycle?**  
**A:** Balance.



**Q: Why is controlled braking a necessary skill to master?**

**A:** Controlled braking enables a bicyclist to safely stop a bicycle.

**Q: Why should hand signals be used when riding?**

**A:** Responses can include:

- Because a bicycle is a vehicle and by law needs to signal to other road users
- So other bicyclists and drivers are aware of what you are preparing to do

**Q: What are the hand signals for left turn, right turn, stopping?**

**A:** Left arm out straight; left arm out, elbow bent with hand up; left arm out, elbow bent with hand down

**Q: What is the Power Start position?**

**A:** While straddling the bicycle, place one foot on the ground, the other foot on the pedal in the 12 o'clock position. The rider should be standing, not sitting on the saddle. Push down on the pedal moving it to the 6 o'clock position. Push off the ground with the other foot; similar to how one would ride a scooter. The rider should be standing above the saddle, coast and count to three before placing the other foot onto the other pedal. Then sit on the saddle.

**Q: Why is the Power Start a useful skill to know? When should it be used?**

**A:** The Power Start helps the bicyclist begin riding in a strong and controlled manner. The Power Start can be used any time a rider moves from a stopped position.

**Q: Why is the Ready Position important to practice?**

**A:** This position allows the rider to be prepared for obstacles and to make sudden moves more safely because of the balanced position on the bicycle

**Q: What is the Ready Position?**

**A:** Arms are extended with two fingers over brake levers. The rider is standing over the saddle, with the majority of weight over the back tire. The pedals are parallel to the ground, in the 9 o'clock and 3 o'clock position. **(Cue)**

**Cue:** two fingers  
**Cue:** weight back  
**Cue:** pedals parallel

#### Assessments

1. Successful completion of the *Bicycle Handling Skills* worksheet

#### Safety

1. Do not let students run or walk too quickly if carrying pencils

#### Differentiating Instruction

##### All levels

- Choose appropriate questions based on skill and ability level of students.

##### Intermediate and Advanced

- Set up lanes that students need to travel in. Include stop signs and intersections.

# BICYCLE HANDLING SKILLS WORKSHEET



Student \_\_\_\_\_ Date \_\_\_\_\_

**Directions:** Please answer the following questions.

1. When preparing to stop, it is important to maintain control of your bicycle. To do so requires using brakes. Please describe which brake controls which wheel.
2. The \_\_\_\_\_ helps bicyclists ride over bumps and train tracks more safely because their seat is off the saddle and their feet are at \_\_\_\_\_ and \_\_\_\_\_ position.
3. Riders \_\_\_\_\_ when they look over their shoulder to see what is behind them, prior to changing lanes. Why is this skill important to master?
4. Please explain the Power Start and why a Power Start is important to bicyclists.
5. When preparing to turn right or left, or to stop, a bicyclists uses hand \_\_\_\_\_.
6. Please draw a picture below of a bicyclist signaling a left hand turn.
  
7. Please draw a picture below of a bicyclist signaling a right hand turn.
  
8. Please draw a picture below of a bicyclist signaling stop.
  
9. Why should bicyclists ride in a straight line?
10. One of the basic skills of a bicyclist is \_\_\_\_\_. Without \_\_\_\_\_, it is difficult to ride on two wheels.
11. Before taking off on a ride, a bicyclist should always wear a \_\_\_\_\_ that fits properly; make sure the \_\_\_\_\_ and \_\_\_\_\_ fit, and conduct an \_\_\_\_\_ to make sure the bicycle is safe.

# BICYCLE HANDLING SKILLS WORKSHEET



## ANSWER KEY

1. When preparing to stop, it is important to maintain control of your bicycle. To do so requires using brakes. Please describe which brake controls which wheel.

**The left brake controls the front wheel. The right brake controls the rear wheel.**

2. The \_\_\_\_\_ helps bicyclists ride over bumps and train tracks more safely because their seat is off the saddle and their feet are at \_\_\_\_\_ and \_\_\_\_\_ position.

**Ready position; pedals at 3 o'clock and 9 o'clock position.**

3. Riders \_\_\_\_\_ when they look over their shoulder to see what is behind them prior to changing lanes. Why is this skill important to master?

**Scan. Scanning allows the rider to see who/what is coming from behind.**

4. Please explain the Power Start and why a Power Start is important to bicyclists.

**While straddling the bicycle, place one foot on the ground, the other foot on the pedal in the 12 o'clock position. The rider should be standing, not sitting on the saddle. Push down on the pedal, moving it to the 6 o'clock position and push off the ground with the other foot at the same time. The rider should be standing above the saddle, coast and count to three before placing the other foot onto the other pedal. Then sit on the saddle.**

**The Power Start helps the rider begin riding in a strong and controlled manner. The Power Start can be used anytime a rider moves from a stopped position.**

5. When preparing to turn right or left, or to stop, a bicyclist uses hand \_\_\_\_\_.

**Signals**

6. Please draw a picture below of a bicyclist signaling a left hand turn.  
7. Please draw a picture below of a bicyclist signaling a right hand turn.  
8. Please draw a picture below of a bicyclist signaling stop.  
9. Why should bicyclists ride in a straight line?

**There are many situations where straight line riding is important, such as on a bike path or on a street where other people, bicyclists or cars are coming from behind or toward you.**

10. One of the basic skills of a bicyclist is \_\_\_\_\_. Without \_\_\_\_\_, it is difficult to ride on two wheels.

**Balance, Balance**

11. Before taking off on a ride, a bicyclist should always wear a \_\_\_\_\_ that fits properly, make sure the \_\_\_\_\_ and \_\_\_\_\_ fit, and conduct an \_\_\_\_\_ to make sure the bicycle is safe.

**Helmet, Helmet and Bicycle, ABC Quick Check**



# CLOSURE ACTIVITY

## Journal Writing

### Timeframe

**Beginner:** 10–15 minutes  
**Intermediate:** 10 minutes  
**Advanced:** 10 minutes

### Objectives

At the conclusion of this activity the student will be able to:

1. List and describe key concepts from Unit 2 that illustrate a clear understanding of the need to have safe bicycle handling skills as measured by providing responses to questions in journals. (Cognitive)
2. Describe how they feel about their ability to ride safely and their level of enjoyment of bicycling, as measured by providing responses to questions in journals. (Affective)

**National Standards** Standard 2  
Standard 5

**Equipment** • Journals or portfolios for each student

**Teacher Overview** This activity prompts the students to think about what they have learned during the second unit by asking questions about basic bicycle handling skills and providing written responses in journals.

**Preparation** Determine method for distributing, collecting and storing portfolios or journals before beginning this activity.

### Directions

1. Introduce this activity using the following prompt:

*We have now completed Unit 2 – “Bicycle Handling Basics.” All of the skills learned in this unit to help you better control of your bicycle and communicate with other road users. Balance, controlled braking, scanning and signaling are essential skills to master through periodic practice.*

2. Provide portfolios or journals for students to write in.
3. Choose a location where students can sit comfortably and complete assessment if completing journal writing activity in class.
4. Use the following sample questions to prompt students' thinking about the content presented in this unit.

**Q: What is the key to being able to ride a bicycle?**

**A:** Balance

**Q: Why is controlled braking a necessary skill to master?**

**A:** Controlled braking enables a bicyclist to safely stop a bicycle.



**Q: Why should hand signals be used when riding?**

**A:** Responses can include:

- Because a bicycle is a vehicle and by law needs to signal to other road users.
- So other bicyclists and drivers are aware of what you are preparing to do.

**Q: What are the hand signals for left turn, right turn, stopping?**

**A:** Left arm out straight; left arm out, elbow bent with hand up; left arm out, elbow bent with hand down.

**Q: What is the Power Start position?**

**A:** While straddling the bicycle, place one foot on the ground, the other foot on the pedal in the 12 o'clock position. The rider should be standing, not sitting on the saddle. Push down on the pedal moving it to the 6 o'clock position. Push off the ground with the other foot; similar to how one would ride a scooter. The rider should be standing above the saddle, coast and count to three before placing the other foot onto the other pedal. Then sit on the saddle.

**Q: Why is the Power Start a useful skill to know? When should it be used?**

**A:** The Power Start helps the riders begin riding in a strong and controlled manner. The Power Start can be used any time a rider moves from a stopped position.

**Q: Why is the Ready Position important to practice?**

**A:** This position allows the rider to be prepared for obstacles and to make sudden moves more safely because of the balanced position on the bicycle.

**Q: What is the Ready Position?**

**A:** Arms are extended with two fingers over brake levers. The rider is standing over the saddle, with the majority of weight over the back tire. The pedals are parallel to the ground, in the 9 o'clock and 3 o'clock position. **(Cue)**

**Cue:** two fingers

**Cue:** weight back

**Cue:** pedals parallel

### Assessment

1. Be thoughtful about assessing journal writing, particularly when asking open ended "opinion-type" questions. Not all students may enjoy bicycling and should be allowed to voice their opinions. To encourage honest answers, refrain from grading thoughts and opinions. However, this should not be an excuse for not learning the material.
2. Consider assessing writing skills and integrate literacy (spelling, use of correct grammar and complete sentences, etc.) in journal writing. Some teachers may want to specify length of answers for specific questions (e.g., answer must be at least two sentences).

### Safety

None

**Differentiating  
Instruction**

**All levels**

- Choose questions that are appropriate for the age and ability level of students.
- Some students may need to share their answers verbally with a teacher if they have difficulty writing.
- Some students may need the teacher or an aide to read the questions.

**Best Practices**

1. Complete this activity in classroom settings, health classes or science classes if cross-curricular units are planned or to maximize riding time in physical education class.
2. Assign the journal writing for Unit 2 as homework to maximize riding time in physical education class.





# UNIT 3

## Emergency Bicycle Handling Skills

### OBJECTIVES

At the conclusion of this unit the student will be able to:

1. Describe emergency bicycle handling as measured by completion of the *Emergency Bicycle Handling* worksheet. (Cognitive)
2. Demonstrate exceptional or reliable hazard-avoidance as measured by the hazard-avoidance rubric. (Psychomotor)
3. Demonstrate exceptional or reliable Quick Stop as measured by the quick stop rubric. (Psychomotor)
4. Demonstrate an exceptional or reliable Instant Turn as measured by the Instant Turn rubric. (Psychomotor)
5. Demonstrate exceptional or reliable social behavior as measured by the social behavior rubric. (Affective)
6. Describe key concepts from Unit 3, hazard-avoidance, Quick Stop and Instant Turn, as measured by completion of the *Emergency Skills* worksheet. (Cognitive)
7. List and describe key concepts from Unit 3 that illustrate a clear understanding of the need to have emergency bicycle handling skills as measured by providing responses to questions in journals. (Cognitive)

## NATIONAL STANDARDS FOR K-12 PHYSICAL EDUCATION

### Standard 1

The physically literate individual demonstrates competency in a variety of motor skills and movement patterns.

### Standard 2

The physically literate individual applies knowledge of concepts, principles, strategies and tactics related to movement and performance.

### Standard 3

The physically literate individual demonstrates the knowledge and skills to achieve and maintain a health-enhancing level of physical activity and fitness.

### Standard 4

The physically literate individual exhibits responsible personal and social behavior that respects self and others.

### Standard 5

The physically literate individual recognizes the value of physical activity for health, enjoyment, challenge, self-expression and/or social interaction.



#### Cue:

Stop on a dime

## KEY VOCABULARY/TERMS

**Hazard Avoidance:** Also referred to as Rock Dodge, Serpentine or Slalom is a skill to teach the bicyclist how to avoid roadway hazards without swerving wildly perhaps into traffic.

**Instant Turn:** Is a skill that enables the bicyclist to make a very quick turn when there is neither time nor the room for a normal turn.

**Quick Stop/Emergency Stop:** Is a skill that enables the bicyclist to stop very quickly in a short distance. The bicyclist applies both brakes while moving his/her body back and low over the rear tire. This position lowers the rider's center of gravity and puts more weight over the rear wheel, both of which help keep the rider from flying over the handlebars. **(Cue)**

## ACTIVITIES

Each unit should include three types of activities: introduction, skill-based with assessments and closure. In some cases, more than one activity option is offered for the introduction and closure; choose the appropriate activities that fit into your allotted class time when developing your lesson plans. If class time is too short to allow for all three types of activities, focus your lesson on the skill-based activities.

**Introduction:** The following activity can be used to introduce this unit of learning.

- Walk & Share

**Skill-Based with Assessments:** Each skill-based activity is associated with an assessment to measure student knowledge and application of the identified skill. Depending on the amount of class time available and the skill level of students, more than one of the following skill-based activities may be completed during one class. All of the skill-based activities are considered essential in creating the foundation for safe bicycling. Regardless of skill level and/or if students have learned this material in previous years, all skill-based activities in this unit should be completed before moving to the next unit. This will ensure that students have the safety knowledge and basic skills necessary to practice safe bicycling behaviors.

- Hazard-Avoidance
- Quick Stop
- Instant Turn

**Closure:** The following activities can be used to conclude this unit of learning. If desired, these activities can be assigned as homework. Choose which best fits the needs of your students and class.

- Walk & Share
- Journal writing

### EQUIPMENT NEEDED

- Helmets
- Head barriers
- Bicycles
- Bicycle pump
- Allen wrench
- Red floor tape
- Cones, domes, polypots or chalk to mark riding course
- Pencils
- Emergency Bicycle Handling worksheet
- Emergency Skills worksheet
- Student journals
- Stop signs

### CROSS-CURRICULAR ACTIVITIES

#### Language Arts

- Journal writing





# INTRODUCTION ACTIVITY

## Walk & Share / Emergency Bicycle Handling

<b>Timeframe</b>	<b>Beginner:</b> 5-7 minutes <b>Intermediate:</b> 5-7 minutes <b>Advanced:</b> 5-7 minutes
<b>Objective</b>	At the conclusion of the activity the student will be able to: <ol style="list-style-type: none"><li>1. Describe emergency bicycle handling as measured by completion of the <i>Emergency Bicycle Handling</i> worksheet (Cognitive)</li></ol>
<b>National Standards</b>	Standard 2 Standard 4
<b>Equipment</b>	<ul style="list-style-type: none"><li>• <i>Emergency Bicycle Handling</i> worksheet</li><li>• Pencils</li></ul>
<b>Teacher Overview</b>	This activity prompts students to begin thinking about emergency bicycle riding skills by asking questions about what they think are emergency riding skills. Walking while discussing the questions, will initiate peer discussion about emergency bicycle riding skills and keep students moving.
<b>Preparation</b>	Make appropriate number of copies of <i>Emergency Bicycle Handling</i> worksheet.
<b>Directions</b>	<ol style="list-style-type: none"><li>1. Introduce this activity using the following prompt: <i>Today, we will be learning about some emergency bicycle handling skills. These skills are important to be able to quickly perform in an emergency situation.</i></li><li>2. Divide students into groups of two or three.</li><li>3. Ask students to walk the perimeter of the gym while answering the questions on the <i>Emergency Bicycle Handling</i> worksheet. Instruct students they may need to stop to write a quick answer, but should continue moving as much as possible or have them write the answers when the walking is completed.</li><li>4. Instruct students to stop when the whistle blows and be prepared to share something they discussed with their partner(s).</li></ol>

**Assessment**

1. Successful completion of the *Emergency Bicycle Handling* worksheet.

**Safety**

1. Do not let students run or walk too quickly if carrying pencils.

**Differentiating Instruction**

**Intermediate and Advanced**

- Set up lanes that students need to travel in. Include stop signs and intersections.

**Best Practice**

1. Complete this activity when weather prevents riding outdoors.



# EMERGENCY BICYCLE HANDLING WORKSHEET

## ANSWER KEY



1. What kinds of emergencies might you encounter on a bicycle?

**Responses include:**

**Car turning in front of you**

**Rock, hole, etc. in the riding path that should be avoided**

**Car door opening in front of you**

**Dog running into the street directly in front of you**

**Other answers may be accepted.**

2. What types of things should you know how to do on your bicycle in case there is an emergency?

**Responses include:**

**Turn left or right quickly**

**Stop quickly**

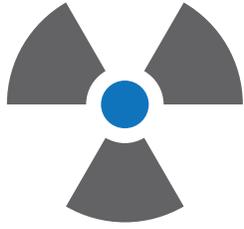
**Maneuver the bicycle around an obstacle or hazard**

3. Why is it important to practice emergency bicycle handling skills?

**You need to know what to do and be able to do it without much time for thinking.**

4. If you are in an emergency situation, what is the most important thing that you could do to prevent a brain injury?

**Wear a bicycle helmet**



# SKILL-BASED ACTIVITY

## Hazard Avoidance

### Timeframe

**Beginner:** 10 -15 minutes

**Intermediate:** 10 minutes

**Advanced:** 5-7 minutes

### Objectives

At the conclusion of this activity the student will be able to:

1. Demonstrate exceptional or reliable hazard-avoidance as measured by the hazard-avoidance rubric. (Psychomotor)
2. Demonstrate exceptional or reliable social behavior as measured by the social behavior rubric. (Affective)

**National Standards** Standard 1  
Standard 2  
Standard 3  
Standard 4

### Equipment

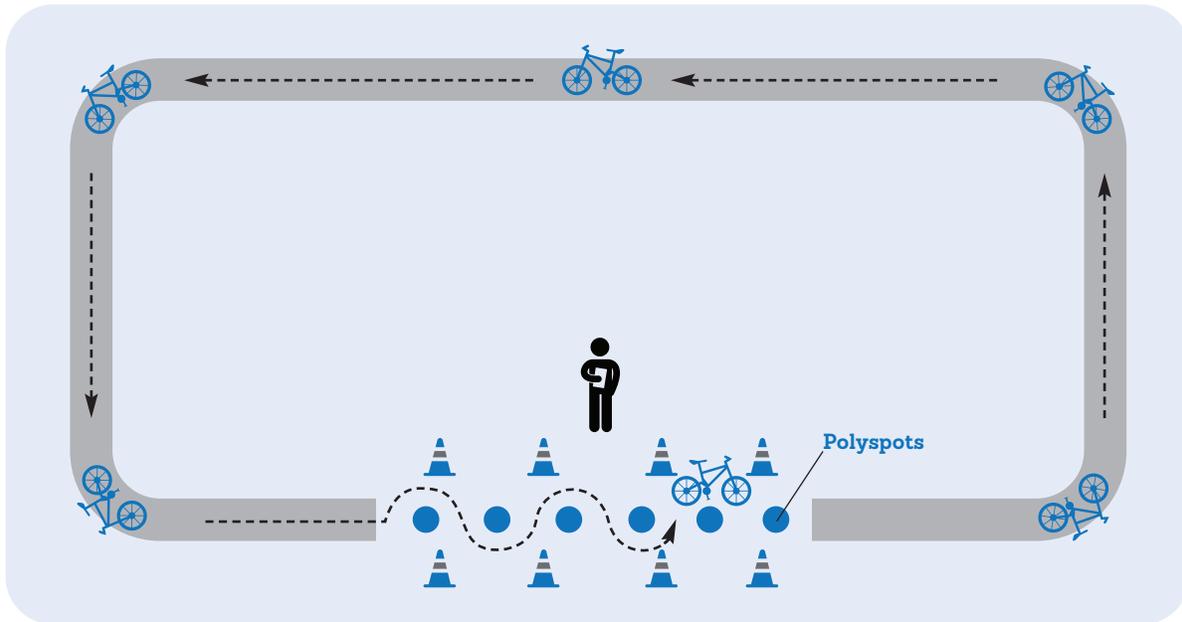
- Helmets
- Head barriers
- Bicycles
- Bicycle pump
- Allen wrench
- Cones, domes, polypots or chalk to mark riding course
- Red floor tape

**Teacher Overview** This activity teaches and/or strengthens the emergency bicycle handling skill of hazard-avoidance in a limited space. The most important aspect of this skill is to avoid the obstacle with the front tire. If the front tire hits an object, a fall or loss of control of the bicycle is very common. This skill helps students strengthen balance and bicycle handling. This activity can easily be adapted to challenge students with more advanced riding skills by moving the objects closer together.

### Preparation

1. Designate a riding course that enables the teacher to see the students at all times. This will enable students to ride throughout the class period, even when they are not performing skills.
2. Set up a “chute” using cones, to indicate where the student will perform the skill and the teacher will conduct the assessment. This area should also serve as a teaching station in which the skill will be demonstrated for the students and where students will return when instructed.
3. Within the chute, place 8-10 cones, domes or polypots about one bicycle length apart in a straight line. Refer to Differentiating Instruction for suggestions on set up for varying skill levels.

Diagram: Hazard-Avoidance Course



4. If bicycles have both front and rear brakes: Wrap the left handle of the bicycle with red floor tape to discourage students from using the front brake, until proper braking skill is taught.
5. Practice the hazard-avoidance skill before demonstrating to students.

### Directions

1. Introduce this activity using the following prompt:  
*You can encounter many different types of hazards when you are riding a bicycle such as a rock, a hole, a pile of glass etc. If you were to ride up to one of these hazards you would ride around them. But what if you had very little space in which to ride around the obstacle? Knowing how to avoid a hazard in a limited space is an important emergency bicycle handling skill. The most important aspect of this skill is to avoid the obstacle with the front tire. If the front tire were to hit something, a fall or loss of control of the bicycle is very common. So today, we will be practicing hazard-avoidance.*
2. Use the following sample questions to prompt students' thinking about the content in this activity.

**Q: What types of obstacles do you encounter when you ride your bicycle?**

**A:** Any of the following:

- Railroad tracks
- Potholes
- Storm drains
- Gravel
- Wet leaves
- Other responses may be accepted

**Q: What do you do when you come across a rock or a pothole in the road?**

**A:** Turn and avoid hitting it with your front wheel

**Q: What could be dangerous about not avoiding obstacles in the road?**

**A:** Any of the following:

- Lose control and fall
- Fly over the handlebars
- Get a flat tire
- Other responses may be accepted

**Q: What could be dangerous about avoiding obstacles in the road?**

**A:** You could veer the bicycle too far and enter another lane where there may be traffic.



3. Complete the following steps #4-10 if Helmet Fit and ABC Quick Check have not been completed as part of the current day's lesson; otherwise proceed to step #11.
4. Divide students into groups of two or three.
5. Instruct students to fit helmets and have partner(s) check if the helmet is fitted correctly.
6. Instruct students to retrieve bicycles according to number assigned.
7. Instruct one student to complete the ABC Quick Check while the other student observes to ensure that the check was completed properly, and to provide prompts if an item was missed.
8. Switch roles so the other partner(s) completes the ABC Quick Check.
9. Instruct pairs to proceed to the riding area to meet teacher after students have successfully completed the helmet fit and ABC Quick Check.
10. Inspect helmets and instruct students to proceed on the riding course for the 'Check' of the ABC Quick Check and when finished return to the teaching station.
11. Explain and demonstrate the hazard-avoidance skill to students in the teaching station, reinforcing the following points. Riders should:
  - Ride in a straight line until they are very close to the obstacle (rock, hole, etc.).
  - Turn the handlebars quickly just before the bicyclist gets to the obstacle, so the wheel goes around the obstacle.
  - Steer the bicycle to the other direction quickly.
12. Inform students that the turning of the bicycle should NOT result in a large, sweeping turn; their bodies should not lean; and only the handlebar and front tire should turn.
13. Remind students that the entire maneuver takes just a split second.
14. Instruct students to begin riding the designated course with a power start.

15. Instruct students to perform the Rock Dodge in the ready position and at a moderate speed, only upon entering the chute.
16. Provide feedback to students so they can improve their performance.
17. Instruct students to repeat activity steps #14 & 15 at a slow speed.
18. Instruct students should repeat activity steps #14 & 15 at a fast speed.

**Assessment**

1. Assess hazard-avoidance of each student using the following rubric.

**PERFORMANCE RUBRIC: HAZARD AVOIDANCE** 

Exceptional	Reliable	Inconsistent	Struggling/ Survival
<p>Student is able to quickly and safely maneuver the front wheel around the obstacle, by turning handlebars quickly one direction and then the other, without creating a large sweeping turn;</p> <p>Only the front handlebar turns (small arc) and the back tire may go over the obstacle or on the other side (either is appropriate);</p> <p>Student is able to stay seated and maintain balance throughout this maneuver.</p>	<p>Student is able to quickly and safely maneuver the front wheel around the obstacle, by turning handlebars quickly one direction and then the other;</p> <p>Student may create too large of a turn in the process, resulting from overturning;</p> <p>The back tire may go over the obstacle or on the other side (either is appropriate);</p> <p>Student is able to stay seated, but may have some trouble with balance during this maneuver.</p>	<p>Student is able to dodge the obstacle, but does so slowly and/or less safely;</p> <p>There is a large, sweeping turn during the maneuver due to overturning the front wheel;</p> <p>The front and back tire may go over the obstacle; Student has difficulty with balance during this maneuver (may need to put feet down) and may or may not remain seated.</p>	<p>Student is unable to control the bike well enough to perform a Rock Dodge and rides over the obstacle;</p> <p>Student may need more space in order to perform this maneuver, and makes very wide sweeping turns.</p>

2. Assess the performance of social behavior for each student using the following rubric.

PERFORMANCE RUBRIC: SOCIAL BEHAVIOR 

Exceptional	Reliable	Inconsistent	Struggling/ Survival
<p>Student is respectful toward classmates, teacher, &amp; equipment;</p> <p>Student receives and uses feedback from teacher and peers in a courteous manner;</p> <p>Student participates fully, without teacher prompting or supervision;</p> <p>Student is able to work cooperatively and productively with classmates, including during peer assessments;</p> <p>Student perseveres, even through difficult skills/activities, and maintains a positive attitude;</p> <p>Student is committed to learning;</p> <p>Student is committed to engaging in cycling in a safe manner, and keeping all classmates safe during the cycling unit.</p>	<p>Student is respectful toward classmates, teacher, &amp; equipment;</p> <p>Student receives and uses feedback from teacher and peers in a courteous manner;</p> <p>Student participates fully, but needs some teacher prompting and/or supervision;</p> <p>Participates in most class activities at an appropriate and productive level;</p> <p>Student is most often able to work cooperatively and productively with classmates, including during peer assessments;</p> <p>Student is able to work hard and not get frustrated with setbacks;</p> <p>Student is committed to learning;</p> <p>Student is committed to engaging in cycling in a safe manner, and keeping all classmates safe during the cycling unit.</p>	<p>Student may not always be respectful toward classmates, teacher, &amp; equipment;</p> <p>Student may listen to feedback from teacher or peers, but may not attempt and/or have difficulty applying it;</p> <p>Student requires some teacher supervision, but does exhibit some self-control at times;</p> <p>Student demonstrates the ability to work cooperatively and productively with classmates, but may need teacher direction or supervision;</p> <p>Student participates in most class activities;</p> <p>Student is willing to try, but may get frustrated with setbacks, and pout and/or verbalize frustration;</p> <p>Student may fluctuate between riding safely and unsafely at times.</p>	<p>Student may struggle with being respectful toward classmates, teacher, &amp; equipment and/or show anger and/or blame others for cycling mishaps;</p> <p>Student does not listen to feedback from teacher or peers, and does not attempt to apply it;</p> <p>Student requires ongoing supervision and does not ride safely;</p> <p>Student may be unprepared and show very little interest in learning or the activity;</p> <p>Student becomes frustrated easily and may quit participating.</p>

## Safety



1. Follow the 2-2-2-2 Rule (2 wheels on the ground; 2 feet on the pedals; 2 hands on the handlebars; 2 fingers on the brake levers) while riding the bicycle.
2. Use the rear brake only to stop the bicycle, until the skill level advances to be able to safely use the front brake also.
3. Instruct students to ride the bicycles on the designated course and demonstrate the skill components in the “chute.”
4. Instruct students to keep at least three-bikes-lengths between each rider.

## Differentiating Instruction

### Beginner

- Make the distance between the cones/domes/polyspots stations from one bicycle length to at least two bicycle lengths or more, if necessary.

### Intermediate

- Decrease the distance between the cones/domes/polyspots stations from one bicycle length to one-half a bicycle length.

### Advanced

- Increase the difficulty by instructing students to avoid the obstacle with front tire passing on one side of the object and the rear tire passing on the other side.

## Best Practices



1. Provide a discreet opportunity and safe environment for students to share information pertaining to their ability and comfort level for riding a bicycle.
2. Always complete the Helmet Fit and ABC Quick Check at the beginning of every class in which the students will be riding. The use of peers/partners to practice, inspect, and correct each other will make the most efficient use of class time and reinforce bicycle safety skills. This should not replace teacher assessment.
3. Review the three-bicycles-length rule to promote safe riding. The three-bicycles-length rule is a reminder of keeping a safe distance between bicyclists while riding single-file. To help maintain proper spacing, have a marker on the course that allows students to see when it is their turn to go: when the person in front of them gets to the marker, the next student may start riding.



# SKILL-BASED ACTIVITY

## Quick Stop

### Timeframe

**Beginner:** N/A  
**Intermediate:** 20 minutes  
**Advanced:** 15 minutes

### Objectives

At the conclusion of this activity the student will be able to:

1. Demonstrate an exceptional or reliable Quick Stop as measured by the hazard-avoidance rubric. (Psychomotor)
2. Demonstrate exceptional or reliable social behavior as measured by the social behavior rubric. (Affective)

**National Standards** Standard 1  
Standard 2  
Standard 3  
Standard 4

### Equipment

- Helmets
- Head barriers
- Bicycles
- Bicycle pump
- Allen wrench
- Cones, domes, polypots or chalk to mark riding course
- Red floor tape

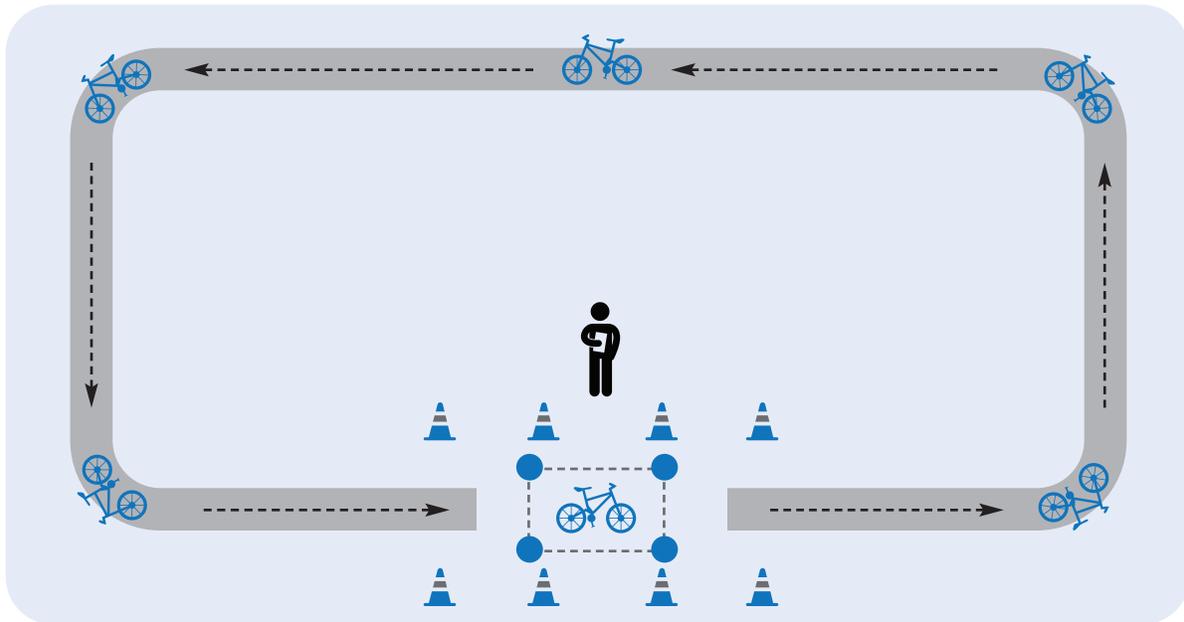
### Teacher Overview

This activity teaches and/or strengthens the emergency bicycle handling skill of stopping quickly in a limited space. Learning to stop a bicycle in a controlled manner is one of the most important safety maneuvers that can be learned. A typical braking maneuver tends to use more rear braking power, often resulting in a skid. The drawback to this type of braking is that it requires a greater braking distance to stop and the rider does not have as much control over the bicycle. The quick stop enables the rider to make an immediate stop, by using both the front and rear brakes and requires a much shorter braking distance.

### Preparation

1. Designate a riding course that enables the teacher to see the students at all times. This will enable students to ride throughout the class period, even when they are not performing skills.
2. Set up a “chute” using cones, to indicate where the student will perform the skill and the teacher will conduct the assessment. This area should also serve as a teaching station in which the skill will be demonstrated for the students and where students will return when instructed.
3. Within the chute, place 4 cones, domes or polypots creating a square that is the length of about one bicycle.
4. Practice the Quick Stop skill before demonstrating to students.

Diagram: Quick Stop Course



**Directions**

1. Introduce this activity using the following prompt:

*Learning to stop a bicycle in a controlled manner is one of the most important safety maneuvers that can be learned. A typical braking maneuver tends to use more rear braking power, often resulting in a skid. The drawback is that it requires a greater braking distance to stop and the rider does not have as much control over the bicycle. This type of braking would not work well if you had to stop in an emergency without a lot of room. So today, we will be learning about the Quick Stop. The Quick Stop enables the rider to make an immediate stop, by using both the front and rear brakes and requires a much shorter braking distance.*

2. Use the following sample questions to prompt students' thinking about the content in this activity.

**Q: Why might you have to stop suddenly on a bicycle?**

**A:** Any of the following:

- A vehicle turns in front of you
- A child or dog runs out in front of you
- Other responses may be accepted

**Q: If you have ever stopped suddenly, what did it feel like?**

**A:** Any of the following:

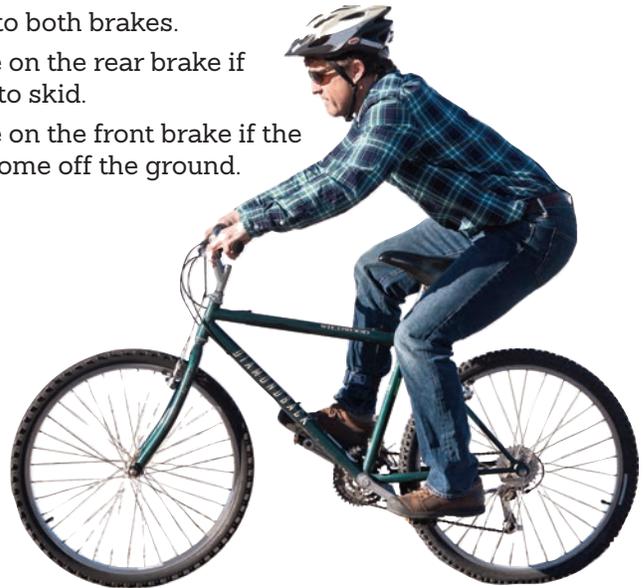
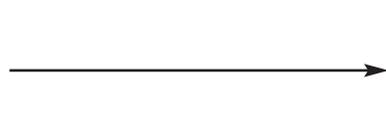
- Like I might fly over the handlebars
- Out of control
- Like I might fall
- Other responses may be accepted

3. Complete the following steps #4-10 if Helmet Fit and ABC Quick Check have not been completed as part of the current day's lesson; otherwise proceed to step #11.



4. Divide students into groups of two or three.
5. Instruct students to fit helmets and have partner(s) check if the helmet is fitted correctly.
6. Instruct students to retrieve bicycles according to number assigned.
7. Instruct one student to complete the ABC Quick Check while the other student observes to ensure that the check was completed properly and to provide prompts if an item was missed.
8. Switch roles so the other partner(s) completes the ABC Quick Check.
9. Instruct pairs to proceed to the riding area to meet teacher after students have successfully completed the helmet fit and ABC Quick Check.
10. Inspect helmets and instruct students to proceed on the riding course for the 'Check' of the ABC Quick Check and when finished return to the teaching station.
11. Explain and demonstrate the Quick Stop skill to students in the teaching station, reinforcing the following points. Riders should:
  - Position body weight over the rear tire. The position is similar to the ready position, but more body weight should be over the rear tire. This is critical, so the bicyclist will not flip over the handlebars.
  - Apply equal pressure to both brakes.
  - Decrease the pressure on the rear brake if the rear wheel begins to skid.
  - Decrease the pressure on the front brake if the rear wheel begins to come off the ground.

### Emergency Quick Stop



12. Instruct students to jog, next to the bicycle and apply just the rear brake. Observe how the bicycle stops.
13. Instruct students to jog next to the bicycle, apply just the front brake. Observe how the bicycle stops.
14. Instruct students to jog next to the bicycle, and equally apply both the front and rear brakes. Observe how the bicycle stops. (Red floor tape is taken off of front brake to teach this skill.)

**Cue:**

Stop on a dime

- Instruct students to begin riding the designated course with a power start.
- Instruct students to perform the Quick Stop and stop within the square in the chute. **(Cue)**
- Provide more practice opportunities by instructing students to ride multiple laps around the designated riding course. While students are riding, blow a whistle to signal students to perform the Quick Stop and then continue riding.

**Assessment**

- Assess Quick Stop of each student using the following rubric.

**PERFORMANCE RUBRIC: QUICK STOP**

Exceptional	Reliable	Inconsistent	Struggling/ Survival
<p>Student is able to stop quickly and maintain balance (body back over rear tire) so that she can then continue riding without placing her feet on the ground;</p> <p>Student uses equal pressure on both front and rear brakes;</p> <p>Student is able to judge when to apply more or less pressure to one brake, given the situation (rear wheel skidding or rear wheel leaving the ground).</p>	<p>Student is able to stop quickly and maintain balance (body back over rear tire) on most attempts;</p> <p>Student may not be able to maintain balance well enough after stopping that she can then continue riding, without placing her feet on the ground;</p> <p>Student is able to use equal pressure on both front and rear brakes;</p> <p>Student may have difficulty judging when to apply more or less pressure on one brake, given the situation (rear wheel skidding or rear wheel leaving the ground).</p>	<p>Student is able to stop, but not quickly enough for an emergency situation;</p> <p>Student has difficulty maintaining balance and needs to put her feet on the ground;</p> <p>Student may not be able to keep body weight over back tire.</p> <p>Student does not fully understand how to apply equal pressure on both brakes, and typically has more pressure on one brake, causing the bike to skid or the rear wheel to leave the ground.</p>	<p>Student is unable to perform a Quick Stop and must continue to work on controlled braking;</p> <p>Student may not understand when it is appropriate to use the front brake, and does so in an unsafe manner.</p>

2. Assess the performance of social behavior for each student using the following rubric.

## PERFORMANCE RUBRIC: SOCIAL BEHAVIOR

Exceptional	Reliable	Inconsistent	Struggling/ Survival
<p>Student is respectful toward classmates, teacher, and equipment;</p> <p>Student receives and uses feedback from teacher and peers in a courteous manner;</p> <p>Student participates fully, without teacher prompting or supervision;</p> <p>Student is able to work cooperatively and productively with classmates, including during peer assessments;</p> <p>Student perseveres, even through difficult skills/activities, and maintains a positive attitude;</p> <p>Student is committed to learning;</p> <p>Student is committed to engaging in bicycling in a safe manner, and keeping all classmates safe during the bicycling unit.</p>	<p>Student is respectful toward classmates, teacher, and equipment;</p> <p>Student receives and uses feedback from teacher and peers in a courteous manner;</p> <p>Student participates fully, but needs some teacher prompting and/or supervision;</p> <p>Participates in most class activities at an appropriate and productive level;</p> <p>Student is most often able to work cooperatively and productively with classmates, including during peer assessments;</p> <p>Student is able to work hard and not get frustrated with setbacks;</p> <p>Student is committed to learning;</p> <p>Student is committed to engaging in bicycling in a safe manner, and keeping all classmates safe during the bicycling unit.</p>	<p>Student may not always be respectful toward classmates, teacher, and equipment;</p> <p>Student may listen to feedback from teacher or peers, but may not attempt and/or have difficulty applying it;</p> <p>Student requires some teacher supervision, but does exhibit some self-control at times;</p> <p>Student demonstrates the ability to work cooperatively and productively with classmates, but may need teacher direction or supervision;</p> <p>Student participates in most class activities;</p> <p>Student is willing to try, but may get frustrated with setbacks, and pout and/or verbalize frustration;</p> <p>Student may fluctuate between riding safely and unsafely at times.</p>	<p>Student may struggle with being respectful toward classmates, teacher, and equipment and/or show anger and/or blame others for cycling mishaps;</p> <p>Student does not listen to feedback from teacher or peers, and does not attempt to apply it;</p> <p>Student requires ongoing supervision and does not ride safely;</p> <p>Student may be unprepared and show very little interest in learning or the activity;</p> <p>Student becomes frustrated easily and may quit participating.</p>

## Safety



1. Follow the 2-2-2-2 Rule (2 wheels on the ground; 2 feet on the pedals; 2 hands on the handlebars; 2 fingers on the brake levers) while riding the bicycle.
2. Instruct students to ride the bicycles on the designated course and demonstrate the skill components in the “chute.”
3. Instruct students to keep at least three-bikes-lengths between each rider.

## Differentiating Instruction

### Adapted and Beginner

- This skill is difficult to perform. It should be taught only to intermediate/advanced level riders.
- Continue to practice controlled braking.

### Intermediate

- When performing the quick stop, students can place one or both feet on the ground after stopping and then continue riding.

### Advanced

- When performing the quick stop, students should be able to stop without placing feet on the ground and then continue riding.

## Best Practices



1. Provide a discreet opportunity and safe environment for students to share information pertaining to their ability and comfort level for riding a bicycle.
2. Always complete the Helmet Fit and ABC Quick Check at the beginning of every class in which the students will be riding. The use of peers/partners to practice, inspect, and correct each other will make the most efficient use of class time and reinforce bicycle safety skills. This should not replace teacher assessment.
3. Review the three-bicycles-length rule to promote safe riding. The three-bicycles-length rule is a reminder of keeping a safe distance between bicyclists while riding single-file. To help maintain proper spacing, have a marker on the course that allows students to see when it is their turn to go: when the person in front of them gets to the marker, the next student may start riding.



# SKILL-BASED ACTIVITY

## Instant Turn

### Timeframe

**Beginner:** N/A  
**Intermediate:** 20 minutes  
**Advanced:** 15 minutes

### Objectives

At the conclusion of this activity the student will be able to:

1. Demonstrate an exceptional or reliable Instant Turn as measured by the hazard-avoidance rubric. (Psychomotor)
2. Demonstrate exceptional or reliable social behavior as measured by the social behavior rubric. (Affective)

### National Standards

Standard 1  
Standard 2  
Standard 3  
Standard 4

### Equipment

- Helmets
- Head barriers
- Bicycles
- Bicycle pump
- Allen wrench
- Cones, domes, polypots or chalk to mark riding course
- Red floor tape

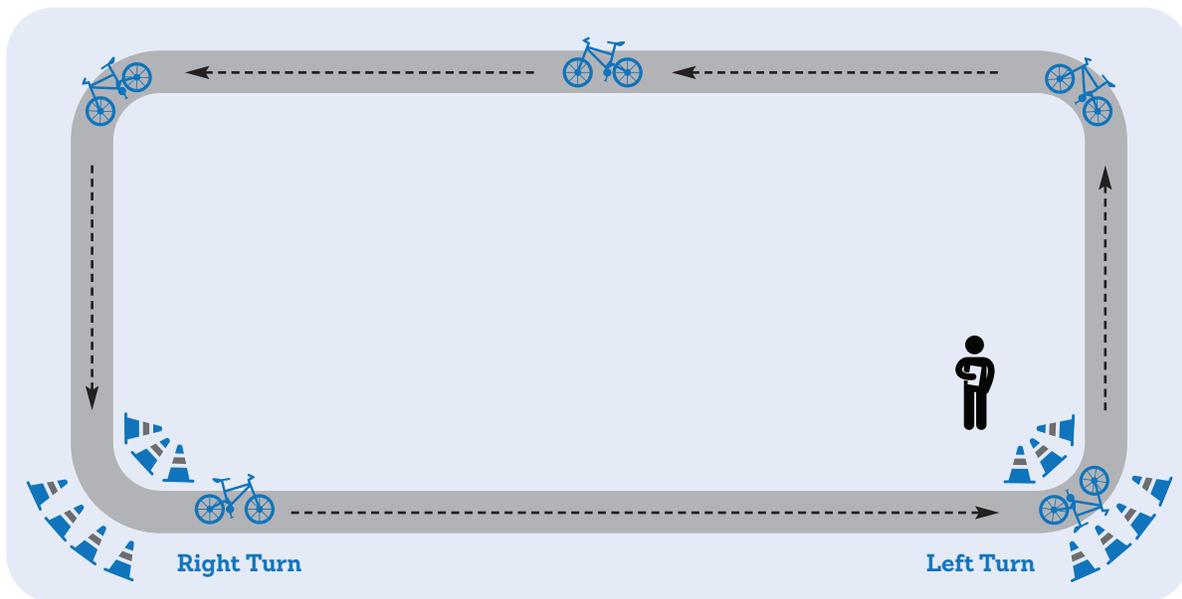
### Teacher Overview

This activity teaches and/or strengthens the emergency bicycle handling skill of turning quickly in a limited space. This skill can be difficult to learn. The instant turn is a very subtle movement. When done correctly the rider may briefly feel a loss of balance into the turn.

### Preparation

1. Designate a riding course that enables the teacher to see the students at all times. This will enable students to ride throughout the class period, even when they are not performing skills.
2. Set up a “chute” using cones, to indicate where the student will perform the skill and the teacher will conduct the assessment. This area should also serve as a teaching station in which the skill will be demonstrated for the students, and where students will return when instructed.
3. At the end of the chute, ensure that students can safely turn right or left.
4. If bicycles have both front and rear brakes: Wrap the left handle of the bicycle with red floor tape to discourage students from using the front brake, until proper braking skill is taught.
5. Practice the Instant Turn skill before demonstrating to students.

Diagram: Instant Turn Course



**Directions**

1. Introduce this activity using the following prompt:  
*Learning to turn a bicycle very quickly, in a small space can be a very important skill to use in an emergency, such as a car turning in front of you, when you would be unable to perform a normal turn. This skill can be difficult to learn. The Instant Turn is a very subtle movement. When done correctly you may briefly feel a loss of balance into the turn.*

2. Use the following sample questions to prompt students' thinking about the content in this activity.

**Q: Can you think of a time when you might need to turn very quickly to avoid a crash?**

**A:** Any of the following:

- A vehicle turns in front of you
- A car door opens in front of you
- Other responses may be accepted

**Q: What would you do if a car turned in front of you at an intersection?**

**A:** Either response

- Instant Turn
- Quick Stop



3. Complete steps #4-10 that follow, if Helmet Fit and ABC Quick Check have not been completed as part of the current day's lesson, otherwise proceed to step #11.

4. Divide students into groups of two or three.

5. Instruct students to fit helmets and have partner(s) check if the helmet is fitted correctly.

6. Instruct students to retrieve bicycles according to number assigned.

7. Instruct one student to complete the ABC Quick Check while the partner observes to ensure that the check was completed properly, and to provide prompts if an item was missed. Switch roles.
8. Instruct pairs to proceed to the riding area to meet teacher after students have successfully completed the helmet fit and ABC Quick Check.
9. Inspect helmets and instruct students to proceed on the riding course for the 'Check' of the ABC Quick Check and when finished return to the teaching station.
10. Explain and demonstrate the Instant Turn skill to students in the teaching station, reinforcing the following points. Riders should:
  - Turn the front wheel the opposite way that you want to turn. This will cause the rider and the bicycle to automatically lean in the direction the rider wants to turn (this is a bit counterintuitive).
  - Then quickly turn the wheel in the direction that you want to go. This will be the direction that your body and bicycle are already leaning.
11. Instruct students to begin riding the designated course with a power start.
12. Instruct students to turn right, using the technique for a typical right turn, at the end of the chute and continue riding the designated riding course.
13. Instruct students to turn left, using the technique for an Instant Turn, at the end of the chute and continue riding the designated riding course and return to the teaching station.
14. Ask students to comment on how each turn felt different.
15. Instruct students to reverse the direction that they have been riding the course and repeat steps #12-15.

**Assessment**

1. Assess Instant Turn of each student using the following rubric.

**PERFORMANCE RUBRIC: INSTANT TURN** 

Exceptional	Reliable	Inconsistent	Struggling/ Survival
<p>Student is able to correctly and safely perform the Instant Turn, and can do so in a quick manner;</p> <p>Student first turns front wheel in the opposite direction, before turning in the direction he wants to travel, and he can do this at an appropriate speed;</p> <p>Student is able to maintain balance after the turn, and can continue riding without problems.</p>	<p>Student is able to correctly and safely perform the Instant Turn, but may perform this maneuver more slowly;</p> <p>Student first turns front wheel in the opposite direction, before turning in the direction he wants to travel;</p> <p>Student is able to maintain balance after the turn, and can continue riding without problems.</p>	<p>Student has difficulty performing the Instant Turn, and cannot turn the wheel in the opposite direction of the turn unless riding very slowly;</p> <p>Student may have difficulty maintaining balance after the turn, and may not be able to continue riding out of the turn.</p>	<p>Student is unable to perform an Instant Turn, and should continue working on making normal speed right and left hand turns;</p> <p>Student may not understand when it is appropriate to make an Instant Turn, and does so in an unsafe manner.</p>

2. Assess the performance of social behavior for each student using the following rubric.

PERFORMANCE RUBRIC: SOCIAL BEHAVIOR 

Exceptional	Reliable	Inconsistent	Struggling/ Survival
<p>Student is respectful toward classmates, teacher, and equipment;</p> <p>Student receives and uses feedback from teacher and peers in a courteous manner;</p> <p>Student participates fully, without teacher prompting or supervision;</p> <p>Student is able to work cooperatively and productively with classmates, including during peer assessments;</p> <p>Student perseveres, even through difficult skills/activities, and maintains a positive attitude;</p> <p>Student is committed to learning;</p> <p>Student is committed to engaging in bicycling in a safe manner, and keeping all classmates safe during the bicycling unit.</p>	<p>Student is respectful toward classmates, teacher, and equipment;</p> <p>Student receives and uses feedback from teacher and peers in a courteous manner;</p> <p>Student participates fully, but needs some teacher prompting and/or supervision;</p> <p>Participates in most class activities at an appropriate and productive level;</p> <p>Student is most often able to work cooperatively and productively with classmates, including during peer assessments;</p> <p>Student is able to work hard and not get frustrated with setbacks;</p> <p>Student is committed to learning;</p> <p>Student is committed to engaging in bicycling in a safe manner, and keeping all classmates safe during the bicycling unit.</p>	<p>Student may not always be respectful toward classmates, teacher, and equipment;</p> <p>Student may listen to feedback from teacher or peers, but may not attempt and/or have difficulty applying it;</p> <p>Student requires some teacher supervision, but does exhibit some self-control at times;</p> <p>Student demonstrates the ability to work cooperatively and productively with classmates, but may need teacher direction or supervision;</p> <p>Student participates in most class activities;</p> <p>Student is willing to try, but may get frustrated with setbacks, and pout and/or verbalize frustration;</p> <p>Student may fluctuate between riding safely and unsafely at times.</p>	<p>Student may struggle with being respectful toward classmates, teacher, and equipment and/or show anger and/or blame others for bicycling mishaps;</p> <p>Student does not listen to feedback from teacher or peers, and does not attempt to apply it;</p> <p>Student requires ongoing supervision and does not ride safely;</p> <p>Student may be unprepared and show very little interest in learning or the activity;</p> <p>Student becomes frustrated easily and may quit participating.</p>

## Safety



1. Follow the 2-2-2-2 Rule (2 wheels on the ground; 2 feet on the pedals; 2 hands on the handlebars; 2 fingers on the brake levers) while riding the bicycle.
2. Instruct students to ride the bicycles on the designated course and demonstrate the skill components in the “chute.”
3. Instruct students to keep at least three-bicycles-lengths between each rider.

## Differentiating Instruction

### Adapted and Beginner

- This skill is difficult to perform. It should be taught only to intermediate/advanced level riders.
- Continue to practice left/right turning.

### Intermediate and Advanced

- As students are about to exit the chute, call out left or right for students to perform an Instant Turn in that direction.

## Best Practices



1. Provide a discreet opportunity and safe environment for students to share information, pertaining to their ability and comfort level for riding a bicycle.
2. Always complete the Helmet Fit and ABC Quick Check at the beginning of every class if the students will be riding. The use of peers/partners to practice, inspect, and correct each other will make the most efficient use of class time and reinforce bicycle safety skills. This should not replace teacher assessment.
3. Review the three-bicycles-length rule to promote safe riding. The three-bicycles-length rule is a reminder of keeping a safe distance between bicyclists while riding single-file. To help maintain proper spacing, have a marker on the course that allows students to see when it is their turn to go: when the person in front of them gets to the marker, the next student may start riding.



# CLOSURE ACTIVITY

## Walk & Share

### Timeframe

**Beginner:** 3-5 minutes  
**Intermediate:** 3-5 minutes  
**Advanced:** 3-5 minutes

### Objective

At the conclusion of the activity, the student will be able to:

1. Describe key concepts from Unit 3, hazard-avoidance, Quick Stop and Instant Turn, as measured by completion of the *Emergency Skills* worksheet. (Cognitive)

**National Standards** Standard 2  
Standard 4

**Equipment**

- *Emergency Bicycle Skills* worksheet
- Pencils

**Teacher Overview** This activity prompts the students to think about what they have learned during Unit 3, by asking questions about emergency bicycle handling skills. By working in groups to respond to the questions, the brainstorming will initiate peer discussion about emergency bicycle handling skills.

**Preparation** Make appropriate number of copies of *Emergency Skills* worksheet

### Directions

1. Introduce this activity using the following prompt:  
*We have now completed Unit 3 – “Emergency Bicycle Handling.” All of the skills learned in this module will help you better control your bicycle in an emergency situation. hazard-avoidance, Quick Stop and Instant Turn can be challenging skills to master and should be periodically practiced.*
2. Divide students into pairs.
3. Ask students to walk the perimeter of the gym. Explain that they will be need to answer the questions on the *Emergency Bicycle Skills* worksheet by discussing responses with their partner when walking.
4. Instruct students to stop when the whistle blows, and be prepared to share something that they discussed with their partner.

**Assessments** 1. Successful completion of the *Emergency Bicycle Skills* worksheet.

**Safety** 1. Do not let students run or walk too quickly if carrying pencils.

### Differentiating Instruction

- All levels**
- Choose appropriate questions based on skill and ability level of students.
- Intermediate and Advanced**
- Set up lanes that students need to travel in. Include stop signs and intersections.



# EMERGENCY BICYCLE SKILLS WORKSHEET



Student \_\_\_\_\_ Date \_\_\_\_\_

**Directions:** Please answer the following questions to the best of your ability.

1. \_\_\_\_\_ is used to avoid an obstacle in the path.
2. Please explain two critical elements of \_\_\_\_\_ (from question 1).
3. Sometimes, it may be necessary to perform a \_\_\_\_\_. Both \_\_\_\_\_ may be applied equally during a \_\_\_\_\_, but if a tire skids or the front wheel comes off the ground, the bicyclist may need to release pressure on one \_\_\_\_\_.
4. Please explain two critical elements of the Quick Stop.
5. Please provide two examples of when a bicyclist might need to perform an Instant Turn.
6. Please explain two critical elements of the Instant Turn.

# EMERGENCY BICYCLE SKILLS WORKSHEET

## ANSWER KEY



1. **Hazard Avoidance** is used to avoid an obstacle in the path.
2. Please explain two critical elements of **Hazard Avoidance** (from question 1).  
**Front tire avoids obstacle (rear tire can hit the obstacle)**  
**Small handlebar movements**
3. Sometimes, it may be necessary to perform a **Quick Stop**. Both **brakes** may be applied equally during a **Quick Stop**, but if a tire skids or the front wheel comes off the ground, the bicyclist may need to release pressure on one **brake**.
4. Please explain two critical elements of the Quick Stop.  
**Body position is similar to the ready position, but more body weight should be over the rear tire.**  
**Apply equal pressure to both brakes.**
5. Please provide two examples of when a bicyclist might need to perform an Instant Turn.  
**A car turns in front of them.**  
**A dog runs out in front of them.**
6. Please explain two critical elements of the Instant Turn.  
**Turn the front wheel the opposite way that you want to turn.**  
**Quickly turn the wheel in the direction that you want to go.**



# CLOSURE ACTIVITY

## Journal Writing

- Timeframe**      **Beginner:** 10-15 minutes  
**Intermediate:** 10 minutes  
**Advanced:** 10 minutes
- Objective**      At the conclusion of this activity the student will be able to:
1. List and describe key concepts from Unit 3 that illustrate a clear understanding of the need to have emergency bicycle handling skills as measured by providing responses to questions in journals. (Cognitive)
- National Standard** Standard 2
- Equipment**      • Journals or portfolios for each student
- Teacher Overview** This activity prompts the students to think about what they have learned during the Unit 3 by asking questions about emergency bicycle handling skills and providing written responses in journals.
- Preparation**      1. Determine method for distributing, collecting and storing portfolios or journals before beginning this activity.
- Directions**      1. Introduce this activity using the following prompt:
- We have now completed Unit 3 – “Emergency Bicycle Handling.” All of the skills learned in this module to help you better control of your bicycle in an emergency situation. Hazard-avoidance, Quick Stop and Instant Turn can be challenging skills to master and should be periodically practiced.*
2. Provide portfolios or journals for students to write in.
  3. Choose a location where students can sit comfortably and complete the assessment if completing the journal writing activity in class.
  4. Use the following sample questions to prompt students’ thinking about the content presented in this unit.
- Q: What are the three emergency bicycle handling skills you learned in Unit 3?**
- A:** Hazard-avoidance, Quick Stop and Instant Turn
- Q: Why are these three skills important?**
- A:** Sometimes there are situations where typical stopping or turning techniques are not possible because of time or space.

**Q: What are some situations where you would use these emergency skills?**

**A:** Responses can include:

- A car turns quickly in front of you
- You are riding with traffic to your left and there is a large rock in front of you
- A dog runs out in front of you
- Other responses may be accepted

**Q: Describe the Instant Turn technique**

**A:** Turn the front wheel the opposite way that you want to turn. This will cause you and the bicycle to automatically lean in the direction you want to turn. Then quickly turn the wheel in the direction that you want to go. This will be the direction that your body and bicycle are already leaning. You will perform the turn quickly in a very limited space.

### Assessment

1. Be thoughtful about assessing journal writing, particularly when asking open-ended “opinion-type” questions. Not all students may enjoy bicycling and should be allowed to voice their opinions. To encourage honest answers, refrain from grading thoughts and opinions. However, this should not be an excuse for not learning the material.
2. Consider assessing writing skills and integrate literacy (spelling, use of correct grammar and complete sentences, etc.) in journal writing. Some teachers may want to specify length of answers for specific questions.

### Differentiating Instruction

#### All levels

- Choose questions that are appropriate for the age and ability level of students.
- Some students may need to share their answers verbally with a teacher if they have difficulty writing.
- Some students may need the teacher or an aide to read the questions.

### Best Practices

1. Complete this activity in classroom settings, health classes or science classes if cross-curricular units are planned or to maximize riding time in physical education class.
2. Assign the journal writing for Unit 3 as homework to maximize riding time in physical education class.