WALK! BIKE! FUN! is a comprehensive curriculum that teaches safe traffic behavior through classroom activities and on-the-bike skills practice. The goals of the extensive lesson plans teach skills to children to walk and bicycle safely — building confidence and helping them stay safe, active, and healthy.
Acknowledgments

The Minnesota Walk! Bike! Fun! Pedestrian and Bicycle Safety Curriculum was developed by the Bicycle Alliance of Minnesota through a federal Safe Routes to School grant provided by the Minnesota Department of Transportation and in collaboration with the Center for Prevention at Blue Cross and Blue Shield of Minnesota. This safety curriculum was modeled using the following programs and educational materials:

- Traffic Safety Education Guide
  University of Florida, Gainesville
- Bicycle Safety Program Curriculum
- Bicycle Transportation Alliance
  Portland, Oregon
- Effective Cycling: Kids II
- League of American Bicyclists
- SafeCyclist Curriculum: Teacher's Guide 2.31
- BikeTexas

We wish to thank the many people who provided valuable information in the development and revision of this guide. We appreciate their caring dedication to the protection and enhancement of children’s lives through pedestrian and bicycle safety education.

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For additional information on promoting safe walking and bicycling, contact BikeMN at education@bikemn.org. V1.0 11.13.
Dear Educator:

Thank you for choosing “Walk! Bike! Fun! Pedestrian and Bicycle Safety Curriculum”!

This two-part curriculum is designed specifically for Minnesota’s schools and is structured to meet Minnesota education standards. Walk! Bike! Fun! will help children ages five to thirteen develop life-long skills through fun classroom activities and on-foot and on-bike skills practice. Students will learn traffic rules and regulations, the potential hazards to travelling, and handling skills needed to bike and walk effectively, appropriately and safely through their community. This curriculum is brought to you in part by the Bicycle Alliance of Minnesota (BikeMN), a statewide nonprofit organization that will provide support to help make your program a success.

Bicycle Alliance of Minnesota (BikeMN) is teaching bicyclists of all ages to safely ride and share the streets, roadways and trails with other drivers and pedestrians. BikeMN is training a statewide network of volunteer bike safety instructors to work with schools and other community partners. With the Walk! Bike! Fun! curriculum, BikeMN helps schools teach children to safely walk and bike to school.

Six great benefits to walking or biking to school:

1. **To increase academic achievement** — research shows that students who exercise before school concentrate better in class.

2. **To increase happiness** — children that engage in physical activity are more likely to be happy.

3. **To lower your carbon footprint** — a whole school committed to walking and biking can make an enormous impact on reducing carbon dioxide emissions and harmful pollutants.

4. **To help reduce traffic accidents** — the benefit of schools that teach walking and bicycling skills result in up to a forty-nine percent decrease in childhood pedestrian and bicycle collision rates.

5. **To foster independence** — children who walk or bike to school are more likely to walk to other destinations in the neighborhood.

6. **To increase physical activity** — the CDC recommends that children get sixty minutes of physical activity every day.
The Minnesota Department of Transportation (MnDOT) funded Walk! Bike! Fun! Its Safe Routes to School (SRTS) program is a national and international movement to create safe, convenient, and fun opportunities for children to bicycle and walk to and from schools. The program has been designed to increase the number of children safely walking and bicycling to schools. MnDOT’s SRTS program helps by awarding grants for infrastructure efforts to enhance safety. The program also includes non-infrastructure projects focused on safety through education and enforcement efforts. Safe Routes to School can also play a critical role in reversing the alarming increase in chronic disease linked to physical inactivity including diabetes, asthma, and obesity.

The Center for Prevention at Blue Cross and Blue Shield of Minnesota supports Walk! Bike! Fun! as part of its mission to make healthy choices possible for all Minnesotans. The Center tackles the leading causes of preventable disease—tobacco use, physical inactivity, and unhealthy eating—to increase health equity, transform communities, and create a healthier state.

The Minnesota Department of Health supports Walk! Bike! Fun! as a part of its health improvement initiatives. The Minnesota Department of Health supports all Minnesotans in leading healthier lives, raising families, and building healthier communities by preventing disease well before it starts. Walk! Bike! Fun! is a curriculum encouraging life-long physical activity skills—walking and bicycling—from an early age. This curriculum supports the Minnesota Department of Health’s health improvement efforts in communities and schools to increase the percentage of Minnesotans who are more physically active.

Your district will be one of many around the state to teach these life skills to students through physical education classes. It is a part of what we hope will be a lasting change in how students in Minnesota travel to school and around their neighborhoods.

Before teaching this curriculum, it is important to take a course on bicycle safety skills so you are confident and knowledgeable. The Bicycle Alliance of Minnesota can conduct these trainings for you. Please contact them. Much of this knowledge will be passed on to your students, and you will learn about the drills and equipment the students will use throughout the curriculum.

While a pedestrian and bicycle safety curriculum calls for commitment in teaching time, equipment, and training, children reap many benefits. The community has much to gain from the adoption of the Walk! Bike! Fun! curriculum which will encourage walking and bicycling as healthy activities. It encourages activity that improves motor skills, coordination, and balance.

A more pedestrian- and bicycle-centered transportation system will result in greater community interaction, less individual isolation, and a healthier population.

Again, thank you and we look forward to working with you.
Introduction and Benefits

Why have a pedestrian and bicycle safety curriculum?
All too often, kids are blamed for the traffic crashes in which they are involved. They are labeled careless or lacking in caution. To the contrary, young children act in a manner determined by their age and degree of development. It is essential to understand the developmental characteristics that influence a child’s behavior as a bicyclist.

Specifically, children:
- Have a narrower field of vision than adults, about one-third less.
- Cannot easily judge a car’s speed and distance.
- Assume that if they can see a car, its driver must be able to see them. However, children are easily hidden from view by parked cars and other objects.
- Cannot readily tell the direction a sound is coming from.
- May be impatient and impulsive.
- Concentrate on only one thing at a time. This is likely not to be traffic.
- Have a limited sense of danger.
- Often mix fantasy with reality.
- Imitate the (often bad) behavior of others, especially older children and adults.
- Are concrete (versus abstract) thinkers and do not extrapolate well from one situation to another.

Children between the ages of ten and fourteen have the highest rate of bicycle crashes for all age groups, a majority of crashes can be avoided through education. Walk! Bike! Fun! is a great way to engage children in learning pedestrian and bicycle safety, as well as a great way for youth to stay active and healthy. At a time when chronic disease among children and adults has reached epidemic proportions, walking and bicycling are an excellent and efficient means to meeting daily physical activity needs.

How does the community benefit?
- Increased number of well-informed pedestrians, bicyclists and ultimately, drivers.
- An adult population more likely to use bicycle transportation will reduce pollution, traffic congestion, energy consumption and increase health benefits.
- More pedestrian and bicycle centered transportation systems will likely experience greater community interaction and less isolation of the individual.
Youth use the roads for bicycling every day. Yet roads can be hazardous and children are not formally educated to skillfully maneuver on the streets. As our children get older, they also increase the distance they travel and are thus exposed to higher traffic streets. Studies show that parents grant their children a greater degree of freedom to travel from home (called home range) between the ages of ten through fourteen. These freedoms typically coincide with the move from elementary to middle school. The extensive road, and specifically on-the-bicycle lessons offered by this program are designed to increase bike ridership, physical activity, and safe and predictable riding among youth.
Overview of Pedestrian and Bicycle Safety Education

The *Walk! Bike! Fun!* Pedestrian and Bicycle Safety Curriculum consists of two units: pedestrian safety for kindergarten through third grade and bicycle safety curriculum for fourth through sixth grade. The curriculum is written with physical education teachers in mind, but may also be taught in Social Studies, Health, and Science classes.

The *Walk Fun!* unit consists of four thirty-minute lessons with optional activities for longer class periods. Of the four lessons, there are activities for every style of learner with concepts being taught through vocabulary, videos, music, exercises, signs, numbers, shapes, and culminating with a walk around the neighborhood. Each lesson meets a variety of National Physical Education Standards.

**National Physical Education Standards:**

- **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.

The *Bike Fun!* unit consists of nine thirty-minute lessons with four bonus lessons to include topics in health and physical education. The nine bicycle safety lessons meet a variety of National Physical Education Standards while the bonus lessons address a variety of National Health Education Standards. Within the bicycle safety unit there are lessons that use pictures, signs, flashcards, guest speakers, videos, bicycle helmets, and bicycles! The last two days of the unit students will be riding bicycles on a designated route with volunteers!

**Goals for the Walk! Bike! Fun! Pedestrian and Bicycle Safety Curriculum are:**

- Increase the number of students who safely walk and bicycle to school
- Increase safety of youth pedestrians and bicyclists
- Improve the lives of children by improving health, learning capacity, and independence

Whether walking with adult family members or with friends, learning basic pedestrian safety may help prevent injuries and prepare children for a lifetime of safe walking. Preventing pedestrian injuries requires a combination of approaches: engineering strategies to improve the physical environment for walking, enforcement strategies to reduce vehicle speeds and increase
WALK! BIKE! FUN!: Overview

For additional information on promoting safe walking and bicycling, contact BikeMN at education@bikemn.org.

In the Walk Fun! unit children learn how to walk safely near traffic, cross the street at a crosswalk and safely cross the street around visual barriers, and how to safely cross the street at an intersection using crossing signals and traffic signs. The last session takes the children on a fun and leisure walk through the neighborhood around the school to practice understanding of pedestrian safety.

The Bike Fun! unit consists of many activities where children on bicycles learning and practicing safe bicycle handling skills as well as traffic laws that make their biking experience more rewarding and enjoyable. Throughout the unit, students will be learning rules of the road, a quick safety check for their bicycles, how to properly fit a helmet, how to optimally pedal and brake, where to ride on the road, how to communicate with other traffic, and finally, ride bicycles through the community!

The “best practice” approach to teaching the Bike Fun! unit is team teaching with a Health, Social Studies, or Science teacher. The team teacher has four Bonus Lessons in the curriculum that are designed for the classroom to teach students about bicycling courtesy and communication, making healthy choices and having good sleeping habits, understanding peripheral vision and reaction time. In these lessons there are National Health Standards that are met and outlined in each lesson.

National Health Standards:

STANDARD 1 Students will comprehend concepts related to health promotion and disease prevention to enhance health.

STANDARD 2 Students will analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.

STANDARD 3 Students will demonstrate the ability to access valid information, products, and services to enhance health.

STANDARD 4 Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.

STANDARD 5 Students will demonstrate the ability to use decision-making skills to enhance health.

STANDARD 6 Students will demonstrate the ability to use goal-setting skills to enhance health.

STANDARD 7 Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

STANDARD 8 Students will demonstrate the ability to advocate for personal, family, and community health.
Included in the curriculum are Resource Pages that include diagrams, handouts, worksheets, bicycle fleets supplies, and equipment lists. The Resource Guide also contains additional Educational Resources (RESOURCE GUIDE PAGE 174): a list of websites dedicated to education of walking and bicycling safety and activities for your school and community. A Bicycle Rodeo (RESOURCE GUIDE PAGE 172) is one of those activities that invites all children and their parents in the community to experience safe biking drills and receive educational material about bicycle safety. The Resource Guide has everything needed for a successful launch of a pedestrian and bicycle safety unit with students enjoying the healthy activity of walking and biking to and from home and school!

**Curriculum’s History**

This curriculum is a product of evaluation of a pilot project with physical education teachers across the state and research of several other pedestrian and bicycle safety curriculums. It is based on similar successful programs implemented in Florida, Texas, and Oregon as well as resources from the Safe Routes to School National Partnership and League of American Bicyclists.

This curriculum was researched and developed by bicycle advocates and avid cyclists and reviewed by teachers, health field professionals, and transportation planners. Youth over the age of ten are travelling further, have increased mental and physical abilities and are generally allowed greater freedoms. By providing children with traffic skills, they will be safer and more confident in their travels and parents will feel more secure in their children’s desire for more independence.

Learning safe pedestrian and bicycling skills will increase the level of confidence for safe travel among young people as well as increase physical activity for healthier young people. Walking and bicycling is an excellent source of exercise for an increasingly unhealthy, inactive, and overweight youth population. Promoting walking and cycling as a means of transportation will develop a population of more active and healthy youth and later adults.
LESSON 1: Traffic and You

OVERVIEW

Educational Goal: To develop an understanding of how to walk safely near traffic.

Preparation

- Organize technology needed to play the video, making sure the sound works and the picture is clear.
- Arrange five- to ten-foot-long strips of masking tape on the floor near each wall in the room. On each of the walls, tape up one large number or shape.

Purpose

*Walk Fun!* introduces students to the lifelong skill of walking safely as part of traffic. These lessons will provide them with the necessary skills to be safe pedestrians whether walking to and from school or to the school bus stop. In this lesson students will be using a mock street simulation to learn basic pedestrian skills, and then apply these skills in various traffic situations.

Topics Covered

- Stopping at a curb or edge
- Looking left-right-left
- The best places to cross

Learning Objectives and National Physical Education Standards

At the end of this lesson, students will be able to:

1. Describe the importance of having safe walk places. (Standard 2)
2. Identify common places to walk safely. (Standard 2)
3. Define the words pedestrian, traffic, vehicle, and edge. (Standard 2)
4. Describe and demonstrate the appropriate stop-and-search method. (Standards 2, 3, and 4)
5. (Optional) Describe and demonstrate how to safely retrieve a toy from the street. (Standards 2, 3, and 4)
OVERVIEW
(CONT.)

BACKGROUND

This is a great activity to begin teaching children to distinguish left from right. More importantly, it introduces them to one of the basic components of traffic safety: stopping at an edge and searching. “Dart outs”—when a child runs into the street without looking—are one of the most common causes of crashes between children and automobiles; therefore the first lesson of this unit focuses on teaching children to stop at the edge. It is recommended that children under the age of ten do not walk alone (without an adult). Children need to be able to stop and think before they venture out into traffic. This means stopping at an edge, judging oncoming traffic and identifying the safe and appropriate time to cross the street.
Focus Point: Students will be able to define vocabulary words such as pedestrian, traffic, and edge and how they relate to being a safe, responsible walker.

Materials and Equipment
- Vocabulary cards with appropriate pictures: pedestrian, traffic, vehicle, and edge (RESOURCE GUIDE PAGES 104–107)
- Whiteboard and markers or Smartboard
- Open space (gym, playground, field)
- Computer, speakers, and projector with Internet connection or Smartboard
- “Willie the Whistle” video: www.nhtsa.gov/Pedestrians
- Parent letter and agreement form (RESOURCE GUIDE PAGE 103)

Discussion
1. Introduce the unit to the students by expressing that walking is very cool—it’s free, it’s great exercise, and you can do it to get almost anywhere.
   - You can visit friends, travel to school, the movies, shopping, worship, museums, or sporting events.
   - What’s not cool is when young people are involved in a crash with motor vehicles. We will be learning some important ways you can stay safe and healthy while walking.

2. Explain to the class that we are going to talk about walking safely near traffic and the importance of holding an adult’s hand when crossing the street. Ask:
   - Why should you hold an adult’s hand while crossing the street?
     - They are more experienced at crossing the street safely and can help you make a good choice when to cross.
   - Who are some adults who can help you cross?
     - Mother, father, teacher, crossing guard.
   - What about an older brother or sister? Is it okay for an older brother or sister to help cross the street?
     - Only if your brother or sister is very responsible and has permission from your parents. Sometimes brothers and sisters know how to help younger children cross the street, but not always. That is why you have to ask your parents first.
   - Raise your hand if you have... walked to school, a friend’s house, the store, library, park, etc.

3. Display “walker/pedestrian” vocabulary card with appropriate picture. Explain to the class:
   - A pedestrian is a person who walks or moves on sidewalks, trails, grass, etc.
WALK FUN! LESSON 1: Traffic and You

4 Ask students:
   • Can you think of some reasons why it is important to walk to get to places?
     > It is good for you (exercise); it’s good for the environment (no air pollution from vehicles); it’s good for your neighborhood (less traffic); and it’s fun!

5 Explain that walking is good for many reasons, but as we walk, we need to be sure we are safe. Usually, we are not the only people trying to get around.

Display “traffic” vocabulary card with appropriate picture and explain that cars, buses, trucks, herding animals, trains, skateboards, and other vehicles also have to get places like we do.

- These vehicles are called traffic.

6 Ask students to raise their hand if they live on a street where there is a sidewalk. Have students give a “thumbs up” if there are sidewalks near the school.

- Sidewalks are special places where we walk that are away from the traffic in the street. When there is a sidewalk, we should always use it. If there is not a sidewalk, we should always walk on the left side of the street, closest to the grass or buildings. When we walk on the left side of the street against the flow of traffic, we can see traffic coming.

7 Show “Willie the Whistle” video: [www.nhtsa.gov/Pedestrians](http://www.nhtsa.gov/Pedestrians). After watching the video, ask the following questions:

- What is an edge?
  > A curb, road side, parked car, row of hedges, etc. An edge is a safe place to look and listen for cars before you cross the street because you can see them coming, but you are still far enough away. Sometimes there are cars parked along the street. In this case, you would want to move out a little further from the edge to the end of the parked car and stop. This is the second edge.

- What do you do when you come to a curb or edge?
  > Stop.

- After you stop at the curb or edge, what should you do?
  > Look left, right, and left again. Listen for traffic.

8 Have students practice what their left and right is. Hold up your left hand and make an “L” with the pointer finger and thumb.

- This is your left.
- That’s the side of the street where we always want to walk!
- What is your right? Hold up your right hand and wave it, wave fast!
Discuss with students:

- Why do you think we should look left first and then left once again before crossing the street?
  > The closest lane of traffic is the left. Look left once again before you start crossing because a car that you didn’t see before might be coming now.
- Why should we keep looking and listening as we cross the street?
  > Traffic is always moving and cars and trucks may come up quickly.

Distribute the parent letter and agreement form. Stress to students they need to return the completed agreement form the next school day.
**STOP AND SEARCH AT AN EDGE: LOOKING LEFT-RIGHT-LEFT**

**Focus Point:** Children should be taught to automatically stop when approaching a curb, whether chasing a ball or crossing the street. Children should practice stopping at an edge to listen and search for vehicles by looking left, right, and left; they need to see traffic coming down the street and what could cause them danger if they cross.

**Materials and Equipment**
- CD player and “fun” music
- Masking tape or painter’s tape
- Four cards numbered one through four, or each card with a different shape or color
- Large picture cards of vehicles (RESOURCE GUIDE PAGES 108–10)

**Activity**

1. Arrange five- to ten-foot-long strips of masking tape on the floor near each wall in the classroom. On each of the walls, tape up one large number or shape.

2. Demonstrate proper stop-and-search (left-right-left) method.
   - *Stop at the edge of the street (tape on the floor).*
   - *Look and listen for traffic.*
   - *Then look left (hold up your left hand), look right (hold up your right hand), and look left again (hold up your left hand).*

3. Ask students:
   - *What are we looking for when we look left-right-left?*
     > *For cars, motorcycles, bicycles, buses, or trucks coming down the street.*

4. Explain:
   - *Looking left first is the direction that cars closest to us are coming from. Then, we look right to see if traffic is coming from the other way. Last, we look left again because cars move fast and we want to make sure it is still safe to cross. Make sure that when you look left and right, you turn your head and touch your chin to your shoulder—this will help you see further down the street.*
Have students number off one through four and go to that number on the wall. Have students identify the tape on the floor as the curb/edge. Play music and ask the students to move around their side of the room in the manner you ask until the music stops. For example: spin, elephant walk, crab walk, hop, walk backward, etc.

When the music stops, children should stop movement and stand at the edge on the tape. Ask them to demonstrate proper stop and search. Talk the class through the stop-and-search method. Ask them to point and verbalize their actions. Repeat the activity several times.

**NOTE:** You can hold up a picture of a vehicle, or not, for the student to identify. Have students point and call out what they see that could cause them danger if they cross the street without looking.
WALK FUN! LESSON 1: Traffic and You

RETRIEVING A TOY
[OPTIONAL]

Focus Point: Dart-outs into traffic from driveways and at intersections are the number one cause of traffic crashes involving children under age fourteen. Once in motion (playing and running), children tend to stay in motion. They need to put the skills they’ve learned together and practice stopping at the edge, listening, and looking left-right-left again, to identify on coming traffic before crossing streets when they are distracted and/or retrieving a toy.

Materials and Equipment

- Bean bags
- Pictures of vehicles: car, bus, motorcycle [RESOURCE GUIDE PAGES 108–10]

Activity

1. Use lines on gym floor or lines made with tape on the floor in the classroom and line all children up on an “edge.” Pass out bean bags to each student.

2. Have them pretend that they are playing out in the yard when all of a sudden, “Oops!,” their bean bag goes into the street. Have the students toss their bean bags several feet in front of them on your signal.

3. Have several children hold a sign of a bus, motorcycle, or car coming from both directions to simulate a real street situation.

4. Have them ask for permission to go into “the road” and retrieve their bean bag.

5. Then, have the children stop at the edge, look left-right-left and if it’s clear, have them retrieve their bean bag and return safely behind the edge.

6. Practice as time allows.
REVIEW

Have a prepared “review” ball (inflated beach ball with sections on it) to toss to the students one at a time. Once they have correctly answered a question on the ball, the student should toss it back. Continue this process as time allows.

Possible questions to write on the ball with a marker or on tape placed on the ball:

- What is an example of an edge?
- How should you move your head when looking for traffic?
- What is traffic?
- What is one thing you learned today?
- Do you have a sidewalk where you live?
- Who is a pedestrian?
- What is an example of a vehicle?
For additional information on promoting safe walking and bicycling, contact BikeMN at education@bikemn.org.
LESSON 2: Visual Barriers and Model Street Crossing

OVERVIEW

Educational Goal: To develop an understanding of how to safely cross the street around barriers.

Preparation
• Collect large items to use as visual barriers or draw on poster board or large cardboard boxes: cars, buses, trucks, bushes, snowbank, or fence.
• Create a model street indoors or outdoors.
• Invite volunteers if using a “real” street. (Recommend one adult for every five to eight students)

Purpose
Children will recognize visual barriers and learn how these barriers can be dangerous to pedestrians, cyclists, and automobiles. Children will identify different street crossing visual barriers, and determine whether a crossing is safe.

Topics Covered
• Visual barriers
• Safe street crossing

Learning Objectives and National Physical Education Standards
At the end of this lesson, students will be able to:

1. Identify examples of visual barriers when crossing the street. (Standard 2)
2. Describe how visual barriers can block a driver’s view of pedestrians. (Standard 2)
3. Describe ways to increase walker visibility around barriers. (Standard 2)
4. Demonstrate safely crossing the street around a barrier. (Standards 3 and 4)
Walk fun! Lesson 2: Visual Barriers and Model Street Crossing

Visual Barriers

Focus Point: Drivers of vehicles need to see pedestrians trying to cross the street. The pedestrian cannot assume that just because they see a vehicle coming that the driver can see them. Visual barriers such as trees, shrubs, snowbanks, and parked cars are obstructions preventing drivers from seeing pedestrians, bicyclists, and other road users.

Materials and Equipment

- Masking tape, rope, or other material to create street lines, and tall trash cans or boxes

Discussion

Review Pedestrian Safety from Lesson 1

1. Ask students to explain the new terms they learned in Lesson 1.
   - What do you call people who are walking?
     - Pedestrians.
   - What are vehicles?
     - Cars, trucks, motorcycles, bicycles, and buses that take us from one place to another.
   - What is traffic?
     - Vehicles on the road.
   - What does “edge” mean to a pedestrian?
     - Curb, roadside, sidewalk.

2. Ask students to explain where to walk safely.
   - Where should you walk in relation to the traffic?
     - Find a sidewalk and walk there.
   - What should you do if there isn’t a sidewalk?
     - Walk on the left side of the street facing traffic so that you can see vehicles coming toward you.

3. Ask students about walking with an adult.
   - Do you think you should cross the street alone or with an adult?
     - With an adult.
   - Who are some examples of adults you can cross with?
     - Mother, father, teacher, crossing guard.
   - Is it okay to cross with an older brother or sister?
     - It depends. If your older brother or sister is very responsible and has permission from your parents, it is okay.

Vocabulary

Visual barriers: something considered to be a limit, standard, or boundary relating to vision or sight

NOTE: Visual barriers such as trees, shrubs, snowbanks, and parked cars are not the only obstructions preventing drivers from seeing pedestrians, bicyclists, and other road users. Sun glare, caused by the sun being low on the horizon in the direction of vehicle travel, is responsible for many crashes. Many sun glare accidents happen early in the morning or late afternoon when the sun is low on the horizon. Additionally, the switch from daylight saving time to standard time puts drivers on the road when the sun is low on the horizon. Unfortunately, these times coincide with the morning commute and school travel, which puts pedestrians and bicyclists at higher risk. Pedestrians should always check traffic prior to entering the roadway, and never assume a driver sees them.
Why is it important to always cross the street with an adult, or older brother or sister who is responsible and has permission from your parents?
> You may get hurt or injured if you do not cross safely.

Define and explain types of visual barriers. Explain to students before crossing the street that they need to find a safe place to cross.

How do you know where there is a safe place to cross?
> A safe place to cross the street should be where you can see the traffic clearly on both sides, preferably from a sidewalk and in a crosswalk.

Explain to students that anything that makes it hard for them to see traffic or that makes it hard for vehicles to see them is called a visual barrier. Have pictures of visual barriers ready to display as students answer the following question:

What are some examples of visual barriers?
> Parked cars, trucks, buses, tall bushes, tall trash cans, trees, a fence, a curve in the road, snowbank, or a hill.

Explain to students that if they want to cross the street but encounter a visual barrier, they should find another place to cross the street that is free of barriers and safe to cross, preferably in a crosswalk. If there is not an obvious safe place to cross without visual barriers, approach the edge of the barrier for a “second edge” and complete the stop-and-search method.

**BACKGROUND**

Children seldom realize that just because they can see a car coming toward them, the driver doesn’t always see them. A driver can’t avoid you if they can’t see you! Visual barriers can be serious threats to a pedestrian, bicyclist, or motorist because barriers obstruct the view. Identifying visual barriers in their own neighborhoods will help students remember to stay clear of them or be especially careful to make themselves visible to a driver.
Focus Point: Practicing the stop-and-search method at model intersections or on barricaded streets teaches children how to make safe decisions when they come to a street crossing. Children sometimes consider it a race to cross the street, but they should not run across the street.

Materials and Equipment

- Examples of visual barriers [RESOURCE GUIDE PAGES 108–15]
- Adult volunteers: one leader for every five to eight students
- Sidewalk chalk, spray chalk
- Barricades
- Six fifty-foot-long pieces of rope
- Measuring tape

Activity

NOTE: If this lesson is taught outside at a real intersection, one adult to five to eight students will be needed. Find intersections preferably in a low-traffic area that are either signalized or not, have painted crosswalks, four-way stop signs, or no sidewalks. This offers the students an opportunity to practice in various environments with supervision.

If using a model street, you will need sidewalk chalk (or spray chalk if outside), six fifty-foot-long strips of material to make the sidewalk, boulevard, and street, as well as several shorter strips to create a center line for the street. Use models of visual barriers from the Resource Guide or place tall trash cans or boxes in the street to simulate parked vehicles. Also place a box or another large object to represent a shrub or tree on the boulevard. This will act as a visual barrier.

VOCABULARY

**Intersection**: a place where two roads or paths cross each other.

**Sidewalk**: pavement, path, and sometimes platform along the side of a road normally separated from traffic by a curb.

**Boulevard**: a wide and usually important street that often has trees, grass, or flowers planted down its center or along its sides.

**Barricaded street**: a barrier that protects or blocks a route.
MODEL STREET EXAMPLE:

1. Explain to the students the street model: street area, boulevard space, visual barriers, and sidewalk.

   Demonstrate to the students how to cross safely using the stop-and-search method. Remind students that it is best to always cross with an adult.

2. If conducting this activity outside at a real street, divide the class into several small groups with one adult for every five to eight students. Have them practice crossing the street, looking left-right-left, identifying any visual barriers, and determining when it’s safe to cross. Volunteers should support the students in making safe decisions on crossing the street. Emphasize that each child should _always_ make their own decision, not cross a street simply because another child is. Each group should practice crossing two times.

3. If using a model street, practice two crossings.

4. Discuss the visual barriers and what made it safe or unsafe to cross.

   **NOTE:** Stress to students: _Whenever possible, use a crosswalk!_
Ask the students to review with you what they have learned in this lesson.

1. Cross with an adult or older brother or sister.
2. Find a safe place, hopefully without visual barriers and with a crosswalk.
3. Stop at the edge; find a second edge if visual barriers are present.
4. Look left-right-left for traffic and also listen for traffic.
5. Cross the street by walking, looking both directions, listening and moving in a straight line. Do not run.

Hold up your hand and starting with the thumb, count out the five things to remember when crossing the street. Instruct students to do the same. Use the diagram below to guide them.
LESSON 3: Crossing Intersections

OVERVIEW

Educational Goal: To develop an understanding of how to safely cross the street using traffic signals and signs at intersections.

Preparation

- It is recommended, at this point, to practice outside in a real street setting.
  NOTE: If unable to go outside, set up a simulated intersection.
- Invite adult volunteers if taking a walk outside. Recommend one adult for every five to eight students.

Purpose

At this age, children should only be crossing with an adult. Still, children need to understand why it is important to recognize different street crossings and visual barriers, and determine whether a crossing is safe. Children are building their skills so that one day they can cross safely by themselves. It is important to emphasize that intersections are tricky places for children to cross because there is traffic approaching from several different directions and students cannot easily interpret driver behavior.

Topics Covered

- Traffic signs and intersections
- How to cross an intersection safely

Learning Objectives and National Physical Education Standards

At the end of this lesson, students will be able to:

1. Describe what actions are taken at the following traffic signs: stop sign, yield sign, and traffic lights. (Standard 2)
2. Demonstrate how to safely cross the street at a stop sign. (Standards 3 and 4)
3. Demonstrate how to safely cross the street at a yield sign. (Standards 3 and 4)
4. Demonstrate how to safely cross the street at a traffic light. (Standards 2, 3, 4, and 5)
**TALKING TRAFFIC SIGNALS**

**Focus Point:** Traffic signs, signals, and rules are more easily understood by adults, but children often interpret these things differently. For children to learn how to cross an intersection safely, they must also understand the traffic sign, signals, and rules of the road that regulate intersections.

**Materials and Equipment**
- Examples of traffic signs and traffic signals/lights (RESOURCE GUIDE PAGES 119–26)

**Discussion**

1. Ask the students:
   - Do you know which traffic signs and signals can help you safely cross the street?
     - Crossing signals and lights: walking person means “Walk,” and red hand means “Stop/Don’t Walk.”

2. Ask the students:
   - Do you know how to use the traffic signal to safely cross the street?
     - Look for the pole on the sidewalk and push the button by the sign that has an arrow pointing in the direction you want to go. Stop and wait for the signal. If there is not a button, wait for the “Walk” signal.

3. Show examples of traffic signals/lights from the Resource Guide.

4. Explain to the students:
   - Sometimes there is a red hand on the signal. It means “Don’t Walk” and that it is not safe to cross. Stop at the edge of the sidewalk and wait until the “Walk” signal.
   - Sometimes you will see a signal that is white and looks like a person walking. This means “Walk” and it is time to cross the street. This does not always mean that traffic has stopped and that it is safe. Make sure to also continue by looking left-right-left and listening to traffic.
   - Start crossing while the “Walk” signal is showing. If it turns to the flashing red “Don’t Walk,” keep walking. Do not turn around and go back.
   - If the “Walk” signal has numbers, it is counting down the number of seconds to safely cross the street. Do not run across the intersection just to beat the clock.

5. Exceptions:
   - No pedestrian signal: wait for the traffic light to turn green.
   - No traffic lights or signals: use the stop and search method.

6. Remind the students:
   - Even if the traffic signals show it is time to cross, always look left-right-left and listen for traffic, and listen to the adult to say when it is safe to go.
Focus Point: Children must be taught the rules of the road and the proper stop and search technique to be safe pedestrians. For this lesson, it is recommended to take the children outdoors to a real intersection with traffic signs and signals/lights. Using real and secure intersections or creating realistic intersection situations for children to practice will help them when they are faced with real traffic situations.

Materials and Equipment
- Open space (field, playground, or parking lot)
- Examples of intersections [RESOURCE GUIDE PAGES 116–18]
- Twelve cones
- Ropes, tape or chalk
- Measuring tape
- CD player and “fun” music
- “Start” cards [RESOURCE GUIDE PAGE 127]
- Two stop signs [RESOURCE GUIDE PAGE 121]
- Vehicle barriers, such as a car or bus, etc. [RESOURCE GUIDE PAGES 108–10]
- Examples of traffic signs and traffic signals [RESOURCE GUIDE PAGES 119–26]

Discussion
1. Ask the students if they know what an intersection is. Show students examples of intersections. Explain to students that an intersection is where two or more roads either meet or cross. If possible, show several models of intersections, because children may live in the inner city, a suburb, or in a rural environment, making their pedestrian experiences unique.

2. Ask the students to show a “thumbs up” if they have an intersection in their neighborhood.

3. Ask the students to show a “thumbs up” if they agree or “thumbs down” if they disagree that an intersection is a dangerous or tricky place to cross the street. Explain to students:
   - There are many cars coming together at one point and because they may need to travel in different directions, it is more dangerous. One car might be turning right and might need to stop for another car turning in the same direction. Another car may need to go straight.
Walk fun! Lesson 3: Crossing Intersections

INTER — WHAT?
(cont.)

Activity

1. If an intersection with a traffic signal is not available near the school, arrange cones, chalk lines, and/or tape to simulate street corners either indoors or preferably, outside on playground or parking lot. Follow the diagram below. Explain that the chalk lines or tape are edges (like curbs) that make up an intersection—it is also where they need to stop.

Use rope, masking tape, or chalk to create an intersection. Use eight twenty-foot-long lines for the streets and several short strips for the lane dividers in the middle of the streets. Create street signs and traffic signals using paper, yard sticks, and cones. It may also be helpful to create crosswalks to emphasize safe crossing areas, but they are not required and may be time consuming.
Walk fun! Lesson 3: Crossing Intersections

2. Review and demonstrate the stop-and-search method for intersections with your back to the class:
   - Stop at the edge.
   - Listen and look left-right-left and also search behind you and in front of you. (Explain that cars may drive up from behind you at an intersection so they need to search behind as well as left and right.) Look in front of you because cars may be turning into the street you are trying to cross.
   - Cross when clear.
   - Keep looking and listening for traffic while crossing.

3. Choose a couple of volunteers (students or adults) to be the cars or trucks on the street. Give them a sign or “label” from the Resource Guide stating what they are: van, bus, tree, shrub. They must obey all traffic laws: stay on the right side of the road, stop at stop signs, allow pedestrians to cross the street.

4. Have the students choose a partner and line up behind “Start.” Ask the children to move to the first intersection and call out the proper procedure:
   - Stop at the edge.
   - Listen and look left-right-left and search behind you and in front of you.
   - Cross when clear.
   - Keep looking and listening for traffic while crossing.

5. Once the first pair has crossed the first intersection, have the next pair begin. Continue until everyone has crossed all four intersections. Instruct students to have a seat on the floor or ground when finished to wait for the rest of the class.
Ask students the following questions to assess what they have learned from today’s lesson:

- **Where do you stand before crossing at an intersection?**
  > At the edge.

- **What should you be looking for?**
  > Traffic from both directions.

- **What do you do if there is a visual barrier?**
  > Walk to the edge of the barrier and stop a second time. Then look left-right-left and listen for traffic.

- **What do you do before you cross an intersection?**
  > Listen and look left-right-left, behind and in front of you if at an intersection.

- **What do you do when you see a red hand on a traffic signal?**
  > Stop. Do not cross the street.

- **What do you do when you see a signal that is white and looks like a person walking?**
  > You may cross the street, but continue to look left-right-left and listen for traffic.
LESSON 4: Neighborhood Walk and Celebration

OVERVIEW

Educational Goal: To apply skills learned in the pedestrian safety curriculum.

Preparation

• Map out a safe and varied walking route that is approximately a half-mile long.
• Invite volunteers to help supervise the class during the neighborhood walk: one adult for a group of five to eight students.
• Prepare graduation certificates for each student.

Learning Objectives and National Physical Education Standards

At the end of this lesson, students will be able to:

1. Demonstrate knowledge and skill of the stop-and-search method. (Standards 2 and 4)

2. Demonstrate knowledge of visual barriers and the skill needed to safely walk around them. (Standards 2 and 4)

3. Demonstrate knowledge of how to cross the street safely using traffic signals. (Standards 2 and 4)
**Focus Point:** This is a culminating activity that combines all of the learned pedestrian skills. It is important that a neighborhood walk be the final part of a sequence of pedestrian skills activities that the children learn.

**NOTE:** Double-check that each student has turned in a signed agreement form from Lesson 1.

**Materials and Equipment**
- Map of a safe and varied walking route that is approximately half-mile long
- Copy of scavenger hunt list for each adult volunteer (RESOURCE GUIDE PAGE 128)
- One adult volunteer for every five to eight children

**Activity**

1. Identify a safe and varied route an approximately half-mile long for this activity. The route should be located in a quiet neighborhood adjacent to the school; choose an area with sidewalks, traffic signals, and low traffic volume. If this is not possible, conduct the walk on the school campus. Try to include a couple of intersections and visual barriers.

2. Assemble the class and discuss the purpose of this final activity. Explain that the class will be going on a walk through the neighborhood while having a scavenger hunt.

3. Divide the class into small groups of five to eight children with an adult volunteer. Provide volunteers with a map of the route to walk and a copy of the scavenger hunt list to help the students identify: visual barriers, cars, trucks, buses, crossing signs, traffic signals, etc. Volunteers should model and call out the proper stop-and-search method (stop and look left-right-left).

4. Stagger starting groups on the walk to avoid the groups crowding one another.
Focus Point: Children need the opportunity to practice demonstrating what they have learned in a safe and encouraging environment. In this lesson, students will practice safely crossing an intersection by playing an active game.

Materials and Equipment
- Open space (field, parking lot, gym)

Discussion
Ask students the following review questions about how to cross an intersection:
- Where should you stand before crossing an intersection?
  > At the edge.
- What are you looking for?
  > Traffic from both directions and visual barriers.
- What do you do before you cross an intersection?
  > Listen and look left-right-left, behind you and in front of you.
- Why do you look behind you and in front of you?
  > Cars might be coming from behind you or turning ahead of you.

Activity
Introduce the game “Stop, Look, Walk.”

1. Direct students to line up beside one another across a large field or gym from the teacher.

2. Explain that you will announce “Stopping” for students to freeze at the “edge” of the street.

3. Explain that you will announce “Walking” for the students to begin walking. Ask students to demonstrate looking left-right-left before beginning to walk. If students do not do this, they cannot walk and must stay where they are. Announce “Stopping” for students to freeze.

4. Continue announcing “Stopping” or “Walking” until the first student or students reach the teacher at the other side of the intersection. The first student to reach the teacher is declared the “Crossing Champ.”

5. Invite the “Crossing Champ” to replace you as the announcer.

6. Repeat as time allows.
Focus Point: The students will participate in a “graduation” of the Walk Fun! program and receive a certificate. You may organize the graduation ceremony as elaborate or simple as you’d like. Rewarding the students and processing a feeling of empowerment will help them mature lifelong skills as pedestrians.

Materials and Equipment
- Copy of graduation certificate for each student (RESOURCE GUIDE PAGE 133)

Options
- Invite parents to attend.
- Have the principal hand out the certificates.
- Invite a police officer to come to the graduation and congratulate the students.
LESSON 1: Bicycle Ridership and Safety

OVERVIEW

Educational Goal: To develop an understanding of the importance of traffic laws and how they pertain to riding a bicycle.

Preparation

• Set up technology to view and listen to video from the Internet.
• (Optional) Invite a police officer or person familiar with Minnesota bicycle laws to present to the students.

Topics covered

• Basic bicycle etiquette
• Traffic laws and signs

Options

Consider beginning the bicycle safety unit as part of “Transportation Safety Week” at the beginning of the school year or prior to “International Walk/Bike to School Day,” which is the first Wednesday of October.

Learning Objectives and National Physical Education Standards

At the end of this lesson, students will be able to:

1. Describe the importance of doing bicycle safety checks as described in the video. (Standard 2)
2. Describe how equipment and gear relate to bicycle safety as described in the video. (Standard 2)
3. Identify a common traffic law and potential consequences when not followed. (Standard 2)
4. Describe how basic traffic laws relate to bicycling. (Standard 2)
5. Identify the five key rules for bicycling related to traffic laws. (Standard 2)
INTRODUCING BIKE FUN!

**Focus Point:** Children who are taught bicycle ridership and safety skills at an early age are more likely to grow up and become safe bicyclists who enjoy the benefits of bicycling. They can learn these skills in a controlled and supervised setting before they venture out into traffic. Mastering these skills leads to healthy practices that will help them to be safer and predictable pedestrians, bicyclists, and future motorists.

**Materials and Equipment**
- Parent letter and agreement form for each student [RESOURCE GUIDE PAGE 103]

**Discussion**

1. Introduce the Bike Fun! unit to the students. The following are ways to introduce the unit. Allow for a variety of answers to the following questions:
   - *How many of you have tried to ride a bike?*
   - *Anyone ride their bike to school today?*

2. Ask students why they ride their bikes. Allow time for them to provide answers. Stress to students that there are so many great reasons to ride your bike. It offers fun, freedom, and exercise, and it’s good for the environment.

3. Explain to students:
   - *The Bike Fun! unit is a hands-on curriculum with in-class lessons and on-the-bicycle training that we complete outside, as weather permits. We will have a team of bicycle experts and enthusiasts assist with this training—police officers; representatives from the Bicycle Alliance of Minnesota, a bicycle advocacy and education organization; and others—to help us learn about bicycling. Stress to students that helmets are required and they should bring their own from home.*

4. Hand out parent letter with agreement form that a parent or guardian must sign. Explain to the students that they must hand in their agreement form before riding a bike.

**BACKGROUND**

In general, children up to the age of nine or ten should probably ride on the sidewalk on all but the quietest roads, unless they are accompanied by an adult. It is important they are trained to treat every driveway and intersection with extreme caution even while on the sidewalk. There is no magic age at which children become capable of riding safely in traffic; parents need to make that judgment call based on the child’s ability to negotiate traffic situations and exercise good judgment as they ride.
Explain to students:

- We will learn bicycle safety, proper bicycle fit, and parts of a bike.
- We will learn some basic laws and skills that teach us to prepare for a safe ride. We drive our bicycles. The same rules apply to anyone who drives a car or drives a bike. Safety rules include: we stop at stop signs, ride on the right side of the road, and use hand signals. Can you think of any other safety rules?
- Another safety rule is: we do not ride our bikes on sidewalks. Why do you think that is? 
  - Riding our bicycles on the sidewalk is dangerous and is only recommended for children younger than age nine.
- In the last six lessons, we use our bicycles and learn how to drive them. We learn basic riding skills, such as how we ride in a straight line, make quick stops and quick turns, and how we ride in traffic. Again, we learn how to drive a bike!
- If the students in our class perform well, we plan to take rides through the community.
HOW MUCH DO YOU KNOW?

Focus Point: Children may have some ideas and practice with riding a bike. It is beneficial to the program to find out how much they know about being a bicyclist. A pre-test gives a guide to what needs to be taught and practiced. At the end of the unit, the children will take the same test to assess knowledge about riding a bike and confidence levels about being a driver of a bike.

Materials and Equipment

• Pre-test for each student (RESOURCE GUIDE PAGE 129–31)
• Pencil for each student

Activity

1. Introduce the pre-test. Ask students:
   • Do you know what a pre-test is?
   • What is a post-test?

2. Tell students:
   • You have eight minutes to complete the pre-test, which will be corrected but not graded. At the end of the unit, you will then take the same test and compare your results to that of the pre-test. This pre-test and post-test process allows us to evaluate the effectiveness of the unit. In other words, we test you on your knowledge and test ourselves on how well we are teaching you.

3. Administer the pre-test. Give students eight minutes to complete the pre-test. Students may not finish within the allotted time. Advise students to skip questions they do not know at all and go back to those questions if they have time. This is good test-taking practice.

4. Correct the pre-test and keep on file. This should not be graded, but compare results at the end of the unit with the post-test.
BIKE FUN! LESSON 1: Bicycle Ridership and Safety

“BIKE SAFE, BIKE SMART”

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

Materials and Equipment

- Computer, speakers, and projector with Internet connection, or Smartboard
- “Bike Safe, Bike Smart” video (nine minutes):
  www.nhtsa.gov/Driving+Safety/Bicycles/Bike+Safe+-+Bike+Smart+(25MB+and+146MB,+WMV+format)
- [OPTIONAL, IF TIME ALLOWS] “First Gear” video (twenty-one minutes): a bicycle safety video appropriate for students ten years old and older. The video covers bicycle safety checks, equipment, and gear, and finally, traffic safety. The video focuses on traffic laws and how to be safe and predictable bicyclists.
  www.walknbike.org/content/watch-btas-first-gear-safety-video-series

Video and Discussion

1. Introduce the “Bike Safe, Bike Smart” video. Ask students while they are watching the video to remember two ideas they didn’t already know about safe bicycling.

2. Discuss the video for a few minutes afterward. Ask students to volunteer to share two ideas they learned from the video.

3. Stress the importance of obeying the laws when riding. Ask students:
   - Why is it important to follow the laws of the road when bicycling?
   - Riding by the laws makes you safe and predictable so you do not get into crashes with cars.
Focus Point: Bicycle ridership and safety presented by a police officer offers an in-depth discussion about the traffic laws that bicyclists must follow so students can understand the consequences of a violation and abide by traffic laws.

Materials and Equipment
- Computer and projector with Internet connection, or Smartboard
- “A Pocket Guide to Minnesota Bicycle Laws” and/or “Drive Your Bike” bookmark, available to order for free from MnDOT: [www.dot.state.mn.us/sharetheroad/bike/materials.html](http://www.dot.state.mn.us/sharetheroad/bike/materials.html)

Discussion
1. Ask the students:
   - What is a law?
     - A rule or regulation set up by a government that everyone must follow.
   - Why do we have laws?
     - Answers may vary.

2. Introduce the guest speaker.

3. At the end of the presentation, thank the guest for coming.

4. Send the guest a thank-you card from the class.

Vocabulary
- **Law**: a rule or regulation set up by a government that everyone must follow.
- **Enforcement**: the actions taken by police officers or other people who are instructed to make sure we do not break rules or laws. For example, a referee enforces the rules in a basketball game and calls a foul on those who break the rules.
- **Severity of punishment**: the degree of punishment we may receive when we break a rule or law. In a basketball game, the team fouled often gets extra foul shots when an opponent breaks a rule.
- **Liability**: to be responsible for an action. We are responsible (liable) for the way we behave. If we break a school rule, we may go to the principal’s office for a punishment.
- **Predictable**: to act so other people know what we are going to do. “I am so predictable; I always want pizza for dinner.” As bicyclists, we must travel in a predictable manner so other motorists and cyclists know what we will do. Predictability prevents crashes.
Guidance for Guest Speaker

We live with many different types of laws. Some laws are in place that make it a crime for people to steal and the law includes consequences or punishment for breaking the law. Some laws are made to help keep people safe and healthy.

Laws are rules that we are supposed to follow. The rules are generally set up so people remain safe and healthy. A good way of thinking about whether something should be against the law is if everyone did it, would it still work? If everyone ran a red light, would traffic work? Would everyone be safe?

EXAMPLE: One example of a law is the requirement that people must have a driver's license before they are allowed to drive a car.

This law ensures that people understand traffic laws and that it is important to drive safely so they do not get into a crash.

EXAMPLE: Another example is a law that prohibits people from driving when they have consumed too much alcohol and their ability to drive safely is impaired. Alcohol decreases people's reaction speeds and ability to make decisions. This increases the chance for a crash and makes it very dangerous to drive.

Of course, there are certain consequences for breaking laws. What do you know about what happens when someone breaks the law? Allow students to answer.

Because it is very dangerous to drive while under the influence of alcohol, drunk drivers who are caught are usually arrested, go to court, pay a fine (hundreds of dollars paid to the state), often go to prison, and may lose their driver’s license. If they crash and hurt or kill a person, they may go to prison for many years.

Why do different laws have different punishments? This is called severity of punishment. That means, “the degree of punishment we may receive when we break a rule or law.” If a law has a lesser punishment than another, are they both important?

Being responsible for your actions is called liability. You are responsible (liable) for the way you behave. If you break a rule, you may go to the principal’s office, get detention, etc. Liability is important because if you injure someone or their property and break the law, you are liable for the damage.

For additional information on promoting safe walking and bicycling, contact BikeMN at education@bikemn.org.
**EXAMPLE:** We don’t stop at a stop sign. We get into a crash. We are liable.

This means that we may have to replace the property of the individual involved in the crash or pay the bills to the doctor for any of the person’s injuries. Sometimes, we may need to pay a fine or go to jail.

So, laws are put in place to create order, to keep us safe, and protect our stuff. In traffic, laws are essential so others can predict what we are going to do. Bicycles must ride like all other vehicles to remain predictable and safe!

**BACKGROUND**

**MN STATUTES: 169.222 OPERATION OF BICYCLE**

**Subdivision 1. Traffic laws apply.**

Every person operating a bicycle shall have all of the rights and duties applicable to the driver of any other vehicle by this chapter, except in respect to those provisions in this chapter relating expressly to bicycles and in respect to those provisions of this chapter which by their nature cannot reasonably be applied to bicycles.

**Subdivision 4. Riding rules.**

(a) Every person operating a bicycle upon a roadway shall ride as close as practicable to the right-hand curb or edge of the roadway except under any of the following situations:

(1) when overtaking and passing another vehicle proceeding in the same direction;

(2) when preparing for a left turn at an intersection or into a private road or driveway;

(3) when reasonably necessary to avoid conditions, including fixed or moving objects, vehicles, pedestrians, animals, surface hazards, or narrow width lanes, that make it unsafe to continue along the right-hand curb or edge.

(b) If a bicycle is traveling on a shoulder of a roadway, the bicycle shall travel in the same direction as adjacent vehicular traffic.

(c) Persons riding bicycles upon a roadway or shoulder shall not ride more than two abreast and shall not impede the normal and reasonable movement of traffic and, on a laned roadway, shall ride within a single lane.

(d) A person operating a bicycle upon a sidewalk, or across a roadway or shoulder on a crosswalk, shall yield the right-of-way to any pedestrian and shall give an audible signal when necessary before overtaking and passing any pedestrian. No person shall ride a bicycle upon a sidewalk within a business district unless permitted by local authorities. Local authorities may prohibit the operation of bicycles on any sidewalk or crosswalk under their jurisdiction.

(e) An individual operating a bicycle or other vehicle on a bikeway shall leave a safe distance when overtaking a bicycle or individual proceeding in the same direction on the bikeway, and shall maintain clearance until safely past the overtaken bicycle or individual.

(f) A person lawfully operating a bicycle on a sidewalk, or across a roadway or shoulder on a crosswalk, shall have all the rights and duties applicable to a pedestrian under the same circumstances.
LESSON 2:
Protect Your Melon!

OVERVIEW

**Educational Goal:** To understand the brain, brain functions, and importance of bike helmets and proper helmet fit.

**Preparation**
- Set up technology to show video and diagram of the brain.
- Set up a large open space for the melon drop demonstration.
- Arrange helmets for students to try on.

**Topics Covered**
- (Optional) Brain functions
- Brain damage
- Protecting the brain

**Learning Objectives and National Health Education Standards**
At the end of this lesson, students will be able to:

1. Understand the impacts of a bicycle crash on the head and brain. (Standard 3)
2. Demonstrate how to wear a bicycle helmet properly. (Standards 5 and 7)

**Timeline**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protecting Your Brain (Optional)</td>
<td>15 minutes</td>
</tr>
<tr>
<td>Melon Drop</td>
<td>15 minutes</td>
</tr>
<tr>
<td>Helmet Fit</td>
<td>15 minutes</td>
</tr>
</tbody>
</table>

**Materials and Equipment**
- Diagram of the brain and labeled sections (Resource Guide Page 135)
- Waterproof barrier (plastic trash bags)
- Rags for cleanup
- Two ripe watermelons
- Ladder or step stool (Optional)
- Helmets of various sizes (recommend the majority of helmets to fit 21”-23¼” head circumference)
- Painters’ caps or surgical caps—one for each student
- Overhead of helmet fitting instructions
- Computer, speakers, and projector with Internet connection, white wall or Smartboard
- Video: www.safekids.org/video/bike-helmet-fit-test
- Permanent marker
BIKE FUN! LESSON 2: Protect Your Melon!

PROTECTING YOUR BRAIN
(Optional)

Focus Point: This activity introduces students to the integral role of the brain and encourages use of the bicycle helmet to keep it protected.

Materials and Equipment
- Overhead diagram of the brain and labeled sections (RESOURCE GUIDE PAGE 135)
- Whiteboard and markers or Smartboard

Discussion
1. Explain to students that every part of the human body is important to staying alive, but one part of the body is the computer that makes everything else run.
   - Does anyone know what part that is?
     > The brain.
   - What does it do that is so important?
     > Helps you see, hear, smell, breathe, and helps your heart beat.

2. Compare back to the “computer” analogy and ask students:
   - Would you ever drop your parent’s or school’s computer?
   - Throw your cell phone?
   - Then you would want to protect your brain and care for it like you would a computer or a cell phone.

3. It is critically important to emphasize to students that helmets are a tool to protect your brain, not the first line of defense. Write the “Five Layers of Crash Protection” from the League of American Bicyclists on the board:
   - Control your bike. (Don’t fall.)
   - Obey the laws. (Don’t cause a crash.)
   - Discourage others’ mistakes (lane position).
   - Learn hazard avoidance.
   - Wear a helmet.

BACKGROUND

Force. Research shows that up to 60 percent of deaths from bicycle crashes are the result of head trauma. A properly worn and certified bicycle helmet cushions and protects the head from damaging impacts with hard surfaces such as asphalt and concrete. Scientists measure how hard something hits something else with a “g force” measurement (G). Things that hit hard have a high g force and high potential for damage. 300 Gs is enough to cause permanent brain damage. 500 Gs can fracture the skull and cause death. The head of someone who falls from cycle height to a concrete surface can receive a force of more than 1,800 Gs. Helmets can reduce the 1,800 Gs of bicycle falls to less than 200 Gs, which is not enough to fracture a skull.
Ask the students to:
- Raise your hand if you’ve ever crashed a bike or hit your head.
- Raise your hand if you’ve ever felt dizzy, had a bump on your head, needed stitches, etc.

Explain to students:
- The human brain is responsible for overseeing the daily operations of the human body and for interpreting the vast amount of information it receives. The adult human brain weighs an average of three pounds, or about 2 percent of the total body weight. Despite this relatively small mass, the brain is responsible for many of the qualities that make each individual unique: thoughts, feelings, emotions, talents, memories, and the ability to process information. Much of the brain is dedicated to running the body, and controlling and integrating the various systems that make up the body.

Present/display the overhead or slide of the brain diagram. Explain to students:

A. REGIONS OF THE BRAIN
- Different regions of the brain have different functions and control specific activities. These include voluntary functions and involuntary functions.

- The brain is divided into three main areas:
  > The brain stem, responsible for basic body functions such as heartbeat regulation
  > The cerebellum, responsible for things such as balance and muscular coordination
  > The cerebrum, made of two distinct hemispheres and responsible for higher brain functions including thinking and emotions

B. VOLUNTARY FUNCTIONS
- Voluntary functions are those of which you are aware, and which you voluntarily control. Ask the students to name some voluntary functions: writing, running, chewing, etc.

- The cerebral cortex is the control center of the brain that controls voluntary activities, such as learning, intelligence, and judgment. This is the thinking tool.

- The cerebellum coordinates muscle movements including balance, posture, and general coordination. It helps coordinate our body parts to do physical activities. These include walking, dancing, playing basketball, video games, and riding a bike.

C. INVOLUNTARY FUNCTIONS
- Involuntary functions are those that are not under our conscious control.

- What are some involuntary functions of the brain? Is breathing a voluntary or an involuntary function?
BIKE FUN! LESSON 2: Protect Your Melon!

PROTECTING YOUR BRAIN
(Optional—cont.)

D. THE BRAIN IS DELICATE

- The brain has a consistency similar to Jello, and unlike other parts of our bodies, it usually cannot repair itself. If we cut our finger, what happens? We bleed, our blood clots and stops the bleeding, and eventually we get a scab. Sometimes these cuts are beyond repair. Have you ever seen someone with a body part amputated? Someone with just four fingers or one leg? Well, those injuries were probably really big and maybe even very bloody. To injure our brain permanently, it does not require a big bloody injury. Permanent brain injury can happen without blood, from something as simple as cracking your head against the ground. And, any injury to the brain is very, very difficult to repair.

7 Ask students:
- What does brain injury mean to you?

8 Explain to students:
- Depending on how the brain is injured, a person’s speech, movement, learning, and behavior may be affected. Examples include: losing memory, and losing ability to do basic tasks such as speak, read, write, or walk. Very severe brain injury can leave your motor functions disabled, while your body is still alive and breathing. Your quality of life will have degraded, as you would not be able to do anything you like to do. You might need constant care, but you would still be alive.

9 Ask students:
- How would you feel if you couldn’t play your favorite sport or participate in your favorite outdoor activity—not because your body wasn’t good, but because your brain couldn’t figure out how to do the skills needed?

10 Explain to students:
- Not only bicyclists wear helmets. Who else does?
- Skate boarders, rollerbladers, football players, hockey players, baseball players, skiers, snowboarders, motorcycle and car racers, construction workers, astronauts, firefighters.

11 Reiterate that helmets are a last resort, not the first line of defense; refer back to the “Five Layers of Crash Prevention” from the League of American Bicyclists:
- Control your bike. (Don’t fall.)
- Obey the laws. (Don’t cause a crash.)
- Discourage others’ mistakes (lane position).
- Learn hazard avoidance.
- Wear a helmet.
BIKE FUN! LESSON 2: Protect Your Melon!

For additional information on promoting safe walking and bicycling, contact BikeMN at education@bikemn.org. V1.0 11.13.
**Activity**

**15 MINUTES**

**MELON DROP**

**Focus Point:** An activity where a melon is dropped to simulate impacts of a bicycle crash on the head and brain. This activity demonstrates the importance of wearing a bicycle helmet to protect the brain from injury.

**Materials and Equipment**

- Waterproof barrier (plastic bag) and rags for cleanup
- Two ripe watermelons
- A permanent marker
- Consumer Product Safety Commission (CPSC)-approved bicycle helmet
- A cracked or damaged bicycle helmet (optional)

**Discussion**

1. The Melon Drop consists of two drops. The first is with a helmet (and the melon shouldn’t break) and the second without. The melon should break on the second drop.

2. Introduce melon with eyes, mouth, nose, and ears drawn on it:
   - *This is my friend “Mel” or “Bob,” or whatever. Have students inspect the melon for bruises or damage.*
   - *Mel is wearing a properly adjusted helmet, which covers the forehead.* (Demonstrate level helmet fit on melon.)
   - *Helmets work because the hard plastic foam liner inside breaks instead of your head. The shiny plastic on the outside keeps the helmet sliding with you and not twisting your neck or coming off your head.* (Demonstrate sliding the helmet on the pavement.)

3. Cut the trash bag open and cover the hard floor surface with it. Strap the melon in a helmet (helmet down) and drop it six feet onto the surface. Observe the results. The melon should not break, demonstrating how a head can be saved and the brain protected because the helmet absorbed the force of the fall. If the melon gets injured, note that even with a helmet, heads can get injured—but watch to see what happens when we drop it without a helmet.

**BACKGROUND**

Beginning in February 1999, all bike helmets manufactured or imported for sale in the United States had to meet the new federal safety standard set by the Consumer Product Safety Commission (CPSC). The new standard ensures that bike helmets will adequately protect the head and that chin straps will be strong enough to prevent the helmet from coming off in a crash, collision, or fall. Helmets meeting this new standard carry a label stating that they meet CPSC’s new safety standard.
NOTE: If the first melon is not damaged and did not break, use the same melon again. If it did break, use the second melon.

Drop the melon six feet without a helmet. Explain to students:

- The melon should break. This is because it received the full amount of force from the fall. Heads are fragile: they may crack and you may get permanent brain damage because of high-impact falls. If the melon does not break, it will bruise and that will show up in a few days. Look for a soft spot. That type of damage may still cause permanent brain damage and you should see a doctor.

(OPTIONAL) Pass around a cracked helmet and discuss helmet care. Helmets are fragile and shouldn’t be dropped; they are intended to absorb force one time. Once involved in a crash, they should be replaced. Helmets should not be stored in hot places such as cars or garages. Manufacturers strongly recommend replacement every three to five years.

Take the “good” bicycle helmet and have students pass it around the room. As it’s being passed say, “Stop!” and ask the student with the helmet to tell you why it is important to wear a helmet. Continue this after several students have answered appropriately and thoroughly.
BIKE FUN! LESSON 2: Protect Your Melon!

HELMET FIT

Focus Point: This activity teaches students how to properly fit helmets and do a helmet check.

Materials and Equipment

- Provide helmets or have students bring one. Helmets of various sizes (recommend the majority of helmets to fit 21”–23 ¼” head circumference or sized small to medium)
- Painters’ caps or surgical caps—one for each student
- Overhead of helmet fitting instructions
- Computer, speakers, and projector with Internet connection, white wall or Smartboard
- Video: www.safekids.org/video/bike-helmet-fit-test

Discussion

1. Explain to students:
   - Helmets protect your head from the impact of crashes. It is essential to put them on properly. Helmets must be snug so they don’t slide off your head. It is not okay to wear the helmet to the back or top of your head; protecting the front of your head is very important. During crashes, bicyclists generally go forward and hit the front of their head. So, it is essential that the helmet is always strapped, and that it covers the forehead and cannot be easily pushed back on the head.

2. Ask a student to volunteer to be the model as you explain proper helmet fit.

NOTE

Head lice are a potential problem for schools who want to use the same set of helmets for students in different classes. To control lice in helmets, The National Pediculosis Association recommends vacuuming and wiping out the helmets, noting that a louse can survive less than twenty-four hours away from a human host, but the nits on a hair left in the helmet could survive up to ten days. It is suggested that using painters caps or surgical caps under the helmet help control the transfer of lice. The caps are thin and should not interfere with the fit of the helmet.
How to fit a helmet:

- **Putting a helmet on isn’t as straightforward as you may think.** Helmets must pass the proper-fit test to ensure they are on right. The helmet should be snug and not wobble excessively side to side.

  **EYES** The helmet must be level on your head, covering your forehead. To test this, you place two fingers above your eyebrows. Your top finger should touch the bottom of your helmet.

  **EARS** Sliders should be positioned in a “V” or “Y” under your earlobes. This makes the helmet fit comfortable and helps it to stay in place.

  **MOUTH** You should be able to open your mouth wide and talk normally, but you should feel your helmet pull down on your head by opening your mouth wide. No more than two fingers should fit under the chinstrap.

Ask students when they think they should replace their helmet.

- **Never wear a helmet that has been involved in a crash.** Bicycle helmets are designed to be crashed only once. If your helmet shows signs of having been crushed, cracked, or damaged in any way, the integrity of the helmet may have been compromised, and it needs replacing. A crashed helmet may not show any visible signs of wear, but still be damaged internally enough that it won’t protect your head. Scratches on the plastic coating might be okay, but if the plastic foam has any cracks, the helmet will not absorb an impact and your brain will not be protected. Also, the foam in helmets breaks down over time, mainly from heat and sun. Don’t leave your helmet in a hot car or garage. Also, replace any helmet when it is more than three to five years old. Usually a date is printed inside.

Properly fitting a helmet:

- **There are different sizes and brands of helmets, and each company might have different sizing.** Demonstrate helmet sizing—too big and too small. Prior to starting, put on a poorly fitted helmet and have students identify problems with the helmet that you have on.


After the demonstration, have students get with a partner, get a surgical or painters’ cap and try helmets on. Each student should check their partner for proper fit and make suggestions for adjustments if needed.
For additional information on promoting safe walking and bicycling, contact BikeMN at education@bikemn.org.
LESSON 3: Before You Go

OVERVIEW

Educational Goal: Learn the parts of a bike and how to do an equipment safety check before riding.

Preparation
• Set up technology to view and listen to video from the Internet.

Topics covered
• Name That Part!
• “ABC Quick Check”

Learning Objectives and National Physical Education Standards
At the end of this lesson, students will be able to:

1. Demonstrate knowledge of the parts of a bicycle. (Standards 2 and 3)
2. Demonstrate knowledge of how to adjust a bicycle to fit personal needs. (Standards 2 and 3)
3. Demonstrate knowledge of the “ABC Quick Check” safety steps. (Standards 2 and 3)

LESSON 3

Timeline
10 MINUTES
Name That Part! 46
15 MINUTES
“ABC Quick Check” 47
5 MINUTES
Review 49

Materials and Equipment
• History of Bicycles: en.wikipedia.org/wiki/History_of_the_bicycle#Hybrid_and_commuter_bicycles
• Bicycle for demonstration
• Floor pump with gauge
• Bike Anatomy Quiz for each student (RESOURCE GUIDE PAGE 138)
• Pencil for each student
• Bike Anatomy Quiz answer sheet overhead for teacher (RESOURCE GUIDE PAGE 139)
• Computer, speakers, and projector with Internet connection, or Smartboard
• “ABC Quick Check” video: vimeo.com/64578975
• “ABC Quick Check” bookmark for each student or handout with checklist for an “ABC Quick Check” (RESOURCE GUIDE PAGE 140)
NAME THAT PART!

**Focus Point:** Students will recognize the differences in bicycles through the generations and learn the parts of today’s bicycle. Learning the parts of a bicycle will give students the know-how to check their bikes for safety and begin to know when it needs to be fixed.

**Materials and Equipment**
- **(Optional)** History of Bicycles: 
  en.wikipedia.org/wiki/History_of_the_bicycle#Hybrid_and_commuter_bicycle
- Bike Anatomy Quiz for each student (RESOURCE GUIDE PAGE 138)
- Bike Anatomy Quiz answer sheet overhead for teacher (RESOURCE GUIDE PAGE 139)
- Pencil for each student
- Computer and projector with Internet connection, or Smartboard and/or overhead projector

**Preparation**
- **(Optional)** Have technology to display Wikipedia website of history of bicycles.
- Make copies of Bike Anatomy Quiz.

**Discussion**
1. **(Optional)** Discuss the evolution of bicycles and how they have changed over the years.
   - What changes do you see in the different bicycles?
   - Why do you think these changes were made?

**Activity**
1. Ask the students:
   - Why do you think it’s important to learn the parts of a bicycle?
     - Knowing the parts of your bicycle and making sure it fits and works is important to ensuring your bike is in good, safe riding condition. When you need to bring it to a bike shop for replacement parts or repairs, you can correctly tell them what seems to be the problem and they can understand your needs.

2. Distribute the Bike Anatomy Quiz and a pencil to each student.

3. Instruct students to follow along and fill in the names of the parts as you identify the answers on the overhead projector or Smartboard. Match each corresponding number from the diagram of the bike to the name of that part in the box.

4. When finished with the Bike Anatomy Quiz, have students volunteer to point out the parts on a display bike as you randomly name parts.
"ABC QUICK CHECK"

Focus Point: Before each ride, checking a bicycle to make sure it’s safe to ride help can prevent a crash. Use the “ABC Quick Check” as an easy reminder for what to check before every bike ride. If your bike does not pass the “ABC Quick Check,” it needs repairs or service work.

Materials and Equipment

- Bicycle for display
- Floor pump with gauge
- “ABC Quick Check” video: www.vimeo.com/64578975 (three minutes)
- Computer, speakers, and projector with Internet connection, or Smartboard
- “ABC Quick Check” bookmark for each student (available from BikeMN) or handout with checklist for an “ABC Quick Check” (Resource Guide Page 140)

Preparation

- Set up technology to view and listen to video from the Internet.

Discussion

1. Have a bike for demonstration to help discuss proper bicycle fit. Stress to students:
   - Before we head out for a ride on our bicycle, it is important to adjust our bicycle to fit us properly. Our seat must be at a height so that when we sit on our bike with the pedal in the down position, the knee is slightly bent, and the handlebars are aligned with the front wheel.

2. Explain to students:
   - The “ABC Quick Check” is a simple safety check completed before we ride our bike. The best way to ensure that the bike is safe is to use the “ABC Quick Check” habitually before each ride.


4. Demonstrate the “ABC Quick Check”:

   A → STANDS FOR AIR
   Check tire pressure: squeeze front and back tires. They should be firm, not soft or squishy. If a tire does not have the appropriate amount of air in it, it could damage the tire and you may get a flat or in a crash. Tires should be inflated to a rated pressure printed on the sidewall (pounds/square inch, or PSI) of the tire. Check for damage to the sidewalls and tread. Damage to the sidewall is common if the brakes are not adjusted properly. If the fabric of the tire shows below the surface, replace the tire immediately and do not go for a ride.
“ABC QUICK CHECK”

B → STANDS FOR BRAKES
Check the brakes. Squeeze the brake levers. There should be a finger width between the handle bar and brake lever. Hold down the brakes and try to move the bike back and forth. If it doesn’t roll, you are good. Look closely at the brake pads. The brakes are positioned properly when the pads are parallel to and aligned with the side of the rim, not rubbing on the tire.

C → STANDS FOR CHAIN AND CRANK SET
Look at the chain—it shouldn’t be rusty or orange but instead have a light coat of oil on it. Also, check that the chain fits snugly and is not kinked. If the chain appears too loose or drooping, it may need adjustment. Do not ride a bike with a loose chain.

Check the crank set. The crank set consists of the bottom bracket, crank arms, pedals and chain rings. Take the left and right crank arms in your hands and attempt to move them sideways. If both cranks move side to side, you have a problem. If only one moves, one crank arm is loose and must be tightened before riding the bike.

QUICK → STANDS FOR QUICK RELEASE OR BOLTS
The quick release (QR) lever is located on the hub and when closed, acts like a clamp to hold the wheel in place. Some bikes don’t have a quick release but have nuts on each end that also should be tight. Before going on a ride, check the quick release or bolts to make sure they are tight enough to hold the wheel in place. If the QR lever leaves a slight imprint in our hand when you try and close it, it is tightened properly. When closed, the QR lever should not overlap the frame or fork, so it is accessible to open.

CHECK → STANDS FOR CHECK
Check the bike. Lift the bike a couple inches off the ground and carefully let it go while listening for any unusual rattles or sounds. Then ride the bike slowly for a short distance to check that the bike is working properly.

Ask the students:
• Why is it important to do an “ABC Quick Check” before going on a ride?
> The “ABC Quick Check” is a great way to make sure your bike is in good working condition so you stay safe while riding. Make sure you check every time before you go out on a ride, to make sure the fit is right and all the parts work properly.

Distribute an “ABC Quick Check” bookmark or “ABC Quick Check” checklist to each student.
REVIEW

Review questions. (If short on time, ask when the students are lining up to transition to their next class.)

- What does the A stand for?
- What does the B stand for?
- What does the C stand for?
- What does the QUICK stand for?
- What does the CHECK stand for?
LESSON 4: Changing a Flat

OVERVIEW

Educational Goal: To understand why it is important to know how to fix a flat tire and what equipment is needed to change a flat.

Preparation

It is recommended that if you are not experienced changing a flat tire, call the local bike shop for a bike mechanic to be your guest speaker for this lesson. You may also visit [www.bikemn.org/education/minnesota-league-cycling-instructors](http://www.bikemn.org/education/minnesota-league-cycling-instructors) for a list of Minnesota League Cycling Instructors who would be able to help with this lesson.

NOTE: In this lesson, students will watch a demonstration on how to change a flat tire and come away with an understanding of the equipment needed to change a flat. Time may not allow for each student to practice changing a flat. Ultimately, a fifty- to eighty-minute class period would be appropriate for students to have a hands-on experience learning how to change a flat tire.

Learning Objectives and National Physical Education Standards

At the end of this lesson, students will be able to:

1. Identify common causes of flat tires. (Standard 2)
2. Explain how to change a flat by replacing the tube. (Standards 2 and 3)

Timeline

30 MINUTES Fixing Flats

Materials and Equipment

- "How to Fix a Flat" video: [www.youtube.com/watch?v=i5K-DXt9djA](http://www.youtube.com/watch?v=i5K-DXt9djA)
- Computer, speakers, and projector with Internet connection, or Smartboard
- One bicycle with quick-release wheels
- One bicycle without quick-release wheels
- Crescent wrench or metric box/open wrenches (14mm & 15mm)
- Five to six wheels with tube and tire installed
- Five to six tubes
- Ten to twelve tire levers
- Baby powder
- Examples of Presta and Schrader valves (RESOURCE GUIDE PAGE 141)
- Hand pump or floor pump with gauge (with adjustable valves — Schrader and Presta)
- "How to Fix a Flat Tire" handout (RESOURCE GUIDE PAGE 142)
BIKE FUN! LESSON 4: Changing a Flat

FIXING FLATS

Focus Point: Few parts of a bicycle receive more abuse and neglect than the tires as they roll over concrete and asphalt along the ride. There is a lot of debris that is picked up during a bike ride. Getting a flat tire and not being able to fix it can ruin a ride but also, with younger students, make a bike unrideable until their parents have time or get an expert to help. To optimize rider safety, comfort, and peace of mind, ensure bicycle tires are properly inflated and maintained.

Materials and Equipment
• “How to Fix a Flat” video: www.youtube.com/watch?v=i5K-DXt9djA (three minutes)
• Computer, speakers, and projector with Internet connection, or Smartboard
• One bicycle with quick-release wheels
• One bicycle without quick-release wheels [OPTIONAL]
• Crescent wrench or metric box/open wrenches (14mm & 15mm)
• Five to six tires
• Five to six tubes
• Ten to twelve tire levers
• Examples of Presta and Schrader valves [RESOURCE GUIDE PAGE 141]
• Hand pump or floor pump with gauge (with adjustable valves—Schrader and Presta)
• Baby powder [OPTIONAL]
• “How to Fix a Flat Tire” handout [RESOURCE GUIDE PAGE 142]

Preparation
• Set up technology to view and listen to video from the Internet.

Discussion and Demonstration
1 Ask the students:
   • Has anyone experienced riding their bike and getting a flat tire?
   • What did you do?

2 Discuss the importance of being prepared to repair a flat:
   • Always carry tools on the bike to change a flat tire.
   • Always carry a spare tube on the bike.

3 Watch the video “How to Fix a Flat:” www.youtube.com/watch?v=i5K-DXt9djA.

4 After watching the short video, demonstrate how to remove and replace the rear wheel:
   a. Open the quick release and loosen it at least three full turns. Use a crescent or box/open end wrench for wheels without quick releases. Loosen the nut sufficiently to allow wheel removal. It may help to shift into the smallest gear, which releases tension on the chain and provides a reference point when replacing the wheel.
b. Taking care to pull the derailleur back, pop the wheel free, and guide the chain off the gears and away from the axle.

c. Replace the wheel by reversing the procedure. Rear wheels can only be replaced one way. If replacing a front wheel, make sure the quick release is on the left side of the bicycle. (Compare with the rear wheel.)

d. Adjust the quick-release tension by tightening the knob on the other side of the clamp. Correct tension is achieved when the clamp leaves a slight impression in your palm when closed.

e. Visually check that the wheel is centered in the frame and brake calipers. If not, open the quick release and gently push the wheel into the center while closing the clamp again.

Demonstrate how to fix a flat tire by following these steps:

a. Remove the rear wheel as described.

b. Remove any remaining air in the tire.

c. Starting at the valve stem, slip the flat end of the tire lever over the rim and under the bead. The end of the lever should be between the inside of the tire and tube. Clip the lever on one of the spokes. Insert another tire lever a few inches away (clockwise) in the same manner.

d. Slide this lever away from the valve stem and carefully around the edge of the rim (clockwise), guiding the bead up and over the wheel rim. After a few more inches, the bead should easily slide up and over.

e. Continue until the bead on one side of the tire is completely off the rim. This is enough to gain access to the tube and tire.

f. Pulling the tire aside, push the valve stem through the wheel and remove the tube, taking care to not lose the reference point of where the tube was installed in the tire.

g. Make a visual inspection of the tire. Look for punctures, holes, cuts, or debris inside the tire. If any are found, turn the tire inside out and carefully probe the area. If the foreign object is still imbedded, remove it. Avoid sweeping the inside of the tire with your fingers, as any object still imbedded can cause severe injury. If there is no apparent damage to the tire, turn your attention to the tube.

h. Find the hole by filling the tube with air. Its location, for most purposes, will tell you why it went flat. (Utilize reference point noted in “f”)

Installing the new tube:

a. Unwrap the new tube and add just enough air to “round it out,” so the tube has enough air in it to hold its shape, but not so firm its difficult to manipulate. Do not overinflate!

b. Dust a very small amount of baby powder all around the inside of the tire.

c. Line the valve stem up with the hole in the rim. Pull the tire aside and insert the valve stem down into the rim. Put the valve cap on (Schrader) or screw the washer on loosely (Presta).

d. Show picture from Resource Guide page 141 that shows the difference between the two valves.

e. Carefully, working clockwise, tuck the tube up over the rim and into the tire. Keep the valve stem straight (ninety-degree angle to the rim). If you need to let some air out, go ahead. Take your time!
f. When finished, verify there are no folds, kinks, or wrinkles in the tube, and that the valve stem is perpendicular to the rim.

g. Starting at the valve stem, push the tire bead over the rim by squeezing the top of it with your thumb and fingers. Hold it in place with one hand. Continue around the wheel clockwise, squeezing the bead up and over, with your fingers only. Keep the valve stem straight. As you work your way around to the valve stem, it will get progressively harder. Use of tire levers or screwdrivers at this point will practically guarantee ruining the tube. Rest your hands if necessary. Be patient!

h. Once you have the bead re-seated, verify that the tube is completely contained in the tire. Pull the bead away from the rim, looking for any small portion of the tube that might have slipped out. Pay extra attention around the valve stem.

i. Holding the valve stem with one hand, attach the pump, and pump the tire to 15–20 PSI. Check that the tire has seated properly on the rim. Let air out if necessary to adjust the tube.

j. Fill the tire to full recommended pressure. The wheel can be installed on the bicycle.

Activity (If Time Allows)

1. After the demonstration, divide the class into groups of two to three students. Each group will have a tire and set of tire levers, and a hand pump (with adjustable valves—Schrader and Presta).

3. Have members of each group practice removing one side of the tire and tube from the rim.

3. Practice replacing the tube and successfully placing the tire back on the rim. They should inflate the tire and put the wheel back on the bicycle to complete the activity.

4. Emphasize that bicyclists should always carry two to three tire levers, new tubes, and a hand pump in case of a flat tire.

Review

1. Ask students:
   - Do you think you might be able to change a flat tire someday?
   - What is the first thing you should do when you experience a flat tire?
   - How can you avoid getting a flat?
   - What tools are needed to change a damaged tube and fix a flat?

2. Distribute the “How to Fix a Flat Tire” handout to each student.
LESSON 5: Getting Started and Getting Stopped

OVERVIEW

Educational Goal: To develop the basic riding skills of using the “power pedal” position and braking.

Preparation

• Write the rules of safe bicycling on index cards—one per card.
• Set up two bike lanes for the “power pedal” position and braking activities. Diagram is provided on page 57.

Topics Covered

• Power pedal
• Braking

Learning Objectives and National Physical Education Standards

At the end of this lesson, students will be able to:

1. Demonstrate how to put the pedal in the power position and begin from a stopped position. (Standard 2)
2. Demonstrate hand signals including left turn, right turn, and slowing while on the bicycle. (Standard 2)

Materials and Equipment

• Six index cards
• Four cones
• Four ropes at least fifty-feet long (or use lines on gym floor)
• Masking tape or painters’ tape
• Measuring tape
• Chalk (used to mark lines on cement playground or parking lot)
• Whiteboard and markers, or Smartboard
• Bike and helmet for each student
BIKE FUN! LESSON 5: Getting Started and Getting Stopped

RULES OF THE ROAD PICTONARY
(Optional)

Focus Point: It is important to review and assess the understanding of topics learned in previous lessons before presenting new information regarding safe biking. It is essential that students have a long-term, basic understanding of the rules of the road, remember to do the “ABC Quick Check” before each ride, and fit their helmet properly.

Materials and Equipment
• Six index cards
• Whiteboard and markers, or Smartboard

Discussion
1 Review with students that bicyclists must follow the same rules of the road as drivers of automobiles. By Minnesota law, bicycles are defined as vehicles, so bicyclists must follow the same laws as motorists. To bike safely, we need to know Minnesota laws for operating your bicycle.

2 Ask students to recall the five key rules for bicyclists:
   • *Ride in the same direction as traffic, not against traffic.*
   • *Obey all traffic signs.*
   • *Ride on the road, not sidewalks.*
   • *Use hand signals.*
   • *Stay to the right.*
   AND . . . Always wear a helmet. While Minnesota does not currently have a law requiring bicyclists to wear a bicycle helmet, it is highly recommended.

3 Review with students that our bicycle must act like a car. Here are some reasons:
   • *The law requires cyclists to ride with traffic (in the same direction as cars).*
   • *Motorists should expect to see bicycle traffic coming alongside them. In order to be seen, bicyclists must ride where motorists expect to see them, on the right.*
   • *Traffic control devices (e.g., stop signs and traffic lights) face the normal flow of traffic.*
   • *Riding the wrong way facing traffic can lead to getting hit; a motorist could turn unexpectedly into you.*

4 Play a game of Pictionary of the rules of the road.
   • Have six index cards, one with each of the five key rules and one with the extra “rule” to always wear a helmet.
   • Pick a volunteer to be the first “drawer.” Have that student draw a picture of the rule of the road on the whiteboard or Smartboard without using any words.
   • The rest of the class guesses the rule of the road that the “drawer” is drawing.
   • The first student who guesses correctly is the next “drawer.”
   • Continue to play the game until all six index cards have been drawn and correctly guessed.
Focus Point: Sometimes getting rolling is the hardest part of riding a bike. This lesson teaches the “power pedal” position that helps the rider begin pedaling quickly and efficiently. The “power pedal” is a “take-off” position that gets the bike off to a quick start.

Materials and Equipment

- Bike and helmet for each student
- Two cones
- Four ropes at least fifty-feet long
- Two stop signs
- Spray chalk
- Open space to set up course

Preparation

- In a gym, on a cement playground, or in a parking lot, set up two lanes at least fifty feet in length, twelve-feet wide, and marked off with ropes, chalk, or cones. Place a “Stop” sign at the end of each lane.

Use the following diagram to set up the course:

Discussion

1. Ask students:
   - Do you ever have trouble getting your bicycle moving from a stop?
POWER PEDAL
(CONT.)

2 Demonstrate to the class the “power pedal” position with the following explanation:
   • The “power pedal” position helps you start to pedal in the most powerful way by giving you the most leverage on your first push of the pedal.
   • To get to this position, backpedal slightly until right pedal is at the two o’clock position or the left pedal is at ten o’clock. This will be the push-off pedal. Starting from this position allows us to push down on the pedal as we lift our body on to the seat and move forward.

3 Instruct students:
   • Put on your helmet, go to your bikes and do an “ABC Quick Check.” Then stop and straddle your bikes and wait for further instructions.

Activity

1 Instruct students:
   • With students on their bikes, line up “shoulder to shoulder” facing the teacher. Number off by three.

2 Call out a number (one, two, or three) and students of that number will “Go.” Instruct students to put one foot on the “down” pedal and push off with their other foot on the floor to see how far they can travel. Ask students:
   • How far can you coast?

3 Now instruct students to use the “power pedal” technique. Direct them to:
   • Backpedal slightly until one pedal is at the two or ten o’clock position, the “power pedal.”
   • Starting from this position, push down on the pedal and lift your body on to the seat and pedal.

4 Ask students:
   • Which pedal position works best?

5 Instruct students to line up single file in two lines at the start of each lane on the course. The first student in each line rides down his/her lane and looks for the stop sign (these could be marked with tape or chalk across the lane.) Explain to the students that the right lane is for right turns and the left lane is for left turns.

6 Direct students to take off in the “power pedal” position and drive toward the end of the lane to the “Stop” sign. Each student says aloud “Stopping,” gives a hand signal, stops, places one foot on the ground, and looks left-right-left for traffic. Explain that communicating “Stopping” verbally and with a hand signal is especially helpful if they are riding in a group with others behind them.

7 The next group of students begins as the first group is approaching the stop sign.

8 Students execute the drill two times in each lane.
BRAKING

Focus Point: For children, the most frequent cause of bicyclist/automobile crashes is the bicyclist’s failure to yield right-of-way. Bicyclists must stop when they exit a driveway or enter any road, and at intersections with stop signs or red lights. This activity ensures that students can perform essential safety techniques such as starting and stopping quickly and effectively.

Materials and Equipment

- Bike and helmet for each student
- Two cones
- Four ropes at least fifty-feet long or spray chalk or sidewalk chalk
- Four “Stop” signs
- Open space

Preparation

- Use the same course from the “power pedal” activity. In a gym, on a cement playground, or in a parking lot, set up two lanes at least fifty feet in length, twelve-feet wide, and marked off with ropes, chalk, or cones. Place a “Stop” sign at the end of each lane. See diagram on page 57.

Discussion

1. Review hand signals: right, left, and stop.

2. Ask students:
   - Which hand powers the rear brake?
     - The right hand.
   - Why is it important to know the difference between the left hand brake and the right?
     - If you press too hard on the left brake, which powers the front brake, you could fall over the top of your handlebars.

NOTE: Depending on the child’s age and their bicycle, some students might not have hand brakes but have rear coaster brakes. If that is the case, instruct students with coaster brakes that they need to pedal backward to “put the brakes on.”
BIKE FUN! LESSON 5: Getting Started and Getting Stopped

Activity

NOTE: The concepts practiced in this activity may be combined with the previous activity “Power Pedal.”

1. Use the same course from the “power pedal” activity. (See diagram on page 57.)
   Divide students in two groups; single file behind each lane.

2. One student from each line goes at a time.

3. Students should begin riding in the “power pedal” position.

4. Students ride down lane; look for the first stop sign.

5. Students signal stop, brake with both brakes, stop, and straddle bike.

6. Students look left-right-left for traffic; when clear, proceed.

7. Students use “power pedal” position to begin again.

8. Students repeat drill at the second stop sign, but need to signal which direction they will be going.

9. Students ride back to the same start lane.

10. Students execute the drill two times in each lane.

BRAKING

[CONT.]

DISCUSSION & ACTIVITY 15 MINUTES
LESSON 6: Drive My Bike Like a Car

OVERVIEW

Educational Goal: To develop the basic riding skills of scanning and proper positioning on the road.

Preparation

• Set up a riding course based on the included diagram to practice riding in a straight line, scanning and proper positioning on the road. Diagram on page 62.

Topics Covered

• Riding in a straight line and scanning
• Proper positioning on the road

Learning Objectives and National Physical Education Standards

At the end of this lesson, students will be able to:

1. Demonstrate the ability to ride their bicycle in a straight line for at least twenty feet with one hand on the handlebars. (Standards 1 and 2)

2. Demonstrate the ability to scan, or look over the left or right shoulder, to identify the signal given by the teacher. (Standards 1 and 2)
RIDING WITH ONE HAND

Focus Point: Before riding to school or to a friend’s house, children first need to have sufficient bicycle handling skills, including the ability to ride in a straight line; ride while scanning the situation ahead, behind, and to the side; stop quickly using the bicycle’s brakes without swerving, falling or colliding with anything; and use proper hand signals to communicate riding direction. Knowing how to prepare for a bicycle ride and following the rules of the road are equally as important as having sufficient bicycle handling skills.

Materials and Equipment

- Bike and helmet for each student
- Two cones
- Four ropes at least fifty-feet long (or use lines on gym floor) or chalk (used to mark lines on cement playground or parking lot)
- Measuring tape
- Two stop signs

Preparation

- Use the same course setup from the “Power Pedal” activity in Lesson 5. In the gym, on a cement playground, or in a parking lot, set up two lanes at least fifty-feet in length, twelve-feet wide, and marked off with ropes, chalk, or cones. Place a “Stop” sign at the end of each lane.

Use the following diagram to set up the course:
Discussion

1. Ask the students:
   - Which side of the road should you ride on?
   - Bicycles ride on the right side of the street, as far right as practical.

2. Instruct the students to get a bicycle and helmet. Ask the students to:
   - Put your helmets on and check for proper fit.
   - Check for proper maintenance (“ABC Quick Check”).
   - Tuck in shoelaces, roll up pants, or tuck pants into your socks.
   - Stand over your bike in straddle position.
   - Hold handlebars with both hands.

3. Direct the students to keep their hands on the handle bars, arms straight (not bent), and look over their left shoulder by turning their head only. Ask the students:
   - How far can you see?

   Then direct them to look over their right shoulder, arms straight by turning their head only.

4. Now direct the students to bend their elbows and look over their left shoulder.
   Ask the students:
   - How far can you see now?

   They should be able to see farther, but ask them to look at the handlebars and front wheel.
   - Did the front wheel turn? Often you turn the handlebars in the direction you are looking while riding. You could swerve into traffic and crash.

5. Demonstrate how to take the left hand off of the handlebars and put it on hip before looking over the shoulder. A person can turn farther to see more and the handlebars stay straighter.

6. Now, practice riding a straight line with both hands and then with one hand on the handlebars. Remind students:
   - One-handed cycling should be used when looking backward for traffic and signaling.
BIKE FUN! LESSON 6: Drive My Bike Like a Car

RIDING WITH ONE HAND
[CONT.]

Activity

NOTE: To save time, combine this activity with “Scanning” (page 65).

1. Announce to the students that they will be driving their bikes down the lanes in straight lines. The right lane is for right turns and the left lane is for left turns.

2. Review with students to take off from the “power pedal” position (two or ten o’clock position), push down and then drive to the end of the lane with both hands on the handlebars. Ride in a straight line, signal when appropriate and stop at the stop sign. Students in left lane turn left, students in right lane turn right, and return to the line at the start.

3. The second time students should ride down their lane with their right hand on the handlebar, also practicing using their hand brakes, and look for the stop signs (could be marked with tape or chalk across the lane). Students practice driving their bike in a straight line without weaving out of their lane. Stress that this exercise is about riding in control and is not a race.

4. Students repeat and ride with the other hand off of the handlebars, also practicing using their hand brake.

5. Students repeat two times and add signaling while practicing left/right (one hand only) on the handlebars.

6. Stagger the starts so that the next student begins riding when the previous student is just over halfway down the lane.
Activity

Use the course from “Riding with One Hand” (page 62).

1. Explain to the students that you and a helper (a student or adult volunteer) will be standing halfway down the lane. The student will ride past the teacher or helper and when the teacher/helper yells, “Scan!,” the student should look/scan back to see how many arms the teacher/helper is holding up. Students call out the number of arms they see.

2. Instruct two students to go at a time, one from each lane.

3. Students ride one-handed and in a straight line past the teacher/helper who is standing halfway down the lane. Stress to students when “scanning” (“looking back”) to put one hand on their hip and turn their body, not the handlebars.

4. Once past the teacher/helper, students scan/look back.

5. The teacher/helper holds up one, two, or no arms.

6. Students drive their bicycle to the end of the lane, signaling left or right, then stop and return to the start.

7. Repeat this drill as time allows.
For additional information on promoting safe walking and bicycling, contact BikeMN at education@bikemn.org.
LESSON 7: Riding on the Road

OVERVIEW

Educational Goal: To understand how to drive a bike like a car by being predictable, riding on the right, making proper turns, and navigating intersections.

Creative Class Time Needed
- Written for a thirty-minute block, although a sixty-minute block is recommended. One suggestion is to coordinate the schedule with other teachers so that the lesson can be combined with a physical education class.
- Another option, have one class spend extra time in another specialist class and then switch this later in the week to every class equal time.

Preparation
- This lesson puts students on the road to practice essential riding skills. For safety reasons, the best option is to use a quiet street near the school with a low volume of traffic.
- If an acceptable street is not available, consider getting permission from the city for this lesson to barricade a section of street near the school that has at least one hundred feet of straightway and intersection.
- As a final option, set up a course in the parking lot.
- Invite volunteers to help with the on-the-road activities.

Materials and Equipment
- Transparency of intersection (Resource Guide page 116)
- Overhead projector or Smartboard
- Erasable markers
- Bike and helmet for each student
- Sidewalk chalk or spray chalk
- Boxes to act as vehicles (OPTIONAL)
- Printout of vehicles (Resource Guide pages 108-10)
- Four cones (OPTIONAL)
- Four ropes at least fifty-feet long (OPTIONAL)
- Measuring tape
- One adult volunteer per five to eight students
- Safety vest for each adult
- Cones to act as safety aids or barricades to block off street
OVERVIEW
(CONT.)

Topics Covered

• Being predictable
• Riding on the road
• Navigating intersections

Learning Objectives and National Physical Education Standards

At the end of this lesson, students will be able to:

1. Demonstrate the proper positioning while riding on the road. (Standards 1, 2, and 4)
2. Demonstrate how to drive their bicycle safely through an intersection. (Standards 1, 2, and 4)
Focus Point: It is vital that children learn where to position themselves in the road, especially when on a bicycle approaching intersections and with respect to making left and right turns. Predictable, safe bicyclists communicate with other vehicles by using appropriate positioning and proper hand signals. Proper lane or appropriate positioning means driving your bike on the street in a way that communicates to others where you plan to go next and that you understand the rules. Many people choose to ride too far to the right in a position that isn’t safe. When you ride too far to the right, motorists may not understand which direction you are going and may not see you.

Materials and Equipment

- Transparency of intersection [RESOURCE GUIDE PAGE 116]
- Overhead projector or Smartboard
- Erasable markers
- Bike and helmet for each student
- One adult volunteer per five to eight students
- Safety vest for each adult
- Enough cones to act as safety aids or barricades to block off street
- Sidewalk chalk or spray chalk
- Boxes to act as cars [OPTIONAL]
- Printout of vehicles [RESOURCE GUIDE PAGES 108–10]
- Four cones [OPTIONAL]
- Four ropes at least fifty-feet long [OPTIONAL]
- Measuring tape

Preparation

- The activity is written for a thirty-minute block, although a sixty-minute block is recommended.
- This activity can be completed on a real street with a barricade if a city permit is obtained.
- Invite volunteers to assist with outdoor activity.

Discussion

1. Explain again to students that bicyclists must ride on the right side of the road and in a straight line to be predictable, as practiced in Lesson 5. But what happens when they travel through intersections? Use the intersection overhead and erasable markers to demonstrate where to ride on the road when going straight, turning right or left.

2. On the overhead, label each lane of travel: “1” (inside), “2” (middle), “3” (outside or right), and an arrow to indicate the direction of travel.
3 Draw and explain going straight through an intersection with the following example:
   • The bicyclist normally rides in position “3,” several feet from the curb and remains in position “3” when going straight through an intersection. The bicyclist moves into position “2” if moving straight through the intersection.

NOTE: There are number of reasons for a bicyclist to move into position “2” on the roadway. They include when passing parked cars and/or navigating objects. If there is any indication or concern about the lane being too narrow to share with motorists, the bicyclist should move from position “3” to position “2.”

4 Draw and explain taking a right turn at an intersection with the following example:
   • The bicyclist normally rides in position “3” and remains in position “3” when signaling and turning right through an intersection. Signaling should occur one hundred feet (about two houses) before turning.

5 Demonstrate the proper procedure for making a right turn.
   • Scan behind for oncoming traffic when approaching the stop sign.
   • Remain on the right hand side of the road in position “3.”
   • Give your right hand turn signal at least one hundred feet before the intersection.
   • Stop at the stop sign, look left, right, and left again.
   • When clear, give right hand signal once again before proceeding to turn right.
   • Move into position “3.”
6. To reinforce this skill, you should pretend like you are riding a bicycle and demonstrate this maneuver.

7. Ask if there are questions, and then instruct students to practice the same maneuver.

8. Draw and explain taking a left turn at an intersection with the following example:
   - The bicyclist normally rides in position “3” but when turning left, they must move to position “1.” To get to position “1,” they must scan over their left shoulder first and check for traffic, signal a left turn and then move to position “1.” They turn left and will go to position “3.”
   - To demonstrate, the teacher should pretend like they are riding a bicycle and demonstrate this maneuver in the classroom by “riding, scanning, signaling, moving, scanning, and moving to the left.”

9. Ask if there are questions. Instruct students to practice the same maneuver before getting outside on the bikes.

10. Transition outside to get bikes and helmets.
BIKE FUN! LESSON 7: Riding on the Road

DRIVE YOUR BIKE LIKE A CAR
(CONT.)

Activity

NOTE: A good place for this activity is at an intersection near the school where there is a four-way stop with school zone signs nearby. If one is not available, use an intersection close to school with low traffic volume so as not to interfere with regular traffic and to help ensure student safety. Teacher and volunteers should be wearing safety vests for visibility.

1 Use sidewalk chalk or spray chalk to label the lane with the appropriate “1,” “2,” and “3” positions (like on the overhead diagram). Teacher should stand in the middle of the intersection throughout this activity and have one volunteer stand at least twenty or thirty feet from the corners to help the students know when to start scanning, signaling, and moving. Explain to students that they will be practicing proper position on the road at an intersection.

2 Have the students complete an “ABC Quick Check” on their bicycles and line up side-by-side with their bikes facing you, straddling their bikes. Practice hand signals.
   • Stopping (left hand down, arm bent down at elbow)
   • Right turn (right arm and hand straight out to the right)
   • Left turn (left arm and hand straight out to the left)

3 Show students the three positions labeled on the road with chalk.

4 Divide the class into two groups or more depending on the number of volunteers available. (Recommended ratio is one adult per five to eight students.) Place groups at intersections, approximately fifty yards before the stop sign.

A. RIGHT TURNS
   Have the students practice making right turns one at a time at each stop sign. Remind them to aim for the number of the position they need to be in when making a right turn.

B. STRAIGHT THROUGH AN INTERSECTION
   Discuss and demonstrate the proper road position for a “straight through” movement in an intersection. When traveling straight through an intersection, bicyclists should remain in position “3.”
   • Scan behind for oncoming traffic when approaching the stop sign.
   • Continue in position “3.” This will inform motorists of your intent to go straight through the intersection and prevent any right turning cars from pulling in front of you and cutting you off.
   • Remember to aim for the number “3.”
   • Give your signal for stopping. Stop at the stop sign, look left, right, and left again.
   • When clear, move straight through the intersection. Remain in position “3.”
   • Make a U-turn and line up in the new lane.
C. **LEFT TURNS**

Discuss and demonstrate the proper traffic procedure for left turns.

- **Scan over your left shoulder for traffic.**
- **While scanning, give the left hand turn signal.**
- **Move to the left side and into position “1” when it is clear and safe to do so.**
- **Stop at the stop sign, look left, right, left, then look across the intersection to be sure there is no traffic coming straight through.**
- **Proceed through the intersection and move to position “3” after making the left turn.**

**NOTE:** In the absence of proper infrastructure for left hand turns or in the presence of traffic congestion, a **box turn** is recommended. Make a box turn by riding through the intersection, then repositioning behind the crosswalk at the new corner of the intersection and wait for a green light. If there is no traffic light, wait until it is clear to go. If space does not allow the bicyclist to be behind the crosswalk, they may stop in it and allow any pedestrians to cross. A bicyclist can also dismount their bike and use the crosswalks.

After everyone has completed all three intersection movements, gather the class and ask:

- **How does the bicyclist’s position in the road tell motorists what the bicyclist is planning to do?**
- **What are the proper procedures for making turns? For stopping? For proceeding safely through an intersection?**
For additional information on promoting safe walking and bicycling, contact BikeMN at education@bikemn.org.
LESSON 8: Going for a Ride! A Two Day Activity!

OVERVIEW

Educational Goal: To gain confidence in safe on-road cycling and demonstrate safe bicycling skills.

Creative Class Time Needed

• While the neighborhood ride can be done in a thirty-minute block as outlined here, ideally a sixty-minute block is recommended. Try doubling up physical education classes. There will be more students and more volunteers will be needed.
• Another option, have one class spend extra time in another specialist class and then switch this later in the week to give every class equal time.

Preparation

• Double check to ensure you have a signed agreement form from every student before the field trip.
• Consider using your school’s standard permission slip for this type of activity.
• Invite volunteers to help with this activity. A standard ratio is two adult volunteers per five to eight students. Parents, law enforcement, and bicycling club members are good groups to ask for volunteers.
• Check www.bikemn.org/education/minnesota-league-cycling-instructors for local League Cycling Instructors (LCI). This is another group to ask for volunteers from. Invite LCIs to hold essential “Need to Know” bike education sessions with volunteers in their community who are interested in participating in events, trainings, etc. These sessions can be as short as a thirty-minute classroom session or can involve a two-hour hands-on session in a parking lot and/or a neighborhood ride. This is the League of American Bicyclists’ recognized way of offering a short course that covers the basics (e.g., rules of the road, etc.). LCIs are also an excellent source of volunteers.

Lesson 8

Day One Timeline

10 MINUTES Post-test (OPTIONAL “Homework”) 77
30 MINUTES Neighborhood Ride 78

Day Two Timeline

30 MINUTES Neighborhood Ride 78
10 MINUTES Graduation (OPTIONAL) 80

Materials and Equipment

• “Volunteer Guide to Group Riding” (RESOURCE GUIDE PAGES 143–44)
• Bike and helmet for each student
• Bicycle floor pump with gauge
• Two adult volunteers for each group of five to eight students
• Safety vest for each adult
• Post-test for each student for Day One (RESOURCE GUIDE PAGES 129–31)
• Pencil for each student for Day One
• Graduation certificates for Day Two (RESOURCE GUIDE PAGE 134)
OVERVIEW

[CONT.]

> If League Cycling Instructors are not available, provide volunteers with the “Principles of Traffic Law” document found at www.bikemn.org/education/srts. Instruct volunteers to read over this document prior to the day of the ride.

• One or two days before the lesson, send volunteers the “Volunteer Guide to Group Riding.”

> A strategy for mapping a route may be to recruit a local bicyclist to ride the roads in the neighborhood and help select the route. Another strategy is to connect with a local bike shop to seek out a partner. Finally, there are several online digital resources to use for “drawing” a route for volunteers to see prior to the day’s ride. One to try is www.mapmyride.com.

• Each volunteer should bring their fully-operable bicycle and helmet for the neighborhood ride. Encourage volunteers to bring a backpack to carry a first aid kit, cell phone, and the map of the route.

• Ask volunteers to arrive fifteen minutes prior to class for any last-minute changes, concerns or questions, and to review the map of the route.

Learning Objectives and National Physical Education Standards

At the end of this lesson, students will be able to:

1. Demonstrate the ABC Quick Check. (Standard 3)
2. Demonstrate proper helmet fit. (Standard 3)
3. Demonstrate proper use of hand signals. (Standards 3 and 4)
4. Demonstrate proper technique for scanning and braking while biking. (Standards 3 and 4)
Focus Point: The post-test is used as an evaluation tool to measure the students’ improvement and as one element for the teacher’s evaluation of this curriculum.

NOTE: If time allows, students can complete this prior to the ride. You may also give it as a homework assignment.

Materials and Equipment
• Post-test for each student [RESOURCE GUIDE PAGES 129–31]
• Pencil for each student

Discussion
1 Explain to students that they will be taking a written post-test to evaluate their knowledge of traffic rules and road skills.

Activity
1 If time allows, have students complete the test prior to the ride. If not, give it to students as a homework assignment that must be returned the next class session.

2 Once everyone has completed the test, have them exchange their test with a partner to correct as you provide the answers.

3 Ask students to hand in their tests after they correct them.
DAY ONE & TWO: NEIGHBORHOOD RIDE

Focus Point: One advantage of students riding in small groups is that they learn a more realistic sense of bicycling in traffic and will gain confidence in safe on-road cycling.

NOTE: Each volunteer should have their own bicycle and helmet for the neighborhood ride. Encourage volunteers to bring a backpack to carry a first aid kit and cell phone. Volunteers should also have a paper or digital map and “Volunteer Guide to Group Riding” prior to the group ride.

Materials and Equipment

- “Volunteer Guide to Group Riding” (RESOURCE GUIDE PAGES 143–44)
- Bicycle and helmet for each student
- Two adult volunteers for each group of five to eight students
- Safety vest for each volunteer
- Map of route for each volunteer

Preparation

Preparing the route:
- Rides should begin on low- to medium-traffic streets around the community not over thirty-five miles per hour; include several right and left turns and a left turn at a light.
- It may be helpful to create a web-based or digital route to send to adult volunteers prior to the ride.
- Include a few “pull off” points to safely stop with the group for a brief discussion of the ride and address any issues or questions.

Preparing volunteers:
- Meet with volunteers at least fifteen minutes before class to discuss the route with printed maps and group riding strategy.
- Briefly explain traffic rules and courtesies while driving bicycles.
- Stress to volunteers their responsibility in helping to keep the children safe through enforcement and encouragement.
- Have first aid kits for volunteers to carry and an emergency phone number for adults to call.

Group riding:
- One adult should ride at the beginning of the group to act as the lead.
- Place responsible, mature, and better skilled students in the front of the group.
- One adult should ride in the back of the group, communicating with students to keep right and hand signal, and facilitating communication among each other.
- Adults should allow each student to negotiate intersection movements independently.
- At stop signs, adults can stand to the left of the students, coaching them through intersections.
- Students should be told to wait a couple of hundred feet up the road for the rest of the group.
Activity

1. Have students organize in groups of five to eight.

2. Have students get their bike, complete an ABC Quick Check, and properly fit their bike and helmet.

3. Volunteers should have their bicycle, helmet, safety vest, and backpack with map, cell phone, and first aid kit. Take time for the volunteers to introduce themselves to the students. Describe to the class the role of the volunteer:
   - One volunteer will be at the beginning of the group and one at the back of the group.

4. Discuss the riding activity and riding rules with the students.
   - Take responsibility for yourself. Don’t just follow the leader, especially when crossing streets, driveways, or intersections. If a traffic light turns yellow and half of the group rides through, you should stop and the group will wait.
   - Ride single file and ride on the right, pass on the left if absolutely necessary (limit passing), and announce to the other bicyclists “Passing on your left!”
   - Communicate with other riders verbally and with hand signals (left and right turns, stops, and hazards). Hazards are communicated by pointing down to the ground at the pothole, large rock, glass, etc. Slightly shaking your finger while pointing helps the rider behind understand better that you are signaling a hazard.
   - Ride as a group, but leave at least one bike length between you and the next rider.
   - Everyone pulls off to the right side of the roadway when it is safe to do so and there is space for the group to gather to discuss and rest, if necessary.

5. After all students have completed the activity, gather them together and have a debriefing of the neighborhood ride. Plan to integrate this feedback into future rides. Debriefing questions may include:
   - How did you feel about the ride? Did you feel prepared, confident?
   - What did you like about the ride? What skills from our unit were you able to use?
   - Did anything alarm you during the ride? If so, what?
   - If you could change anything about the ride, what would you change?
Focus Point: The students will participate in a “graduation” of the program and receive a certificate. Rewarding the students and providing a feeling of empowerment will help them grow lifelong skills as bicyclists.

Materials

• Graduation certificates [RESOURCE GUIDE PAGE 134]

Options

You can organize the graduation ceremony as elaborate or simple as you’d like. Some ideas:

• Invite parents to attend.
• Have the principal hand out the certificates.
• Invite a police officer to the “graduation” to congratulate the students.
BONUS LESSON 1: Rules of the Road

OVERVIEW

Educational Goal: To develop a basic understanding of the rules of the road, being predictable, and using proper hand signals while riding a bicycle.

Topics covered
- Road signs and rules
- Hand signals
- Being predictable while riding

Learning Objectives and National Physical Education Standards
At the end of this lesson, students will be able to:

1. Demonstrate hand signals for left turn, right turn, and stopping without being on the bicycle.
2. Understand when they ride their bike it is like driving a car; the same traffic laws apply. (Standards 1, 2, and 4)
3. Understand the meaning of a variety of road signs. (Standards 1, 2, and 4)
4. Understand the importance of being predictable to other traffic. (Standard 2)

Timeline

| 10 MINUTES | Rules of the Road | 82 |
| 10 MINUTES | Traffic Hand Signals | 83 |
| 10 MINUTES | Being Predictable | 84 |

Materials and Equipment
- Picture of different road signs: stop, yield, and one-way (RESOURCE GUIDE PAGES 119–26)
- Traffic Signs and Markings worksheet for each student (RESOURCE GUIDE PAGES 119–26)
- Pencil for each student
BIKE FUN! BONUS LESSON 1: Rules of the Road

RULES OF THE ROAD

Focus Point: Many bicyclists, pedestrians, and motorists do not fully understand traffic rules and road signs. They do not know regulations concerning right-of-ways, correct road position, and turn signals. Understanding road signs helps bicyclists behave safely in traffic and anticipate the actions of other cyclists, pedestrians, and motorists.

Materials and Equipment

- Picture of different road signs: stop, yield, and one-way [RESOURCES GUIDE PAGES 119–126]
- Traffic Signs and Markings worksheet [RESOURCE GUIDE PAGES 145–48]
- Pencils

Discussion

1. Introduce a variety of road signs by displaying the signs: stop signs, yield signs, and a one-way sign. Ask students to explain what these signs mean to them:
   - Do bicyclists need to follow the rules of the road and obey the road signs?
   - Yes. Bicyclists are to behave like vehicles and follow all rules of the road.

Activity

1. Hand out worksheet “Traffic Signs and Markings.” Ask students to work with their neighbor on the right and fill in the name of as many signs as possible and its purpose in five minutes.

2. After five minutes, stop the students. Ask them to follow along on their worksheet as you discuss the correct names for each sign and their purpose.

VOCABULARY

Law: a rule or regulation set up by a government that everyone must follow
**TRAFFIC HAND SIGNALS**

**Focus Point:** Just like vehicles use turn signals and brake lights to let traffic know what they will do next, bicyclists use hand signals. Using hand signals to show stopping and turning can help the bicyclist show expected behavior and communicate with traffic about where the bicyclist is going.

**Discussion**

1. Ask students the following questions to introduce hand signals while bicycling:
   - *Do car drivers have to communicate where they are going?*
   - *What happens if they don’t?*
   - *How do drivers communicate where they are going?*
   - *What if a car’s turn signals were not working?*

2. Ask the students how they can communicate with other bicyclists, drivers, and pedestrians.

3. Demonstrate hand signals by using the diagrams below and practice hand signals with the students. It is acceptable to teach one or both ways to make a right-turn signal, but younger students usually have an easier time remembering to simply point the direction that they are going to turn. **Demonstrate with your back turned toward the students so that they can imitate you.**

```
STOP  LEFT TURN  RIGHT TURN  RIGHT TURN (ALTERNATIVE)
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**Activity**

1. Instruct students to line up single file and explain how to play “Follow the Leader.”

2. Tell students to walk straight ahead, and then call out left, right, or stop. Ask students to signal with their hand and move in the direction or stop as you call out the commands.

3. Once they’ve had practice, increase the speed of the game.
Focus Point: Being predictable is one of the keys to safe bicycling. If bicyclists follow traffic rules, in turn “being predictable,” motorists will come to respect bicyclists as drivers of vehicles. Acting like a vehicle means signaling turns, turning from the correct lanes, and stopping at red lights. Motorists can then predict what bicyclists will do.

Materials and Equipment

- Safety Flashcards [OPTIONAL—RESOURCE GUIDE PAGES 146–48]

Discussion

1. Discuss with students that all traffic needs to move predictably. In fact, that is why we have traffic laws.

   - Being predictable means doing what drivers expect you to do, and not surprising them. It doesn’t mean that drivers will have to think and analyze in order to predict your behavior; it means that they automatically know what you are going to do.

2. Explain to students:

   - Predictability comes from following the rules and using hand signals, but also from using proper lane positioning.
   - Proper lane position means ride on the right, with traffic. Use the lane furthest to the right that heads in the direction that you are traveling.

3. Explain to students:

   - Being predictable means:
     > Ride on the right.
     > Obey all signs and signals.
     > Don’t turn left from the right side of the road.
     > Don’t swerve or turn suddenly.

4. Ask students:

   - What are other things you can do to ride predictably?
     > Ride in a straight line.
     > Stop at stop signs and obey other traffic signals.
     > Signal where you are going.

5. [OPTIONAL] Use the Safety Flashcards while students line up. Hold up a flashcard and ask students to raise their hand to answer the question on the flashcard. When a student answers a question correctly, he should go to the end of the line. Continue as time allows.
BONUS LESSON 2: Courtesy and Communication

OVERVIEW

Educational Goal: To recognize the importance of courtesy and communication while riding a bike.

Preparation

• (OPTIONAL) Set up technology to view and listen to video from the Internet.
• Prior to lesson, identify four students who are wearing appropriate bright-colored clothes for bicycling, or have bright-colored clothing available and ask for volunteers to wear it.

Topics Covered

• Communicating with others
• Courtesy
• Being visible
• Being predictable

Learning Objectives and National Health Education Standards

At the end of this lesson, students will be able to:

1. Describe and demonstrate how to communicate and be courteous to drivers while riding a bike. (Standards 1, 4, 5, and 7)
2. Demonstrate appropriate clothing and materials to increase visibility while riding a bike. (Standards 1, 3, 4, 5, 7, and 8)

Timeline

<table>
<thead>
<tr>
<th>Activity</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication and Courtesy</td>
<td>15 min.</td>
</tr>
<tr>
<td>Can You See Me Now?</td>
<td>15 min.</td>
</tr>
<tr>
<td>Gearing Up (OPTIONAL)</td>
<td>15 min.</td>
</tr>
</tbody>
</table>

Materials and Equipment

- Reflective jacket or vest, arm/leg bands, set of kneepads, bright-colored clothing, sunglasses
- Three scenarios handout
  (RESOURCE GUIDE PAGE 169)
- Bed sheet
- Bicycle
- Backpack with reflective tape
- Helmet with reflectors or light
- Flashlight
- Index cards
- Sets of headphones
- Computer, speakers, and projector with Internet connection, white wall or Smartboard
- www.youtube.com/watch?v=ftzJp2qYdu0 (OPTIONAL)
- www.youtube.com/watch?v=OloW0khkO0bl (OPTIONAL)
BIKE FUN! BONUS LESSON 2: Courtesy and Communication

COMMUNICATION AND COURTESY

Focus Point: A defensive driver of any vehicle takes precautions to avoid crashes. To do so, a driver must abide by all the rules and regulations set forth by the law. However, there are some other skills that are just as effective in keeping cyclists and all road users safe when sharing the road. Among them are courtesy and communication.

Materials and Equipment

- Index cards
- Helmets
- Set of knee pads
- Sets of headphones
- Pairs of sunglasses
- Scenario handout (RESOURCE GUIDE PAGE 169)

Discussion

1. Ask students what are ways of communicating while riding a bicycle. Accept appropriate answers. May include:
   - When riding a bicycle, it is important to communicate your intentions to other road users, such as motorists, pedestrians, or other members of the traffic. This is called being predictable. One way to let others know what you intend to do is to communicate your intentions.
   
   - Communication involves two people: the sender and the receiver. If a bicyclist signals his/her intention to make a right turn but the driver behind or in front of him/her does not see the signal, the bicyclist is in danger of being cut off by the driver. Communication can be verbal, use hand signals, or both. Equally important is your position in the road. Proper lane position is an important way to signal your intentions.
   
   - Drivers often wear sunglasses and have tinted windshields. They may appear to be looking at the bicyclist, but not really see them. Make yourself conspicuous; let the driver know you are there and what your intentions are.

   - The definition of “right-of-way” is the right to move onto or across a road before other people or vehicles.

VOCABULARY

Courteous: polite, respectful, or considerate in manner

Predictable: happening or turning out in the way that might have been expected or predicted

Conspicuous: obvious to the eye or mind

Right-of-way: the right to move onto or across a road before other people or vehicles
Ask students to explain some ways to be courteous while riding a bike. Accept appropriate answers. May include:

- **Being courteous to others can go a long way.** Treating others with respect and courtesy will get you the same in return. This means yielding and giving an audible signal to pedestrians and thanking motorists with a nod or wave for giving you the right-of-way.

- **Sharing the road with all road users equates to everyone following the rules and remembering to be courteous and patient with each other.**

- **On narrow two lane roads with high volumes of traffic, a bicyclist may choose to occasionally pull off the road to allow cars that are backing up to pass (if and when there is a safe spot to do so).** This is a courteous demonstration of “sharing the road.”

**Activity**

1. Divide the class into groups of eight to ten students. Give each group a scenario to role play (see Scenario handout). Have a set of props available for the students to use during their role playing. Encourage creativity and teamwork.

2. Allow about ten minutes for each group to practice their scenario. Each group will present their scenario to the class. After each group presentation, discuss the significance of the skit and how it applies to the real world of bicycling and driving.

- **What do you do when you are in a crowded space?**
- **Is it safe to assume?**
- **How important is it to be patient?**
BIKE FUN! BONUS LESSON 2: Courtesy and Communication

CAN YOU SEE ME NOW?

Focus Point: Many bicycle- and pedestrian-related crashes occur because the motor vehicle driver did not see the bicyclist or pedestrian. Bright and light colors—such as white, yellow, orange, neon, and hot pink—are the most visible, particularly in low-light conditions. Contrasting colors—such as stripes—are also great attention-getters. Children should wear these colors whenever they bike or walk. Additionally, backpacks and helmets should be brightly colored. When possible, children should avoid riding at night or dusk when visibility is low. However, those who must travel at such times should use extra caution and wear a jacket with reflective stripes, or other reflective equipment over their clothing and have lights on their bike.

Materials and Equipment
- Four students who are wearing appropriate bright-colored clothes for bicycling. If not, have bright-colored clothing available and ask for volunteers to wear it.
- Reflective jacket with stripes or vests, backpack or cinch bag
- Sunglasses
- Bed sheet
- Flashlight

Discussion
1. Ask students:
   - Why is being visible important when riding a bicycle?
   - How can you make sure a vehicle driver sees you when you are riding your bike?
   - How can you be predictable in traffic?

Activity
1. Dim the lights and have the students close their eyes. Have the four volunteer students stand side-by-side in a row at the front of the room. Have the volunteers hold up the bedsheet in front of them so they are hidden and then drop it. Ask the class:
   - Who do you see first or who is most visible?
   - Who do you see second?
   - Who is least visible?
   - Which colors are most visible?

2. Explain to students which colors are most visible.
   - Most visible colors: yellow, white, orange, neon, hot pink, bright green; also, contrasting colors and patterns such as hot pink and blue, stripes, and polka-dots.
   - Least visible colors: dark colors such as black, brown, navy, forest green, and camouflage materials.
   - Explain that even the most visible colors are visible only when there is some light present. When there is no light (between dusk and dawn), reflective materials or lights are most visible to others.
Explain to students why it is their responsibility to make sure motorists can see them. If a crash occurs, regardless of fault, the bicyclist or pedestrian is most likely to be hurt.

Explain to students that they should avoid night riding when possible.

- Those who must walk or ride at dusk or at night need to wear reflective material over clothing, on backpacks, and on helmets. Reflective materials reflect light back to the light source when shined upon.
- According to Minnesota law, while riding at night, a bicycle must have a white light in the front and a red light or red reflector on the back.

Show students reflective material and equipment. Turn the lights out and shine a flashlight on the material to show the class how the material stands out.

[OPTIONAL] Two video choices for demonstrating riding your bicycle at night.

www.youtube.com/watch?v=ftzJp2qYdu0
www.youtube.com/watch?v=OlaW0kk0ObI
BIKE FUN! BONUS LESSON 2: Courtesy and Communication

GEARING UP

Focus Point: Bright- and light-colored clothing and accessories make cyclists more visible to motorists. Minnesota state law requires that a bicycle operated between sunset and sunrise is equipped with a white front light and on the back, a red light—lights may be flashing or red reflector. Additionally, both wheels and pedals should be equipped with reflectors.

Materials and Equipment

- Bicycle equipped with proper reflectors and lights
- Bicycle helmet with reflectors and/or light
- Bright backpack with reflective tape
- Reflective gear: vest, arm/leg bands, tape
- Bright biking outfit including helmet, shorts, and/or jacket
- Flashlight

NOTE: For purposes of saving time, you should dress/gear up in the biking gear.

Discussion

1. Ask the entire class to choose an item to try on that improves their visibility to others.
2. Ask volunteer students to “show and tell” their gear.
3. Ask students to explain why they chose particular items. For example, they might say the clothes they wore that day are completely dark, and they need a bright jacket and reflective leg bands to be more visible.
4. Approach bicycle and ask students to gather around. Demonstrate correct lighting and reflector placement for anytime riding, but especially for night riding.
5. Darken the room and let students take turns shining the flashlight at each other’s reflective gear and the reflectors on the bike or bike helmets.
BONUS LESSON 3: Tuning Your Mind and Your Body

OVERVIEW

Educational Goal: To develop an understanding of the importance to a bicyclist of staying focused, eating well and getting enough sleep.

Preparation
• Set up technology to show www.choosemyplate.gov

Topics Covered
• Staying focused
• Staying healthy

Learning Objectives and National Health Education Standards
At the end of this lesson, students will be able to:

1. Describe safe bicycling skills that demonstrate what it means to “have your head in the game.” (Standards 1, 2, and 7)

2. Describe the impact that a healthy diet and enough sleep has on riding a bicycle. (Standards 1, 2, and 7)
IS YOUR HEAD IN THE GAME?

Focus Point: Just as having a fit body and mechanically sound bicycle are important in cycling, so is focusing attention to the environment in which the bicycle ride is occurring. Students may have heard the saying “having your head in the game”—an admonition that means being mentally alert and responsive to what is going on.

Materials and Equipment
- Whiteboard and markers or Smartboard

Discussion
1. Take a few minutes to see whether students are familiar with the concept or what they think it means when they hear someone shout, “Get your head in the game” at a sporting event. Point out the importance of having your “head in the game” when cycling, too.

2. Discuss why this is particularly important in cycling on community streets. Explain that this could possibly be because the other players in this “game” are driving much larger vehicles called automobiles.

3. Having your head in the game is as important as protecting your head. Knowing and practicing safe bicycle skills will be easier when you are mentally alert and have your “head in the game.”

4. Discuss the rules or laws for bicycle safety. Focus on the question:
   - If bicyclists observe the laws and follow the rules, will they always be safe riding their bicycles?
     - Although observing all rules and laws is important, this alone often is not sufficient to ensure safety. There are many other behaviors that go along with obeying all of the laws and staying safe on the road.
   - Ask students to reflect on what behaviors they have witnessed that may be considered safe bicycling skills, even if they weren’t “laws” or “rules” (best practices). List these on the board as students identify them.

Possible list of best practices:
- Always wear your helmet. It is not currently a Minnesota law, but in some states it is a law.
- Stop, look left, then right, then left again, and listen.
- Scan over your left shoulder.
- Take good care of your bike: make sure the chain is lubricated and not too loose, the brakes are in working order, the tires are properly inflated.
- Wear bright clothes.
- One rider per bicycle is also the law in many states. Some bicycles are made for two people.
CRASH STUDY: DRIVE OUT

Focus Point: At a young age, some riders are not mature enough to grasp the complexities of traffic situations and tend to fixate on one thing at a time. Chasing a ball or riding to a friend’s house can occupy all of their thought processes to the exclusion of simple safety rules like stopping at the end of the driveway.

Materials and Equipment

• Three student volunteers
• Scenario handout: “Drive Out” (RESOURCE GUIDE PAGE 170)

Discussion

1. Read the following scenario to the students:
   • You are on a bike ride through your neighborhood and you come to a driveway with a car in it. There is a driver in the car and he is getting ready to back out of the driveway. The driver’s side window is down, the radio is on and the music is very loud. The driver has not noticed you riding down the right-hand side of the street.

2. Ask the students:
   • How do you proceed?
   • How can you make sure a vehicle driver sees you when you are riding your bike?

Activity

1. Ask for three volunteers to take part in a short play. The roles are a police officer, the driver of the car, and the rider of the bicycle.

2. Give each volunteer about five minutes to read through the play, and then have them come to the front of the room and act out the situation.

3. After each student has finished, the class acts as a jury to determine who was responsible for the crash. Their task is to decide what laws or rules were violated. In addition, they should determine how the bicyclist and motorist could have made safer choices and what safe bicycling techniques they could have used.

4. Discuss with the class how this bicyclist did not follow the safe bicycling techniques. She didn’t stop at the edge and look left-right-left before merging with traffic and she failed to yield the right-of-way, which is a violation of traffic law in all states.

5. Stress to the students that approximately 30 percent of all car/bicycle crashes occur when young cyclists enter traffic without stopping. The bicyclist attempts to place the responsibility for her near miss on the driver of the motor vehicle. “The car driver was going too fast and almost hit me. It was all his fault.” It is important to stress that traffic safety depends upon everyone following the laws of the road.
Focus Point: Part of living a safe and healthy life is eating the right foods so the body can perform at its best. Getting enough sleep, along with managing stress and ensuring proper nutrition all work together like strength, flexibility, endurance, and balance to create a safe and healthy lifestyle.

Materials and Equipment
• Computer, speakers, and projector with Internet connection, white wall or Smartboard
• Website: www.choosemyplate.gov

Discussion
1. Ask students to name reasons why a healthy diet is important. Possible answers:
   > Good food helps you grow and build strong muscles.
   > Hunger levels affect decision making.
   > Eating large amounts of fat and sugar can affect your mood and energy levels.
   > Eating well will reduce the risk of heart attacks and other disease.

2. Discuss how a poor diet not only can cause obesity, but also can lead to a lack of concentration and memory—resulting ultimately in difficulty thinking and taking part in active sports. Part of living a safe and healthy life is eating the right foods so the body can perform at its best. Mention the value of eating meals with their family. Cooking together can be a family-strengthening experience. These questions can result in a discussion of the importance of food and family meals.

3. Ask students how many know how to cook.

4. Ask how many help in the kitchen at home.

5. Have students describe what their families cook and eat together on a regular basis and on special occasions (holidays).

6. Ask students if they have a family garden or garden site at a community garden. Ask them to describe their garden, picking fresh fruits or vegetables from a garden or orchard, or visiting a farmers market.

7. Show the students the following related website: www.choosemyplate.gov. The site is designed to help individuals make healthy nutritional choices.

8. Conclude the discussion of healthy lifestyles by asking students:
   • How much sleep did you have last night?
   • How much sleep do you usually get?
   • Does it vary on the weekends and during school vacations?
9 Explain that most students need at least **nine hours** of sleep per night to be healthy.

10 Ask students to list any effects of not getting enough sleep that they have personally experienced. Possible answers:
   > Inability to concentrate
   > Poor memory
   > Weakness
   > Emotional ups and downs (feeling sad, angry, distant from others, crabby, irritable)
   > Sickness/illness (headache, eyes hurting, feeling “bad”)
   > Tired (having no energy, feeling listless, sleepy)

11 Remind them that sleeping is more than just resting—it is also how the body and brain revive and rejuvenate themselves from the day’s activities. Sleep is also necessary for a body’s immune system to do its best work. Relate the issue to bicyclists and how they not only need sleep so that they have the energy to cycle without strain or fatigue, but also need sleep after exercise in order for the body to repair tissues and grow.

12 Reinforce the fact that they are more likely to have a bicycling crash if they have not had enough sleep. Their reaction times will be slower and their awareness of their surroundings will be lessened if they are tired.

13 Conclude by explaining that getting enough sleep, along with managing stress and getting proper nutrition all work together like strength, flexibility, endurance, and balance to create a safe and healthy lifestyle.
BONUS LESSON 4: Quick Reaction

OVERVIEW

Educational Goal: Develop an understanding of peripheral vision and reaction time.

Topics Covered
- Peripheral vision
- Reaction time

Learning Objectives and National Health Education Standards
At the end of this lesson, students will be able to:

1. Define peripheral vision and explain why it’s important to bicycling. (Standards 1, 5, and 7)
2. Define reaction time and explain why it’s important to bicycling. (Standards 1, 5, and 7)

Materials and Equipment
- Open space: parking lot, field, gym
- Ten to twelve yardsticks
- Paper and pencil for each pair of students
- Calculators (OPTIONAL)
- Illustration of peripheral vision (RESOURCE GUIDE PAGE 171)
- Five or six long jump ropes (OPTIONAL)
QUICK! THINK FAST!

Focus Point: Cyclists have to be prepared to respond quickly when they hear or see something threatening and/or unexpected while they are riding. This activity reinforces the concept of reaction time.

Materials and Equipment

- Whiteboard and markers or Smartboard
- Ten to twelve yardsticks
- Paper and pencil for each pair of students
- Calculators (optional)

Discussion

1. Write the word “reaction time” on the board and ask students to define it. Write down acceptable answers and if needed, have someone look up the word in the dictionary.

2. Explain that reaction time is the time elapsed between when an object is recognized and an individual responds with an involuntary or voluntary action.

3. Demonstrate what is meant by “involuntary reaction” by suddenly dropping a heavy book, slamming a door, or clapping your hands loudly and unexpectedly. Point out that most students automatically had a reaction or response to what they heard. Perhaps they flinched, ducked or—at a minimum—blinked their eyes.

4. Ask students if they can think of other involuntary reactions. Acceptable answers: pulling away from something hot, ducking when something is thrown at them, etc. They don’t have to think about what to do in these situations; they just do it/react.

5. Remind students that the definition of “reaction time” also includes “voluntary reaction.” A voluntary reaction is one that a person has control over. Ask for examples of a voluntary reaction in reference to sports—it may be easier for students to understand. Acceptable answers: batting at a ball in baseball, kicking a ball that is in motion, hitting a hockey puck, blocking a pass, grabbing a rebound, etc.

6. Explain to students that many athletes practice to improve their reaction times, even though they don’t know exactly when they will need to use a specific reaction.

Vocabulary

- Reaction time: the time elapsed between when an object is recognized and an individual responds with an involuntary or voluntary action
- Involuntary reaction: not under a person’s conscious control
- Voluntary reaction: a reaction that a person has control over
Activity

1. Divide students into pairs. Each pair needs a paper, pencil, and yardstick. Have one student hold a yardstick near the end (highest number) at shoulder level and let it hang perpendicular to the floor. The student holding the yardstick will unexpectedly let go. Have another put his or her open hand at the bottom of the yardstick without touching it, ready to grab the yardstick.

2. Ask the student holding the yardstick to drop it, sometime within a ten-second period, without warning the other student. The student waiting to catch the yardstick must do so as fast as he or she can after it is dropped. Have one of the students record the level (inches or centimeters) at which they catch the yardstick.

3. Repeat with the same student three to five times (have the student holding the yardstick vary the time dropping it within the ten-second “drop-zone” so the other person cannot guess when it will start to fall). Record the level each time: the inches or centimeters at which they caught the yardstick.

4. Then have the members of the pair switch roles to test the other student’s reaction time and record the level each time.

5. Have each student calculate his/her “average” reaction time. Students may use calculators. To calculate the average, instruct students to add the three to five numbers and divide the sum by three or five, depending on how many times they repeated the activity. Ask for volunteers to share their average time and write it on the board. Note the variation of reaction performance in the class.

6. Discuss how reaction time relates to riding a bicycle.

Review

1. Ask students what reaction time means for them. Answers may vary but should summarize that the time elapsed between when an object is recognized and an individual responds with an involuntary or voluntary action.

2. Ask two students to name an involuntary reaction (example: pulling away from something hot, ducking when something is thrown at them), and two other students to name voluntary reaction (example: hitting a hockey puck, blocking a pass).
OUT OF THE CORNER OF MY EYE

Focus Point: Peripheral vision is important to understand when bicycling because it provides a means of securing an “early warning” of hazards that may be approaching such as a motorist, another bicyclist, an animal, or pedestrian.

Materials and Equipment

• Whiteboard and markers or Smartboard
• Illustration of peripheral vision [RESOURCE GUIDE PAGE 171]
• (OPTIONAL) Five or six long jump ropes for two turners and a jumper

NOTE: Although children as young as eight have peripheral vision capabilities equivalent to adults, they are less able to ignore distracting information.

Discussion

1 Write the word “peripheral vision” on the board and ask students to define it. Write down acceptable answers and if needed, have someone look up the word in the dictionary.

2 Explain that peripheral vision is being able to look ahead and focusing on an object, but seeing other things on each side. Use the following illustration to help define the word.

Department of Transportation
Demonstrate what is meant by peripheral vision. Ask students to look straight ahead while extending their arms straight out from their shoulders to either side and slightly behind the plane of the shoulders (where they can’t see their hands).

Demonstrate how to move your hands forward, holding your arms parallel to the ground and wiggling your fingers, until you see your fingers with your eyes looking straight ahead and without moving your eyes in either direction.

Have each student repeat this experiment several times, noting where their hands are the very first moment they can see them. Remind students to keep their eyes looking straight ahead during this activity. Emphasize that they should focus more attention on what they see in their peripheral vision.

Ask students to explain why they think it would be important to understand peripheral vision when bicycling. Answers may vary.

Point out how being able to see “out of the corner of the eye” can be useful in bicycling because it provides a means of securing an “early warning” of hazards that may be approaching, such as a motorist, another bicyclist, an animal or pedestrian.

Activity (Optional)

1 Jumping rope can be used as an activity-oriented method to teach some of the same safety-related, decision-making skills that are used by bicyclists in bicycling. These include responding to nonverbal facial expressions, using peripheral vision, and reacting quickly and appropriately. Get more information and ideas about teaching jump rope activities from USA Jump Rope at www.usajumprope.org.

2 Divide the class into groups of four or five and introduce the jump rope activity. Give each group one rope. Two students will turn the rope, three will take turns jumping, but students will alternate these roles so all have an opportunity to jump and to turn during the activity.

3 Stress that it will take teamwork and practice to transition the jumping responsibilities without breaking the rhythm of the turning, just as it takes teamwork to coordinate smooth turning and a smooth entry and exit for the jumpers.
Begin with the “Front Door” jump roping exercise:

- Turners turn the rope from the top towards the jumper.
- Jumper stands next to a turner, watching the rope as it passes over toward the jumper.
- Jumper follows it into the middle between the turners, faces one of the turners, jumps four times, then exits to the other side.
- Verbal cues of “ready,” “set,” “go” can be given for each jumper’s entry. Jumpers should be aware that the rope touches the ground in the middle and this is where they should aim to enter and begin jumping. They will have difficulty jumping it if they enter too close to the turners.
- After each jumper has jumped in response to verbal cues, switch to visual cues, for example, head nods and facial expressions.
- For the third round, direct the jumpers to enter and exit using only the visual cues.
- Ask the students if they used peripheral vision in this exercise. Answers may vary.

After practicing the “Front Door” method, advance to “Chain Jumping.” The goal is to reduce the number of jumps performed by each jumper until they enter one after the other without any turns of the rope in between. This is known as “Rapid Fire.”

- Start with each jumper doing four jumps and exiting, then three jumps, and then two jumps. Stress the importance of teamwork and timing in this jump.
- Have students work out facial signals for other actions to be performed during the jump period, such as turning around, hopping on one foot, clapping, etc. Students then do another chain jump, responding to each of the facial signals in turn.
- Add an activity that involves responding to hand signals. Assign a student to be the “signal caller.” This person should be standing directly to the left or right of the jumper.
- The student jumping faces straight ahead, looking directly at one of the students turning the rope.
- Meanwhile, the caller gives jumping hand signals, such as signals to turn around, jump on one foot, double jump, etc. The student jumping may need to practice seeing these signals using only his/her peripheral vision in order to make the appropriate response.
- Ask the students if they used peripheral vision in this exercise. Answers may vary.
PARENT LETTER AND AGREEMENT FORM

Dear Parents/Guardian:

Your child has been given the opportunity to participate in the *Walk! Bike! Fun!* Pedestrian and Bicycle Safety Curriculum. The curriculum was developed by the Bicycle Alliance of Minnesota (BikeMN) to follow safe walking and bicycling practices and education standards. “Walk Fun” is taught in grade(s)______ and “Bike Fun” in grades(s)_______. The curriculum is designed to teach children lifelong skills to safely walk and bike in their community and includes activities on road-crossing safety, traffic laws and responsible riding.

Through classroom activities and hands-on practice, children will learn skills such as how to safely cross the street, recognize and obey traffic signs, proper helmet use, hand signals, and maneuvering through intersections. Outdoor activities will occur on school grounds as well as surrounding community streets.

All participants must have this agreement form signed by a parent or legal guardian and the student.

Student name: __________________________________________________________

I agree that I will follow all traffic laws and directions from teachers and volunteers. I will walk and ride in a safe and respectful manner and wear a helmet while riding a bike. I agree to take proper care of the school’s bicycle and equipment. I will safely control the bicycle at all times and alert the teacher of maintenance issues.

_________________________________  ______________________________
Student signature                          Date

_________________________________  ______________________________
Parent/Legal guardian signature          Date
VEHICLE
VOCABULARY CARDS

PEDESTRIAN
VISUAL BARRIERS
VISUAL BARRIERS
VISUAL BARRIERS
VISUAL BARRIERS
VISUAL BARRIERS
VISUAL BARRIERS
VISUAL BARRIERS
VISUAL BARRIERS
INTERSECTIONS
TRAFFIC SIGNALS/LIGHTS AND SIGNS
TRAFFIC SIGNALS/LIGHTS AND SIGNS
For additional information on promoting safe walking and bicycling, contact BikeMN at education@bikemn.org.
TRAFFIC SIGNALS/LIGHTS AND SIGNS
TRAFFIC SIGNALS/LIGHTS AND SIGNS

ONE WAY

For additional information on promoting safe walking and bicycling, contact BikeMN at education@bikemn.org.
TRAFFIC SIGNALS/LIGHTS AND SIGNS
TRAFFIC SIGNALS/LIGHTS AND SIGNS
SCAVENGER HUNT LIST

Going for a walk outside today will be lots of fun! During your walk, concentrate on walking safely, observing traffic, as well as sidewalk and street conditions. As you walk, mark the items your group found on this list:

- Sidewalk
- Crosswalk
- Driveway
- Curb
- Visual barriers
- Drain grates
- Road construction
- Traffic lights
- Parked cars
- Stop sign
- Intersection
- School bus
- Police car
- Traffic
- Pedestrian
- Stop and Search method
- Trash can
- Fence
- Boulevard
- Yield sign
- Truck
- Train
- Train tracks
- Dog

NAME: ________________________________
BICYCLE TEST

This test will help us know how well you understand the rules of the road as they apply to bicycles. Read all questions carefully. Questions will ask you to either label pictures, choose the best answer to a question, or list answers.

1. You and the car across from you reach this four-way stop intersection at the same time. You are turning left and the car is going straight. Mark the one answer that best explains what you will do.
   - A. Stop, signal left, wait for the car to go first, and then turn left
   - B. Stop, turn through the intersection, and then let the car go straight
   - C. Make eye contact with the driver and make your turn

2. You are riding at night in a properly lighted neighborhood. Choose the answer that best describes the law requirements and makes you most visible.
   - A. Bright clothes and reflectors
   - B. Flash light and reflectors
   - C. Front white headlight, rear red light, on-bike reflectors, and reflective materials on clothing
   - D. Reflective clothing and front head light

3. Write a brief description of what the following signs mean and label all parts of the traffic signal.

   A. ____________  B. ____________  C. ____________

4. You are riding on the street and a stoplight that is 25 feet away turns yellow.
   - A. Keep your current speed and if you see that the intersection is clear, go through it
   - B. Slow down and stop at the light
   - C. Continue going fast and stop wherever the light turns red
   - D. Go faster and try to make it through the intersection

For additional information on promoting safe walking and bicycling, contact BikeMN at education@bikemn.org.
BICYCLE TEST PAGE 2

5 It is important to test if your bike is safe before each ride. Match the six things in the column to the left with the bike diagram on the right.

____ Quick release
____ Chain
____ Handlebars
____ Brakes
____ Seat
____ Tires

6 Mark the three most common situations when bicycle collisions occur.

☐ A. Bicyclist is riding in the opposite direction to the proper flow of traffic
☐ B. Bicyclist is riding in the same direction to the proper flow of traffic
☐ C. Bicyclist coming out from a driveway or sidewalk onto the street
☐ D. Bicyclist does not obey the proper rules of the road
☐ E. Bicyclist stays to the right side of the roadway
☐ F. Bicyclist rides through a green light

7 Label the hand signals with their proper meaning.

A. ___________  B. ___________  C. ___________  D. ___________

8 Mark the five most important actions or rules of the road that all bicyclists must follow for safe riding.

☐ A. Obey traffic laws and signs
☐ B. Always use hand signals
☐ C. Always ride on the sidewalk
☐ D. Wear a properly fitted helmet
☐ E. Check your bike for safety
☐ F. Ride on the left side of the street against traffic
☐ G. Use lights and bright clothing when riding at night
☐ H. Always let cars go before you at intersections
9 The intersection below is labeled with positions “1,” “2,” and “3” to help remind cyclists where to ride when biking through an intersection. Starting at the bicycle, draw your path through the intersection for:

- Right turn
- Going straight
- Left turn

10 Mark the three most important actions to safely exit the driveway below.

- A. Use your brakes without skidding
- B. Stop at the end of the driveway
- C. Look both ways before riding on to the street
- D. Watch out for pedestrians on the sidewalk
- E. Ride fast onto the street

11 Describe three actions that would make this a better-fitting helmet. Use words and arrows.

- A. ________________________________
- B. ________________________________
- C. ________________________________
BICYCLE TEST ANSWER KEY

1. A. Stop, wait for the car to go first, signal left, and then turn left

2. C. Front white headlight, rear red light, on-bike reflectors, and reflective materials on your clothing

3. A. Railroad crossing ahead
   B. Stop at the end of the street
   C. Watch for other vehicles or Be cautious and stop if other vehicles are approaching the intersection
   D. Red – Stop; Yellow – Stop; Green – Go

4. B. Slow down and stop at the light

5. D. Quick release
   C. Chain
   F. Handlebars
   E. Brakes
   A. Seat
   B. Tires

6. A. Bicyclist is riding in the opposite direction to the proper flow of traffic
   C. Bicyclist coming out from a driveway or sidewalk onto the street
   D. Bicyclist does not obey the proper rules of the road

7. A. Stop/stopping
   B. Left
   C. Right
   D. Right

8. A. Obey traffic laws and signs
   B. Always use hand signals
   D. Wear a properly fitted helmet
   E. Check your bike for safety
   G. Use lights and bright clothing when riding at night

9. B. Stop at the end of the driveway
   C. Look both ways before riding onto the street
   D. Watch out for pedestrians on the sidewalk

10. Helmet needs to be level across forehead, tighten chin strap, move slider up
Walk Fun! is part of the Walk! Bike! Fun! Pedestrian and Bicycle Safety Curriculum and is funded with a federal grant from the MnDOT Safe Routes to School Program.
CERTIFICATE OF ACHIEVEMENT

THIS CERTIFIES THAT

Has successfully completed BIKE FUN!

Job well done!
www.bikemn.org

DATE _____________ SIGNED _________________________

Bike Fun! is part of the Walk! Bike! Fun! Pedestrian and Bicycle Safety Curriculum and is funded with a federal grant from the MnDOT Safe Routes to School Program.

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DATE _____________ SIGNED _________________________

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THE BRAIN

- **FRONTAL LOBE**
- **PARietal LOBE**
- **OCCipital LOBE**
- **TEmporal LOBE**
- **Cerebellum**

**Functional Areas**
- **Frontal Lobe**: Thinking, Emotion, Judgment
- **Parietal Lobe**: Sensation, Touch
- **Occipital Lobe**: Vision, Hearing
- **Temporal Lobe**: Speaking, Musical Ability
- **Cerebellum**: Balance, Coordination

**Neural Activity**
- **Mature Neuron**

For additional information on promoting safe walking and bicycling, contact BikeMN at education@bikemn.org.
HELMET FIT: STEP-BY-STEP GUIDE

It’s not enough to simply buy a bicycle helmet. It should be properly fitted, adjusted, and worn each time you ride.

THE PROPER HELMET FIT

Helmets come in various sizes, just like hats. Size can vary between manufacturers. For the most comprehensive list of helmet sizes according to manufacturers, go to the Bicycle Helmet Safety Institute (BHSI) site: www.bhsi.org.

To select and properly fit a bicycle helmet, follow the helmet fitting instructions in this flyer.

It may take some time to ensure a proper fit. It is easier if you have someone help you adjust the straps.

STEP 1 — SIZE

Measure your head for approximate size. Try the helmet on to ensure it fits snugly. While it is sitting flat on top of your head, make sure the helmet doesn’t rock side to side. Sizing pads come with new helmets; use the pads to securely fit to your head. Mix or match the sizing pads for the greatest comfort. In your child’s helmet, remove the padding when your child’s head grows. If the helmet has a universal fit ring instead of sizing pads, adjust the ring size to fit the head.

STEP 2 — POSITION

The helmet should sit level on your head and low on your forehead—one or two finger-widths above your eyebrow.

STEP 3 — BUCKLES

Center the left buckle under the chin. On most helmets, the straps can be pulled from the back of the helmet to lengthen or shorten the chin straps. This task is easier if you take the helmet off to make these adjustments.

STEP 4 — SIDE STRAPS

Adjust the slider on both straps to form a “V” shape under, and slightly in front of, the ears. Lock the slider if possible.

STEP 5 — CHIN STRAP

Buckle your chin strap. Tighten the strap until it is snug, so that no more than one or two fingers fit under the strap.

STEP 6 — FINAL FITTING

A. Does your helmet fit right? Open your mouth wide . . . big yawn! The helmet should pull down on the head. If not, refer back to Step 5 and tighten the chin strap.

B. Does your helmet rock back more than two fingers above the eyebrows? If so, unbuckle, shorten the front strap by moving the slider forward. Buckle, retighten the chin strap, and test again.

C. Does your helmet rock forward into your eyes? If so, unbuckle, tighten the back strap by moving the slider back toward the ear. Buckle, retighten the chin strap and test again.

D. Roll the rubber band down to the buckle. All four straps must go through the rubber band and be close to the buckle to prevent the buckle from slipping.
A Bicycle helmet can protect your head and brain ONLY if you wear it each time you ride!

**HELMET LAWS**

Many States and local jurisdictions have bicycle helmet laws: please refer to your State or local jurisdiction. To find this information go to [www.helmets.org/mandator.htm](http://www.helmets.org/mandator.htm).

A bicycle crash can happen at any time. A properly fitted bicycle helmet reduces the risk of head injury by as much as 88 percent.

More children age five to fourteen go to hospital emergency rooms for injuries associated with bicycles than with any other sport. Many of these injuries involve the head. Helmet laws ensure the safety of our children.

**MODEL SAFE BEHAVIOR**

Everyone—adult and child—should wear bicycle helmets each time they ride. Helmets are the single most effective way to prevent head injuries resulting from bicycle crashes. Wearing a helmet each ride can encourage the same smart behavior in others.

**HELMET CERTIFICATION**

Buy a new helmet that has been tested and meets the uniform safety standard issued by the U.S. Consumer Product Safety Commission (CPSC); use an old helmet only if it has a seal from one or more of the voluntary bicycle helmet standards, such as ASTM, Snell, or ANSI. Look for the certification seal labeled on the helmet.


**HELMET GUIDELINES**

**WHEN TO REPLACE A HELMET.**
Replace any helmet that has been involved in a crash or is damaged. Never wear a helmet that has been involved in a crash. Bicycle helmets are designed to be crashed only once. If your helmet shows signs of having been crushed, cracked, or damaged in any way, the integrity of the helmet may have been compromised, and it needs replacing.

A crashed helmet may not show any visible signs of wear, but still be damaged internally enough that it won’t protect your head. Scratches on the plastic coating might be okay, but if the plastic foam has any cracks, the helmet will not absorb an impact and your brain will not be protected. Also, the foam in helmets breaks down over time, mainly from heat and sun. Don’t leave your helmet in a hot car or garage. Replace a helmet when it is more than two to five years old.

**THE HELMET SHOULD FIT NOW.**
Buy a helmet that fits your head now, not a helmet to “grow into.”

Replace any helmet that has been outgrown.

**THE HELMET SHOULD BE COMFORTABLE.**
If it feels small, put in the thinner sizing pads or purchase a larger helmet. Ideally, select a helmet brand and size that fits well prior to any adjustments. If you buy a helmet that you find comfortable and attractive, you are more likely to wear it.

**THE HELMET MUST COVER YOUR FOREHEAD.**

**THE CHIN STRAP MUST BE TIGHT AND PROPERLY ADJUSTED.**

**THE HELMET SHOULD NOT ROCK FORWARD OR BACKWARD ON YOUR HEAD.**
If it does, see STEP 6.
BIKE ANATOMY QUIZ

Place a line pointing to a part of the bike listed below. Letter the line with the correct bicycle part.

**FRAME**
- A top tube
- B down tube
- C seat tube
- D front fork
- E seat stays
- F chain stays
- G wheel dropouts

**DRIVE TRAIN**
- H pedal
- I cranks
- J chainwheel
- K chain
- L rear derailleur
- M cassette

**OTHER COMPONENTS**
- N tire
- O spokes
- P rim
- Q seat
- R seat post
- S handlebars
- T brake cables
- U brake levers
- V shift levers

NAME: ____________________________
BIKE ANATOMY QUIZ ANSWER KEY

FRAME
A  top tube
B  down tube
C  seat tube
D  front fork
E  seat stays
F  chain stays
G  wheel dropouts

DRIVE TRAIN
H  pedal
I  cranks
J  chainwheel
K  chain
L  rear derailleur
M  cassette

OTHER COMPONENTS
N  tire
O  spokes
P  rim
Q  seat
R  seat post
S  handlebars
T  brake cables
U  brake levers
V  shift levers
"ABC QUICK CHECK"

A → IS FOR AIR
Check the air pressure, spin the wheels, and make sure the tires are not worn out.

B → IS FOR BRAKES
Check to make sure the coaster brakes will stop the bike by spinning the back wheel and applying the brake. If the bike has hand brakes, check to see that the levers don’t hit the handlebars when squeezed. Lift one tire up at a time and spin it; squeeze the levers to see if the tire stops. The brake pads should be clean, straight, and contact the rims properly.

C → IS FOR CRANKS, CHAIN, AND COGS
Grab the crank arms and try to wiggle side to side. There should be no movement. Spin the pedals and cranks to see if the chain drives the rear wheel. The chain should look like metal, not rust or black gunk. If the bike has gears, check to make sure the gear levers and derailleurs (gear-changing mechanism) work to shift the chain between the gears.

QUICK → REFERS TO THE QUICK RELEASE
Some bikes have quick releases on the wheels or seat post. Check to make sure they are tight and closed properly.

CHECK → STANDS FOR CHECK
After making sure the seat and handlebars are tight and the proper height, have the child ride the bicycle around the parking lot and check that everything works well.
PRESTA AND SCHRADER VALVES

SCHRADER VALVE

PRESTA VALVE

For additional information on promoting safe walking and bicycling, contact BikeMN at education@bikemn.org.
**HOW TO FIX A FLAT TIRE**

1. **REMOVE WHEEL**
   - *Rear*: set bike upside down on handlebars and seat before opening hub quick release.
   - *Rear*: shift into smallest gear in rear, undo brake then hub quick release; remove.
   - *Front*: undo brake then wheel quick release and remove.

2. **DEFLATE TIRE**
   - Remove remaining air by depressing valve.
   - *Schrader* is a larger, spring-loaded valve and must be depressed; car style valve.
   - *Presta* is an all metal, air sprung, narrow valve. Unscrew then press.

3. **REMOVE ONE SIDE OF TIRE FROM RIM**
   - Using tire levers, unseat one side of tire; start away from valve stem.
   - For tight rim/tire combinations, multiple tire levers are needed; be careful when using metal levers.
   - Many mountain and hybrid bike tires will come off by hand. Practice at home.

4. **REMOVE TUBE**
   - Remove tube from tire; avoid valve damage by starting away from valve.
   - Keep tube and tire in same position relative to each other to aid in finding puncture.
   - Inspect tube for holes; mark with chalk for patching or replace with a spare tube.

5. **INSPECT INSIDE OF TIRE**
   - Feel inside of tire for cause of flat; use caution to prevent injuries to your finger.
   - Remove thorn, glass, staple, nail, or whatever caused your flat.
   - Inspect tire for damage caused by flat.

6. **INSTALL NEW OR PATCHED TUBE**
   - After repairing damaged tube or retrieving spare, inflate tube to give it round shape.
   - Fold back tire to allow access to valve hole; insert valve first, then tube into tire.
   - For presta valve, screw valve closed and install valve nut loosely against rim.

7. **RESEAT TIRE BEAD**
   - Start reseating tire by hand at valve hole; work in both directions.
   - Push valve partially back through rim to insure proper seating of tire bead.
   - Visually inspect tire bead to insure proper tire seating on rim.

8. **INFLATE TIRE**
   - Inflate tire slowly, checking for bulges which might indicate improper bead seating on rim.
   - Deflate if bulge occurs; carefully re-inspect and reseat bead on rim.
   - Inflate to desired pressure.

9. **INSTALL ON BIKE**
   - *Front*: install wheel, tighten hub quick release, and attach brakes; make sure wheel is straight.
   - *Rear*: install wheel by placing chain on top and bottom of small cog.
   - *Rear*: push pulley closest to you forward; drop hub down into frame and tighten.

10. **RIDE AWAY**
    - Check brake and hub quick releases; make sure tire does not rub brakes or frame.
    - Check rear derailleur to make sure shifting is still smooth.
    - If anything is wrong, the wheel is probably crooked; make sure wheels are in straight.

---

*TIRE LEVERS*

Tire levers are made to hook onto the spokes. Insert one lever and hook it on the spoke, insert the second one to the right of the first and, if you need a third, insert it to the left of the first lever.
VOLUNTEER GUIDE TO GROUP RIDING

Welcome to ____________________________ (name of school). Thank you for volunteering to be a part of our “Neighborhood Ride” on ____________________________ (date) and helping to keep our children safe on the road. Please arrive at ____________________________ (time) and meet me at ____________________________ (location).

PLEASE BRING:
- A fully operable bicycle and helmet
- A backpack
- A first aid kit (if you have one)
- A cell phone

PLEASE PREPARE BY:
- Reviewing Minnesota Bicycle Laws at www.bikemn.org/education/minnesota-bicycle-laws
- Watching “Ride Smart” videos from the League of American Bicyclists: www.bikeleague.org/ridesmart
- Reviewing the “Seven Principles of Traffic Law” at www.bikemn.org/education/srts
- Viewing the map of the route, attached
- Reading the following “Group Riding” strategies
- Contacting me with any questions or concerns

GROUP RIDING STRATEGIES

1  BE PREDICTABLE — This is an important rule (even for solo riding) and it involves every aspect of riding from changing positions in the group to following the traffic rules. Smooth predictable riding isn’t just a matter of style, it is riding within the rules of the road as a vehicle. Groups should maintain integrity when approaching intersections. That means staying in the correct lane, stopping together, and starting together as traffic allows. It goes without saying that if we demand the right to ride on the road, then we must be willing to ride responsibly . . . especially as a group.

2  BE STEADY — This includes speed and line. Ever notice how easy it is to ride behind some folks? If you take note of their riding style you’ll probably notice they don’t yo-yo around in the pack. They are rock steady. When they take the lead, they don’t accelerate. When they are leading, they ride a straight line and their speed will be constant with the conditions. What a joy to ride with someone like this. When they are following, they don’t make sudden moves or they know how against the resistance.

3  ANNOUNCE HAZARDS — When you are in the lead, you are responsible for the safety of everyone behind you. You will become very unpopular very quickly if people behind you keep bouncing off of potholes, running over rocks, or reacting to unsafe traffic situations that you fail to point out. You need to be very vocal when approaching intersections, slowing, stopping, or turning, and all actions should be smooth and deliberate. Riders in the group should relay these warnings to the rear. When you are following, announce oncoming traffic from the rear. In this case, others should relay this information toward the front.
VOLUNTEER GUIDE TO GROUP RIDING (CONT.)

4 **SIGNAL** — Signaling lets everyone (vehicles and riders) know your intentions ... remember #1? This makes you predictable. Also, it’s a good idea to make eye contact with oncoming traffic at intersections.

5 **DON’T LEAVE STRAGGLERS** — If you get separated at intersections, as a matter of courtesy, the leader should stop approximately 100 feet after the intersection to wait for the rest of the group. Another note here is that if you are the one who will be caught by the light, don’t run the red light to maintain contact. Also as a courtesy to those who may not be able to stay with the group, the pack should wait at certain points along the route to regroup. Especially, at turn points and if the stragglers don’t know the route. No one should be left alone on a group ride.

6 **RELAX AND ENJOY!** — Being relaxed will allow you to be smooth and responsive. When you see someone who is riding a straight line and is very steady, he/she is relaxed on the bike. It not only saves energy, but it makes bike handling much more effective.

You are a valued member of our group. Thank you for taking the time to ride with our class and for practicing good, safe riding techniques.
TRAFFIC SIGNS AND MARKINGS WORKSHEET  PAGE 1

Fill in the blanks with the appropriate description of each sign:

<table>
<thead>
<tr>
<th>Sign</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STOP</td>
<td></td>
</tr>
<tr>
<td>SPEED LIMIT 35</td>
<td></td>
</tr>
<tr>
<td>NO TURNS</td>
<td></td>
</tr>
<tr>
<td>LEFT LANE MUST TURN LEFT</td>
<td></td>
</tr>
<tr>
<td>ONLY</td>
<td></td>
</tr>
<tr>
<td>DO NOT ENTER</td>
<td></td>
</tr>
<tr>
<td>DETOUR</td>
<td></td>
</tr>
<tr>
<td>SCHOOL BUS STOP AHEAD</td>
<td></td>
</tr>
<tr>
<td>USE</td>
<td></td>
</tr>
<tr>
<td>bike</td>
<td></td>
</tr>
</tbody>
</table>

NAME:
TRAFFIC SIGNS AND MARKINGS WORKSHEET PAGE 2

SOFT SHOULDER  WRONG WAY  RIGHT TURN  LEFT TURN  YIELD

ONE LANE BRIDGE  PEDESTRIAN MARKING  TRAFFIC LIGHT

NAME: ____________________________
TRAFFIC SIGNS AND MARKINGS WORKSHEET ANSWER KEY PAGE 1

- Stop Sign
- Stop Ahead Warning
- Signal Ahead Warning
- Children Playing Ahead Warning
- Parallel Railroad Crossing Ahead
- Two Way Traffic Warning
- Speed Advisory
- Slippery When Wet
- Left Curve Ahead Warning
- One Way Traffic Only
- School Bus Stop Ahead Warning
- No Turns Allowed
- Left Lane Must Turn Left
- Intersection Ahead
- School Crossing Warning Ahead
- Left Turn Only/Left and Straight
- No Right Turn Allowed
- Do Not Enter
- Detour
- Restricted Lane Ahead
- Pedestrian Crossing
- Right Curve Ahead Warning
- Bicycle Crossing Ahead Warning
- Steep Grade Ahead Warning
- Railroad Crossing

For additional information on promoting safe walking and bicycling, contact BikeMN at education@bikemn.org.
TRAFFIC SIGNS AND MARKINGS WORKSHEET ANSWER KEY

- **Soft Shoulder Warning**
- **Wrong Way**
- **Turn Right 30mph or Less**
- **Turn Left 30mph or Less**
- **Yield Signs**
- **One Lane Bridge Ahead Warning**
- **Right Lane Ends Traffic Must Merge**
- **Red: STOP**
- **Yellow: Stop if you can**
- **Green: Go, but only if intersection is clear**
What should you always check before riding your bike?
SAFETY FLASHCARDS [OPTIONAL]

ANSWER:

Air in the tires, brakes, and chain
SAFETY FLASHCARDS (OPTIONAL)

QUESTION:

What type of clothes should you always wear when you ride your bike?
SAFETY FLASHCARDS (OPTIONAL)

ANSWER:

Bright
SAFETY FLASHCARDS (OPTIONAL)

QUESTION:

At what time of the day should you try NOT to ride your bike?
ANSWER:

Night
QUESTION:

What should you always check for when you enter a street?
ANSWER:

Traffic
QUESTION:

On which side of the road should you always ride your bike?
**SAFETY FLASHCARDS** *(OPTIONAL)*

---

**ANSWER:**

Right
(same direction as traffic)
SAFETY FLASHCARDS (OPTIONAL)

QUESTION:

What color does the traffic light have to be when you can go?
SAFETY FLASHCARDS (OPTIONAL)

ANSWER:

Green!
If you have to ride at night, what do you have to place on your bike?
SAFETY FLASHCARDS (OPTIONAL)

ANSWER:

Reflectors and lights
QUESTION:

What color traffic light should you always stop for?
SAFETY FLASHCARDS (OPTIONAL)

ANSWER:

Red
QUESTION:

What should you always wear on your head when riding a bike?
SAFETY FLASHCARDS (OPTIONAL)

ANSWER:

A helmet
SAFETY FLASHCARDS (OPTIONAL)

QUESTION:

What should you always do before entering a roadway?
SAFETY FLASHCARDS (OPTIONAL)

ANSWER:

Stop, listen for traffic, look left-right and then left again
THREE SCENARIOS HANDOUT

SCENARIO 1
It is a pleasant spring morning and you decide to take a bike ride on the local multi-use trail. As you begin your ride you notice the trail is really bustling with joggers, rollerbladers, and other bicyclists. You come around a bend in the trail and notice that up ahead there is a group of people walking and several rollerbladers blocking your path. What do you do to get past them?

Demonstrate this scenario incorporating the following:
1. The pedestrians are elderly.
2. The rollerblader has radio headphones on.
3. There is a loud construction project nearby.

SCENARIO 2
You are on your way to school and you come to the usual four-way stop (intersection) where you have to make a left turn. Directly across from you at the other stop sign, a motorist arrives. You notice she does not have her turn signal on so you assume she must want to go straight through the intersection. How do you communicate what you are going to do and decide who should go first?

Demonstrate this scenario incorporating the following:
1. The motorist is accompanied by several passengers who are distracting her.
2. The driver is wearing sunglasses and so are you.

SCENARIO 3
You are on your regular Saturday morning neighborhood ride and you come to a driveway with a car in it. There is a driver in the car and he is getting ready to back out of the driveway. The driver’s side window is down but he has not yet noticed you riding down the right-hand side of the street. How do you proceed?

Demonstrate this scenario incorporating the following:
1. The radio is on in the car and the music is very loud.
2. The driver is wearing sunglasses.
3. There are children in the back seat.
SCENARIO HANDOUT: "DRIVE OUT"

POLICE OFFICER TO DRIVER AND BICYCLIST:

Who was at fault? Why?

CAR DRIVER STATEMENT:

I didn’t see the girl on the bike until the last second. She rode out of her driveway very fast and cut right in front of me. Luckily, I swerved at the last second and didn’t hit her. The ambulance was not called.

BICYCLIST STATEMENT:

I always wear my helmet. I didn’t want to be late for school. I jumped on my bike and hurried down our driveway. I didn’t see the car coming until I was in the street. The car driver was going too fast and almost hit me. It was all his fault.

POLICE OFFICER TO DRIVER AND BICYCLIST:

What could you have done differently to avoid this close call?

POLICE OFFICER TO THE CLASS:

What laws are being violated?
What unsafe choices has the bicyclist made?
What are the safe choices for the bicyclist?
What are the safe choices for the motorist?

Approximately 30 percent of all car/bike crashes occur when young bicyclist enter traffic without stopping.
PERIPHERAL VISION
BICYCLE RODEO: A SKILL-BUILDING OBSTACLE COURSE

A bicycle rodeo is a skill-building obstacle course developed for the purpose of teaching children basic bicycle riding skills like stopping, balancing, signaling, and turning. The rodeo also features bike and helmet safety inspections.

WHY HOLD A BICYCLE RODEO?

It’s clear that bicycling is widespread. Young riders need to be educated on safety measures and riding practices to insure optimum safety and legal riding practices. Bicycle rodeos succeed in providing this valuable information.

WHAT IS THE BICYCLE RODEO?

The goal of the rodeo is to teach children the importance of seeing, being seen, and remaining in control at all times when riding a bike. This is achieved through a series of bike handling drills and the simulation of traffic situations. This activity can be a culminating activity to the Bike Fun! lessons focusing on helmet usage, basic safety strategy, laws, and regulations.

RODEO PURPOSE

A rodeo is designed to be a fun, educational activity for children of varying levels of bicycle riding experience. This event serves to:

1. **Educate**: Increase knowledge about traffic safety and bicycling.
2. **Train**: Transfer the knowledge to the practice of skills and decision-making while riding a bicycle.
3. **Motivate**: Energize and excite participants to want to learn more and to engage in walking and bicycling.

The following website has a complete guide to organizing a bicycle rodeo:

www.bikemn.org/storage/documents/rodeo-101-v1.2.0.pdf
# Suggested List of Equipment and Supplies

## Bicycle Specification
- A basic hybrid style bicycle
- (prefer) Aluminum frame
- Durable, easily maintained unisex bicycle; frame size dependent on kids in class, a variety of sizes is suggested to have on hand
  - 20-inch wheels
  - 24-inch wheels
  - 26-inch wheels
- Quick release seat adjustment
- (prefer) Hand brakes, with free hub
- Strong wheels with alloy (not steel) rims
- Handlebars with upright riding position

**Note:** Choose gears for teaching shifting, areas with hills, or rides covering more distance. Choose no gears for less maintenance.

## Replacement Parts
- 4 pair handlebar grips
- 2 replacement chains
- 10 extra-long seat posts with seats (to fit specified bikes)
- 1 each - spare front and rear wheel per bike size
- 2 inner tubes (for 20-inch wheels)
- 2 inner tubes (for 24-inch wheels)
- 2 inner tubes (for 26-inch wheels)
- 2 patch kits

## Equipment/Tools
- 1 shop-recommended floor pump
- 1 shop-recommended bike stand
- 2 shop-recommended chain lubes
- 1 set tire levers
- 1 pedal wrench
- 1 large adjustable wrench
- 1 set metric combination wrenches (including at least 8 to 15 millimeter)
- 1 each Y tool for Allen hex (2-2.5-3 millimeter and 4-5-6 millimeter)

## Other Equipment
- CPSC-certified helmets of various sizes (mainly for fourth through sixth graders, the majority of helmets to fit 22-inch to 23 1/4-inch head circumference)
- Trailer (or storage unit) ideally a 7-foot-wide and 14-foot-long trailer should suffice with a roller door and ramp for easy use. Most trailer retailers can help modify the interior with bike hooks to optimize storage space.

## Other (Miscellaneous)
- Traffic cones, minimum of twelve, 8 to 10-inch cones
- Rope
- Surgical caps (prevent lice) or spray
- Spray chalk, sidewalk chalk, paint or tape
- Large cardboard boxes
- Clip boards, pens
- Measuring tape
- Whistle or megaphone
- Reflective bike gear
- Reflective safety vests
- First Aid kits
WALK! BIKE! FUN! EDUCATIONAL RESOURCES

MINNESOTA DEPARTMENT OF TRANSPORTATION: SAFE ROUTES TO SCHOOL
http://www.dot.state.mn.us/saferoutes/

BICYCLE ALLIANCE OF MINNESOTA
http://www.bikemn.org/

LEAGUE OF AMERICAN BICYCLISTS
http://www.bikeleague.org/ridesmart

BICYCLE AND SAFETY EDUCATION
http://www.safekids.org/safety-basics/safety-resources-by-risk-area/bicycling-and-skating/?gclid=CPqH1vbLuUCFYZcMgodARAAug

SAFE KIDS USA

SAFE ROUTES TO SCHOOL NATIONAL PARTNERSHIP
http://www.saferoutespartnership.org/

NATIONAL CENTER FOR SAFE ROUTES TO SCHOOL (SRTS)
http://www.saferoutesinfo.org/

PARTNERSHIP FOR A WALKABLE AMERICA
http://www.walkableamerica.org/

PEDESTRIAN AND BICYCLE INFORMATION CENTER
http://www.bicyclinginfo.org/education/case-studies.cfm

NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
http://www.nhtsa.gov/Driving+Safety/Bicycles/Get+To+School+(and+back+again)+Safely+Gameboard

WALK BIKE TO SCHOOL
http://www.walkbiketoschool.org/

PEDESTRIAN SAFER JOURNEY
http://www.pedbikeinfo.org/pedsaferjourney/index.html
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