

Instructor's **Guide**

Grades
K-5



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Purpose of the *Let's Go NC!* Curriculum

What is this curriculum?

Let's Go NC! was developed by the North Carolina Department of Transportation's Division of Bicycle and Pedestrian Transportation to teach and encourage the practice of safe pedestrian and bicycle behaviors for children at the elementary age level (kindergarten through fifth grade). The primary resources for the creation of *Let's Go NC!* are the National Highway Traffic Safety Association's Child Pedestrian Curriculum and Cycling Skills Clinic, and the North Carolina Department of Transportation's Basics of Bicycling.

The overall goal of the curriculum is to develop walking and biking skills that will help them achieve an active and healthy lifestyle into adulthood. While some children may be aware of ways to stay safe as pedestrians or bicyclists, the purpose of this program is to help children transfer that knowledge into an automatic response in behavior.

Let's Go Walking! and *Let's Go Biking!* may be taught independently of each other, but are designed to teach concepts and skills in 5 lessons for developmentally appropriate teaching levels: kindergarten and first grade, second and third grade, and fourth and fifth grade. Each lesson builds upon the skills learned in the previous lesson within the teaching level. The content is customized based on needs and concerns from North Carolina teachers and stakeholders. Teaching both lesson sets will give children the skills to be safe, healthy, and active in their daily lives.

***Let's Go Walking!* The Pedestrian Lesson Set**

The pedestrian lesson set, called *Let's Go Walking!*, targets five areas of pedestrian safety:

Lesson Concepts	K-1	2-3	4-5	Review
Walking Safely Near Traffic	 	 	 	
Crossing Streets Safely	 	 	 	
Crossing Intersections Safely	 	 	 	
School Bus Safety	 	 	 	
Parking Lot Safety	 	 	 	

Each lesson has a Discussion and Demonstration of Core Concepts () a Skill-Building Activity () and a video to accompany the Lesson Review ().

These five areas are the same for each teaching level, but the lessons build in difficulty from one teaching level to the next, requiring greater problem-solving and a higher level discussion.

Let's Go Biking! The Bicycle Lesson Set

The bicycle lesson set, called *Let's Go Biking!*, also targets five topic areas for each teaching level; however, due to the cognitive and motor skill developmental differences from kindergarten to fifth grade, the five topic areas include more advanced skills-based lessons as the teaching level increases.

The lessons progress from basic knowledge, healthy living concepts, and safety concepts in the classroom to on-bicycle skill-building activities in a simulated environment outdoors. Early on the focus is more on concepts, but as children progress through grade levels, more time is spent on skills development with hands on activities.

The table below lists the bicycle lessons for each grade level.

Lesson Concepts	K-1	2-3	4-5
Gearing Up			
Go By Bike			
Signs, Signals, and Safety			 
Bicycling Basics			 
Bike Control			
Cooperative Riding			
Basic Traffic Skills			

The lessons for each grade grouping include a Discussion and Demonstration that occurs in the classroom () and hands-on Skill-Building Activities which occur outdoors (). Some lessons include a video () to complement classroom instruction.

Why is this curriculum important?

The number of children who bicycle or walk to and from school in the United States has plummeted. Meanwhile, childhood obesity has skyrocketed and school-related road traffic has dramatically worsened. Increasing the rates of bicycling and walking is an important part of combating this trend and education is a large part of the solution. According to the National Survey of Children's Health, 19.3 percent of North Carolina youth are obese. This ranks North Carolina the 5th most obese state in the nation for youth ages 10-17.

Bicycle and Pedestrian education teaches children skills that can reduce the number of injuries and deaths related to those transportation modes. Children who do not have these fundamental skills and do not understand traffic rules are more likely to be injured. Each year in North Carolina, approximately 16 child pedestrians and 3 bicyclists between the ages of 0-15 die. Hundreds more children are injured in crashes with motor vehicles.

This curriculum will give children some of the tools and knowledge necessary to avoid becoming a statistic, focusing on places and situations where children are likely to suffer injuries, while practicing skills they can use the rest of their lives.

Children undergo an enormous amount of growth and change from birth through the teenage years, particularly in the area of cognitive development. As children grow, they develop an increasingly sophisticated understanding of the world which affects how they learn. In terms of safety for active transportation, it is important to use a curriculum that works within children's cognitive development and challenges them to further develop how they think.

What the Research Shows

Current pedestrian research shows that with proper instruction, children can be taught to follow multi-step directions and to use problem-solving to interpret situations and make critical decisions. According to Thomson et al. (1992), with instruction, children as young as five years old can clearly identify safe places to cross a street that mirror the decisions of similarly untrained 11-year-olds. Studies using roadside simulation approaches (that of a pretend street near a real road) demonstrate that children may exhibit a conservative approach to crossing the street, resulting in safer crossing behavior (Demetre et al., 1992; Hoffrge et al., 2003). In similar studies, children as young as five were taught to make decisions to cross during gaps in traffic that mirror adult decisions (Lee et al., 1984; Young and Lee, 1987).



This curriculum seeks to fuse understanding of cognitive development with current findings about the benefits of pedestrian safety instruction. With this program and the repeated skill-building opportunities, the curriculum complements their cognitive development relative to their age or grade level.

In the past, most child pedestrian safety courses have focused on audio, video, and workbook instruction. These methods, while increasing knowledge, have shown little behavior change in the lives of the students (Rothengatter, 1981). As for teaching bicycle safety, brief one-time educational interventions have not been shown to be effective at improving safe cycling behavior, knowledge or attitudes in elementary aged children (Macarthur, 1998). This research suggests that interventions that repeat the message in different forms and contexts, allow for repetition of bicycle safety messages, give several opportunities for practice, and have increased opportunities for parental involvement are more likely to be an effective approach to improving bicycle safety in children.

The ability to engage in safe street-crossing behaviors relies on the fact that pedestrian safety behaviors are an automatic motor skill. The habit of stopping at a street before crossing, and looking for traffic while crossing roads should be built into a person's repertoire of street crossing behaviors through practice.

Therefore, child pedestrian safety education must address the development of these motor skills in addition to increasing knowledge (Percer, 2009).

Effective Bicycle Education

Bicycle education is important because a child's bicycle is the first vehicle they learn to drive. Older children begin their first independent use of the road exploring the world around them via bicycling. At the elementary school age, children are transitioning from utilizing their bicycle as a toy to be ridden on the sidewalk, in a park, or other off-road setting to developing the foundation for a lifelong understanding of traffic and how they can safely interact with and be a part of it. Students exposed to the Basics of Bicycling curriculum (this program's predecessor) targeted at 4th and 5th grade students in North Carolina demonstrated improvements in bicycle safety knowledge as well as riding skills compared to children in control schools not exposed to the curriculum (Stutts and Hunter, 1990).



Regardless of age, many people gravitate toward one type of learning or a combination of learning styles. Types of learning styles used in to teach bicycling include:

- **Visual** — the student learns best by *seeing* things in writing, in picture format, or by observing behavior.
- **Auditory** — the student learns best by *hearing* directions either by an instructor or via an audio tape.
- **Tactile** — the student learns best by hands-on experience including touching parts, pieces, material, etc., and performing the skill being taught.
- **Kinesthetic** — the student learns best by movement, actually performing the skill.

This curriculum applies teaching techniques to reach children across all four learning styles, thus reinforcing the messages and ultimately moving children toward mastery of the correct behaviors. By utilizing active and experiential learning methods, the likelihood of knowledge retention is increased.

Not all children of the same age group have the same processing skills, gross and fine motor skills, or levels of maturity. It is also important to acknowledge that their understanding of bicycling is affected by their lack of experience with traffic. For this reason, instructors need to be flexible and creative, sometimes on the spot. This curriculum allows for adaptation not only to a child's actual age but also to his/her growth and developmental level by offering the three different grade-groupings of lessons.

According to research by Thomas et al., on-bicycle programs, factors associated with the most successful course outcomes: on-road training, lower student to instructor/assistant ratios, more sessions on bikes where bikes available to all students, and more consistent program delivery. In-school bicycling curriculum courses taught on-road to showed greater improvement in more areas and better overall outcomes than those taught on a closed course (2005), though closed course programs including Basics of Bicycling have showed gains.

Due to the inability for all communities in North Carolina to offer on-road programs because of local streets that are not suitable for riding, experience level of instructors and obstacles to parental permission, *Let's Go Biking!* tries to foster knowledge gains by providing a video component for consistent delivery of concepts and to show children real experiences.

More Than Just a One-Day Event

Children are typically really excited about getting on a bicycle at a cycling skills clinic or 'rodeo'. These are fun, educational activities that expose children through a hands-on learning experience and demonstrate basic traffic safety when bicycling. Those types of one-day events, however, are **not** a comprehensive bicycle safety program. Skills practice, which requires more time and extensive preparation, shows the greatest promise for children to adopt safety skills (Tolmie et al., 1996). *Let's Go Biking!* builds in the fun aspects of a cycling clinic as just one part of a broader learning process by providing in-class lessons as well as multiple on-bicycle skill-building activities, and by encouraging the reinforcement and application of the safety principles and skills learned beyond the confines of a gym, blocked-off parking lot, or outdoor basketball court. It is strongly encouraged to conduct the skills lessons over a period of time; however, the lessons can be customized to accommodate a one-day event if necessary.

It is also important to keep in mind that this will likely be the first formal instruction these children have ever received. They will not become expert cyclists as a result of this program alone. Expertise in bicycling, as in many other areas of learning, requires study and practice. Such practice should ideally take place on the road and should be led by traffic-wise bicyclists.

Importance of Skill Development – Building Behaviors to Become Good Habits

Even though motor skills vary widely in type and complexity, the learning process that individuals go through when acquiring various motor skills is similar. Students acquire new skills by incorporating all three stages of motor skill development (Anderson, 1995). First in the "cognitive" stage, the child gains knowledge of facts through instruction, videos, workbooks, and presentations. To move children past this cognitive stage and impact behavior change, children should then practice those learned skills in the "associative" stage. Last, through further and repeated practice in context, the skills and behaviors will become more automatic, thus the "autonomous" stage. With repeated practice and these higher levels of development, children show increased problem solving and require less cognitive effort to execute the skill (Percer, 2009).

Let's Go NC! seeks to engage children in all three stages of development. First, the children gain knowledge through instructor discussion and demonstration. Following this instruction, children are given ample time to ingrain the behavioral experiences through active learning where they practice the skills they have learned. Finally, instructors are encouraged to provide lesson reviews and extensions beyond the basic safety lessons using the broader balanced-curriculum experiences to further take children toward the "autonomous" stage.



Incorporating all three stages of development is critical to developing life-long safe behaviors for both walking and bicycling. In addition, instructors should also engage the children in learning the individual components of each task (i.e., when crossing or entering a street, they follow the steps of (1) stopping at the edge of the street, (2) looking and listening for traffic, etc.) on a repeated basis. By exposing children to these concepts consistently and frequently, children will not only build the habits of actually engaging in the behaviors, but also build their own conceptual understanding of what it means to walk or bicycle safely. Therefore, this program encourages the repeated practice of skill-sets through demonstration, modeling, individual and group applications, and extension activities. This repetition of practice will have an overall higher degree of impact on the child's future behavior.

Stages of Motor Learning	Characteristics	Attentional Demands
Cognitive	Movements are slow, inconsistent, and inefficient. Considerable cognitive activity is required.	Large parts of the movement are controlled consciously.
Associative	Movements are more fluid, reliable, and efficient. Less cognitive activity is required	Some parts of the movement are controlled consciously, some automatically.
Autonomous	Movements are accurate, consistent, and efficient. Little or no cognitive activity is required.	Movement is largely controlled automatically.

Other Benefits of Teaching Bicycling and Walking

Let's Go NC! is also an important program that supports the strategies compiled from various state task forces in the 2011 Eat Smart Move More NC Policy Strategy Platform. This program can help the NC Department of Instruction meet the recommended quality physical education, encourage physical activity in and beyond the classroom, and provides an evidence-based resource that meets the Healthful Living Essential Standards. Teaching bicycle and pedestrian education also contributes to the mission of the Alliance for Health, Physical Education, Recreation and Dance (AAPHERD) by giving children and parents an appreciation for active travel and promoting a healthy lifestyle. Schools can also appreciate the hands-on learning and skill-building activities built into each lesson, as studies have shown physically active children perform better academically, have a more positive attitude toward school, and are better able to stay on-task and focused (Trost, 2009).

Individual lesson components are intended to be taught in ways that are interactive and based on guided discovery, as opposed to rote memorization. Instructors should seek to engage children in the instructor discussion and modeling by asking questions and prompting dialogue. Thus, children will incorporate these basic principles into their own behaviors (Ampofo-Boateng et al., 1993; Thomson et al., 1992; Thomson et al., 2005). Instructors should also allow children to use social interactions with their peers to further promote positive behavior. The option of using older children as models for younger children is one such way to show significant increases in safe behaviors (Thomson and Whelan, 2000; Thomson et al., 2005; Tolmie et al., 1999). Using older children as models and incorporating child-peer-adult discussion on a consistent basis are encouraged throughout the program.



Furthermore, it is critical that skills are introduced in the specific context where they will be used. According to the “encoding specificity principle,” people are more likely to remember what they have learned if the context is similar to when it was encoded (Tulving, 1975). Because children will better remember safe walking and bicycling behaviors when taught in an environment similar to the real world (i.e., near actual roads), as opposed to learning solely in the classroom (Percer, 2009), the lessons encourage instructors to provide supervised and structured experiences in real (or near-real) traffic situations outside the classroom. The skills taught will help children



understand their rights and responsibilities as pedestrians and bicyclists under NC traffic laws and ultimately better prepare them as future motor vehicle drivers. For pertinent North Carolina bicycle and pedestrian laws, see www.ncdot.gov/bikeped/lawspolicies/laws/

Teaching Beyond the Child – Involving Parents and Caregivers

Finally, it is critical to understand that, while parents are significant safety role models for their children, most parents overestimate their own child's knowledge of safe pedestrian practices

(MacGregor et al., 1999) and do not always model correct pedestrian behaviors (Quraishi et al., 2005). The importance of parental involvement and continued learning and practice has been stressed by stakeholders and teachers who have used bicycling curriculum (Thomas L et al, 2005). Therefore, it is important for the curriculum to extend beyond the classroom and provide educational guidance for parents and caregivers to practice with their children.

This program provides multiple opportunities for parental involvement. Instructors are encouraged to solicit parent volunteers to assist with the guided practice portion of the lesson. "Parent/Guardian Tip Sheets" extend the center-based lessons and practice into the home. These "Tip Sheets" are informational handouts distributed at the conclusion of each lesson and contain key concepts and further practice options. They also seek to open communication between the center and home by including space for instructors to reflect on individual child achievement after a specific lesson (i.e., if the child exceeded or met instructor expectations, or if the child needs additional practice at home) as well as space that solicits and encourages parents to respond to the instructor about the child's success at home.



This program seeks to fuse current research on bicycle and pedestrian safety with best practices in education to provide the most comprehensive curriculum for schools, clubs, after-school programs, law enforcement agencies and other organizations to use as the most effective teaching tool for our children. For this reason, *Let's Go NC!* incorporates the following ingredients of a successful curriculum:

- knowledge of skill development
- repeated practice in real-world contexts
- experiences that are interactive and social in nature
- balanced curriculum options
- home-school connections

Curriculum Structure



As outlined and described in previous sections, each lesson set (bicycle or pedestrian) contained in this program is split into three grade-groupings: kindergarten and first, second and third, and fourth and fifth. These groupings emphasize developmentally-appropriate teaching and encourage a progressively complex curriculum as children mature.

Lessons are structured to include various teaching methods and reach children of varying learning styles. The general approach for each lesson is as follows:

1. Lessons begin with a brief introduction.
2. Immediately following, the instructor will guide a discussion and demonstration of the concept. For the bicycle lessons, video clips are utilized to demonstrate concepts.
3. The third component, guided practice through Skill-Building Activities, is the most critical. In this step, children have the opportunity to perform the skills, make choices about how to behave and evaluate their decisions. It is this portion of the lesson that has shown to have the most impact on child skill development.
4. Finally, the instructor concludes the day's lesson with a brief review to finalize the lesson.
5. Follow-up each lesson with the cross-curricular activities provided through the Suggestions for Balanced Curriculum. These help children learn and practice the skills in multiple contexts, thus reaching more diverse learners and supporting long term comprehension. Within a school setting, these lessons that extend beyond health and physical education areas of learning offer ways for elementary teachers to capitalize on the themes of walking and bicycling, may provide homework opportunities, or allow for additional class time outside of that designated with a PE teacher. These activities also allow for after-school programs, clubs, or other organizations that may have less time constraints to reinforce key messages through additional creative suggestions.

Program Flexibility

This program is designed so that it can be used by teachers, community leaders, educators, police, or others who work with children with different levels of experience and can be adapted to meet the needs of children throughout North Carolina. You are encouraged to teach all 5 lessons at the appropriate grade level. The lesson plan format provides you flexibility by:

- Allowing you to glance through lessons and understand the key concepts quickly
- Giving you step-by-step instructions to minimize preparation time
- Listing materials and equipment for each lesson activity but suggesting possible substitutes
- Relating pedestrian and bicycle activities to other subjects, such as writing, mathematics, science and social studies
- Providing suggestions for adjusting the skills course layouts according to the space available

It is important that the core lesson activities are taught to each grade every year because the lessons in the upper grades build on what was learned the year before. Repeated instruction will help students remember more of the knowledge and skills that they need to be safe pedestrians and bicyclists

Let's Go Walking! Structure

The curriculum is designed to begin with the most basic pedestrian safety concepts: learning and practicing how to walk safely near traffic. While this may be a relatively easy task for older children due to their cognitive abilities and ease with combining skills, this component of the program is the building-block for all other lessons. The lessons in the curriculum are intended to be taught sequentially. Mastery of an earlier concept forms a foundation to build on with subsequent lessons.

Instructors should consider ways to incorporate guided practice in the form of the Skill-Building Activity included with each lesson in the most realistic setting as possible, while still remembering to adhere to safety guidelines of the organization, agency, or school responsible for the training. Safety concerns may dictate where the Skill-Building Activity is conducted. Understanding that schools and programs who may use *Let's Go Walking!* are situated in a wide range of environments throughout NC, there are several suggested activity options within each lesson. These range from simulated experiences that require instructors to prepare a model traffic environment to practicing concepts on real streets. Be sure to conduct a site visit in order to determine the most realistic setting you are able to use.



When preparing for the Skill-Building Activities in the Pedestrian Lesson Plans, be certain to conduct an advance site visit to locations which might be suitable. Below are the steps to finding a route to allow for a safe, real-world pedestrian experiences.

Step 1:

- Obtain a map of the areas that you are looking to conduct the skills lesson and walk the possible routes to use in the lesson.
- Keep in mind the time of day you will be performing the activity. Some busy periods may occur during arrival and dismissal at a school, for example, and you will want to avoid those times.

Step 2:

- Look for a route with a combination suitable features on the streets that connect to the facility where you will be conducting the classroom portion of the Pedestrian Lessons. Make a note of features that you will want to point out to your class during the exercise. Examples are given below:
 - Roads with low traffic volumes / Parking lots with low activity
 - Roads with a posted speed limit of 35 MPH or less or traffic calming features like speed humps.
 - Marked crosswalks, pedestrian signals and pedestrian signage at intersections
 - Stop-controlled intersections
 - Marked mid-block crossings
 - Sidewalks (on one or both sides of the roadway)
 - Accessible routes (curb ramps, travel path clear of obstructions)
- Make notes on any areas along the route where children may need assistance from a crossing guard or where it may be necessary to have extra volunteers on hand to assist.

Step 3:

- Choose the best route that corresponds with the lesson concepts that you will be teaching for the day.

The following chart outlines the lessons within the curriculum. It includes the time required, the goal and objectives of each lesson, the lesson prerequisites, and the grade-level plan components.

Lesson 1

Walking Safely Near Traffic

K-1	2-3	4-5
Goal: To teach the basic concepts of sharing spaces with motorized traffic		
<p>Time Allotted: 25-50 minutes</p> <p>Instructor Discussion: Where and How Do We Walk? Use a sidewalk, face the traffic where there is no sidewalk, beware of driveways, and dress to be seen.</p> <p>Class Brainstorming: Rules for safe walking behavior</p> <p>Vocabulary: <i>walker, traffic, reflective materials</i></p> <p>Objectives</p> <ul style="list-style-type: none"> Explain reasons we walk places and identify common places to walk Recognize and demonstrate safe practices near traffic <p>Skill-Building</p> <ul style="list-style-type: none"> Practice behavior on school grounds or take a community walk Dramatize scenarios <p>Lesson Closure & Video Review</p>	<p>Time Allotted: 25-50 minutes</p> <p>Instructor Discussion: Use a sidewalk, face the traffic where there is no sidewalk, beware of driveways, and dress to be seen.</p> <p>Class Brainstorming: Why people walk places, modes of transportation, Rules for safe walking behavior</p> <p>Situations: Are they walking safely?</p> <p>Vocabulary: <i>walker, traffic, reflective materials</i></p> <p>Objectives</p> <ul style="list-style-type: none"> Explain reasons we walk places and identify common places to walk Recognize and demonstrate safe practices near traffic <p>Skill-Building</p> <ul style="list-style-type: none"> Practice behavior on school grounds or take a community walk Dramatize scenarios <p>Lesson Closure & Video Review</p>	<p>Time Allotted: 25-50 minutes</p> <p>Instructor Discussion: Use a sidewalk, walk on the left side facing traffic where there is no sidewalk, beware of driveways, and dress to be seen.</p> <p>Class Brainstorming: Why people walk places, modes of transportation, Rules for safe walking behavior, How can you be safe near driveways?</p> <p>Vocabulary: <i>walker, traffic, reflective materials</i></p> <p>Objectives</p> <ul style="list-style-type: none"> Explain reasons we walk places and identify common places to walk Recognize and demonstrate safe practices near traffic <p>Skill-Building</p> <ul style="list-style-type: none"> Practice behavior on school grounds or take a community walk Dramatize scenarios <p>Lesson Closure & Video Review</p>

Lesson 2

Crossing Streets Safely

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K-1

2-3

4-5

Goal: To teach or review the basic concepts of crossing streets safely using care and caution

Time Allotted: 25-50 minutes

Instructor Discussion: Cross with an adult, Identify a safe place, Stop at the edge, Look and listen for traffic, Cross quickly and safely

Class Brainstorming: Why do we cross streets? Who do we cross with?

Vocabulary: *edge, left, right*

Objectives

- Recognize that they should only cross the street with an adult
- Use care and caution when crossing small neighborhood streets
- Recognize not to step from behind parked cars
- Identify and demonstrate the five steps to crossing the street

Skill-Building

- Practice crossing on school grounds or take a community walk
- Role play and practice on model street

Lesson Closure & Video Review

Time Allotted: 25-50 minutes

Instructor Discussion: Cross with an adult, Identify a safe place, Stop at the edge, Look and listen for traffic, Cross quickly and safely

Class Brainstorming: Why do we cross streets? Who do we cross with? Where is it safe to cross? What do we do when there is a visual barrier? Safe behaviors

Vocabulary: *visual barriers, second edge, shoulder check, diagonal*

Objectives

- Recognize that they should only cross the street with an adult
- Use care and caution when crossing small neighborhood streets
- Recognize not to step from behind parked cars
- Identify and demonstrate the five steps to crossing the street

Skill-Building

- Practice crossing on school grounds or take a community walk
- Role play and practice on model street

Lesson Closure & Video Review

Time Allotted: 25-50 minutes

Instructor Discussion: Types of streets, Identify a safe place to cross, Stop at the edge, Look and listen for traffic, Cross quickly and safely, Be cautious in bad weather, Be a role model

Class Brainstorming: Why is important to cross safely? Why should we be role models? Where is it safe to cross? What do we do when there is a visual barrier? Safe behaviors

Vocabulary: *mid-block, visual barriers, second edge, diagonal*

Objectives

- Use care and caution when crossing small neighborhood streets
- Recognize the need to set an example for younger children
- Identify and demonstrate the five steps to crossing the street

Skill-Building

- Practice crossing on school grounds or take a community walk
- Role play and practice on model street

Lesson Closure & Video Review

Lesson 3

Crossing Intersections Safely

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Curriculum
Structure

K-1

2-3

4-5

Goal: Reviews how to cross a street, and teaches skills for crossing intersections safely and understanding basic traffic signals

Time Allotted: 25-50 minutes

Instructor Discussion: Review steps for crossing streets safely, Look and listen for traffic in front and behind, Look for traffic signals, Cross quickly and safely

Class Brainstorming: Why do we cross streets? Who do we cross with?

Vocabulary: *crosswalk, intersection, traffic signal, front, behind, stop sign*

Review: 'Crossing the Street' song

Objectives

- Demonstrate safe behavior while approaching and crossing an intersection
- Recognize and interpret signs & signals

Skill-Building

- Practice crossing an intersection near school grounds or in nearby community
- Play 'Red Hand, Walking Man' game

Lesson Closure & Video Review

Time Allotted: 25-50 minutes

Instructor Discussion: Review steps for crossing streets safely, Look and listen for traffic in front and behind, Look for traffic signals, Cross quickly and safely

Class Brainstorming: Where are cars coming from at an intersection? What do these traffic signs and signals tell us?

Vocabulary: *crosswalk, intersection, traffic signal, front, behind, stop sign, directions*

Review: 'Crossing the Street' song

Objectives

- Demonstrate safe behavior while approaching and crossing an intersection
- Recognize and interpret signs & signals

Skill-Building

- Practice crossing an intersection near school grounds or in nearby community
- Play 'Red Hand, Walking Man' game

Lesson Closure & Video Review

Time Allotted: 25-50 minutes

Instructor Discussion: Review intersections and crosswalks, Safe steps for crossing the street, Look and listen for traffic in front and behind, Look for traffic signs and signals, Cross quickly and safely

Class Brainstorming: Where are cars coming from at an intersection? What do these traffic signs and signals mean? What do these phases on a pedestrian signal mean? When is it our turn to cross the street?

Vocabulary: *crosswalk, intersection, traffic signal, pedestrian signal, stop sign, countdown*

Objectives

- Demonstrate safe behavior while approaching and crossing an intersection
- Recognize and interpret signs & signals

Skill-Building

- Practice crossing an intersection near school grounds or in nearby community
- Play 'Red Hand, Walking Man' game

Lesson Closure & Video Review

Lesson 4

School Bus Safety

Instructor's
Guide
Section 2

Curriculum
Structure

K-1

2-3

4-5

Goal: To teach safe bus riding behavior as well as safe waiting, boarding and exiting techniques.

Time Allotted: 25-50 minutes

Instructor Discussion: Review safely walking to the school bus stop; Identify danger zones; Safe behaviors while: waiting for, riding and exiting a school bus. Discuss what to do if child drops something near the bus.

Class Brainstorming: Why do we ride a school bus? How do we get to the school bus stop safely? Where are the dangerous areas around a school bus?

Vocabulary: *bus stop, school bus, danger zone, bus driver, crossbar, passenger*

Objectives

- Demonstrate safe behavior waiting, boarding, riding, and exiting the bus
- Identify “danger zones” around a bus and responsibilities of people on the bus

Skill-Building

- Practice safe behaviors on a school bus
- Practice scenarios using the model school bus and sing the “Safety on the School Bus” song

Lesson Closure & Video Review

Time Allotted: 25-50 minutes

Instructor Discussion: Review safely walking to the school bus stop; Identify danger zones; Safe behaviors while: waiting for, riding and exiting a school bus.

Class Brainstorming: How do we...Walk to the bus stop? Cross the road safely? Act while waiting for the school bus? Stay out of the danger zone? Board, enter, and exit a school bus safely? What do I do if I drop something?

Vocabulary: *bus stop, school bus, danger zone, bus driver, crossbar, passenger*

Objectives

- Demonstrate safe behavior waiting, boarding, riding, and exiting the bus
- Identify “danger zones” around a bus and responsibilities of people on the bus
- Understand why school buses deserve respect and caution

Skill-Building

- Practice safe behaviors on a school bus
- Invite bus driver to share experiences; Practice using model school bus & sing “Safety on the School Bus” song

Lesson Closure & Video Review

Time Allotted: 25-50 minutes

Instructor Discussion: Review safely walking to the school bus stop; Identify danger zones; Safe behaviors while: waiting for, riding and exiting a school bus.

Class Brainstorming: How do we: Walk to the bus stop? Cross safely? Wait for the school bus? Act on the school bus? Stay out of the danger zone? Board, enter, and exit a school bus? What do I do if I drop something?

Vocabulary: *bus stop, school bus, danger zone, bus driver, crossbar, passenger*

Objectives

- Demonstrate safe behavior waiting, boarding, riding, and exiting the bus
- Identify “danger zones” around a bus and responsibilities of people on the bus
- Understand safety precautions when crossing in front of a school bus

Skill-Building

- Practice safe behaviors on a school bus
- Invite bus driver to share experiences; Practice scenarios using model school bus and play “Cool or Uncool” game.

Lesson Closure & Video Review

Lesson 5

Parking Lot Safety

Instructor's
Guide
Section 2

Curriculum
Structure

K-1

2-3

4-5

Goal: To teach children safe behaviors when entering and existing vehicles, and walking in a parking lot

Time Allotted: 25-50 minutes

Instructor Discussion:

Describe parking lots; Explain safe behavior for: Exiting a car carefully, Waiting by the car for an adult, Crossing the lot, and Re-entering the car; Review rules for walking safely near traffic

Class Brainstorming: What parking lots do we need to cross safely?

Vocabulary: *parked cars, parking lot*

Objectives

- Demonstrate safe behavior for exiting and re-entering a vehicle
- Demonstrate walking safely in a parking lot

Skill-Building

- Practice safe behaviors in school or nearby community parking lot
- Practice scenarios using the model parking lot and play "Simon Says" game.

Lesson Closure & Video Review

Time Allotted: 25-50 minutes

Instructor Discussion:

Describe parking lots; Explain safe behavior for: Exiting a car carefully, Waiting by the car for an adult, Crossing the lot, and Re-entering the car; Review rules for walking safely near traffic

Class Brainstorming: Where do I need to practice parking lot safety? What to do if a car is moving near me? What should I do if I drop something in the parking lot?

Vocabulary: *parked cars, parking lot*

Objectives

- Demonstrate safe behavior for exiting and re-entering a vehicle
- Demonstrate walking safely in a parking lot

Skill-Building

- Practice safe behaviors in school or nearby community parking lot
- Practice scenarios using the model parking lot and play "Simon Says" game.

Lesson Closure & Video Review

Time Allotted: 25-50 minutes

Instructor Discussion:

Describe parking lots; Explain safe behavior for: Exiting a car carefully, Waiting by the car for an adult, Crossing the lot, and Re-entering the car; Review rules for walking safely near traffic

Class Brainstorming: How do I walk safely near traffic? How do I know when a car is backing up? What should I do if I drop something in a parking lot?

Vocabulary: *back-up lights*

Objectives

- Demonstrate safe behavior for exiting and re-entering a vehicle
- Demonstrate walking safely in a parking lot

Skill-Building

- Practice safe behaviors in school or nearby community parking lot
- Practice scenarios using the model parking lot and play "Simon Says" game.

Lesson Closure & Video Review

Let's Go Biking! Structure

Due to developmental differences in the fine and gross motor skills as well as cognitive abilities in elementary aged children, the *Let's Go Biking!* covers differing, but overlapping, topics and skills for among and across each grade-group. Lessons within each grade-group are to be taught sequentially, so that earlier concepts learned serve as a foundation for the subsequent lessons. Key messages and learning objectives also build upon and reinforce concepts and skills from one grade-group to the next, while the number and complexity of the skills taught increases from one level to the next.

The following chart outlines the lessons within *Let's Go Biking!* It includes the time required, the goal and objectives of each lesson, the lesson prerequisites, and the grade-level plan components.



Lesson 1

Instructor's
Guide

Section 2

Curriculum
Structure

K-1

Gearing Up

Goal: To help students understand the bicycle and why helmets are important

Time Allotted: 25-30 minutes

Instructor Discussion:

Preparing the cyclist, bike and helmet before riding; demonstrating why helmets are important

Vocabulary: *helmet, visible, frame, wheel, pedals, seat, handlebars*

Objectives

- Understand wheels and their role in transportation
- Know the basic parts of the bicycle
- Understand why a helmet is required
- Identify appropriate clothing to wear

Activity

- Understand dangers of brain injury and why children should wear a helmet

Lesson Review

2-3

Go by Bike

Goal: To teach children where to ride a bike

Time Allotted: 25 - 30 minutes

Instructor Discussion: Where people ride bikes, where they belong, why people ride bikes, health benefits of riding, and the importance of wearing a helmet

Vocabulary: *greenway, sidewalk, exercise, smog, physical activity*

Objectives

- Identify safe places to ride bikes
- Name reasons people ride bikes
- Understand health benefits
- Explain how to fit a helmet correctly

Skills Practice

- Understand dangers of brain injury and practice fitting helmets properly

Lesson Review

4-5

Getting Ready to Ride

Goal: To teach about bicycle equipment and rules of the road

Time Allotted: 25 - 30 minutes

Student Pre-Test

Video Instruction

Instructor Discussion:

Bicycling contributes to a healthy lifestyle, asking an adult before riding, basic equipment, rules of the road, and signs and signals.

Vocabulary: *Cardiovascular exercise, derailleur, yield*

Objectives

- Explain how bicycling contributes to a healthy lifestyle
- Identify appropriate, safe bicycling equipment
- Recognize basic traffic signs and signals and interpret their meaning for bicyclists
- Describe the basic rules of the road

Skills Practice

- Practice fitting helmets properly

Lesson 2

K-1

Go By Bike

Time Allotted: 25 - 30 minutes

Goal: To teach children where to ride a bike

Instructor Discussion: Where and How to Ride a Bike and Wear a Helmet

Vocabulary: *greenway, exercise, environment, cycling*

Objectives

- Identify safe places to ride bikes
- Name reasons people ride bikes
- Understand health benefits
- Explain how to fit a helmet correctly

Activity

- Understand who community helpers are and where a child can go to for help in an emergency

Lesson Review

2-3

Signs, Signals, and Safety

Time Allotted: 25-30 minutes

Goal: To help students understand how to be visible and ride safely

Instructor Discussion: How to be visible to motorists, checking your bike before riding, understanding signs and signals and following the rules

Vocabulary: *reflective, rules, signals*

Objectives

- Know how to make themselves and their bikes more visible for safety
- Check their bikes to see that everything is working properly
- Identify traffic signs and signals and what they mean
- Understand the rules of the road and why cyclists must obey them

Activity

- Understand signs and signals a bicyclist may encounter on the roadway

Lesson Review

4-5

Bicycling Basics

Time Allotted: 30 - 40 minutes

Goal: To teach safe bicycling behavior

Video Instruction

Instructor Discussion: Communicating with other traffic, avoiding risky situations, and reacting to others.

Vocabulary: *hazard, directional cues, risk*

Objectives

- Demonstrate proper hand signals
- Identify risky behaviors
- Recognize hazards and high-risk situations to avoid when bicycling
- Recognize directional cues from motorists

Activity

- Know equipment and use the ABC Quick Check to assess the bicycle

Lesson Review

Lesson 3

K-1

Signs, Signals, and Safety

Time Allotted: 25-30 minutes

Goal: To recognize and understand safety signs and signals to ride safely

Instructor Discussion: What is traffic, how to understand traffic signs and signals, and how to follow the rules

Vocabulary: *sign, signal, vehicle, traffic, behavior*

Objectives

- Recognize and understand signs and what they mean
- Identify vehicles by size and type
- Learn the hand signals that cyclists should use when riding
- Identify good behaviors for cycling safely

Skills Practice

- Traffic Light Game
- Safe or Unsafe

Lesson Review

2-3

Bicycling Basics

Time Allotted: 25-30 minutes

Goal: To help children understand about helmets and behaviors that will keep them safe when biking

Instructor Discussion: Watch for driveways, use hand signals, avoid risky behaviors, wear helmet correctly

Vocabulary: *danger, risky, driveway, hand signal*

Objectives

- Know what they need to do before they ride.
- State what they should do when they come to a driveway to avoid colliding with a vehicle.
- Be able to use the proper hand signals.
- Understand risky behaviors to avoid.

Skills Practice

- Hand signals
- Practice fitting helmets properly
- Identifying safety do's and don'ts

Lesson Review

4-5

Bike Control

Time Allotted: 30 - 40 minutes

Goal: To teach bicycling handling skills

Instructor Discussion & Skill-Building: Controlling the bicycle while communicating intentions to others.

Vocabulary: *hazard, maneuver, swerve*

Objectives

- Ride in a straight line without wobbling
- Demonstrate control while stopping quickly
- Scan ahead and behind without swerving
- Use hand signals while bicycling to indicate turning or stopping.
- Identify and safely maneuver around hazards

Skill-Building Activity

- Practice fitting helmets properly
- Check and adjust bicycle for fit
- Ride in a straight line
- Practice quick stops at the "Whistle Stop"
- Practice "Scan, Plan and Do" while bicycling
- Practice using hand signals while bicycling playing "Follow the Leader"
- Practice avoiding hazards in "Hazard Dodge"

Lesson Review

Lesson 4

K-1

Bicycling Basics

Time Allotted: 25-30 minutes

Goal: To improve riding skills while being alert for dangers

Instructor Discussion & Skill-Building: Instructor will discuss the senses and the dangers at driveways then demonstrate the hand signals and scanning for vehicles

Vocabulary: *sight, signal, hearing, touch, driveway*

Objectives

- Know how to use hand signals
- Identify which senses to use to detect traffic
- Demonstrate how to scan for vehicles
- Explain why driveways are dangerous

Skills Practice

- Hand signals practice
- Checking over shoulder
- Balance exercise
- Strength exercise

Lesson Review

2-3

Bike Control

Time Allotted: 25-30 minutes

Goal: To help students develop bicycle control and communicate with others.

Instructor Discussion & Skill-Building: Instructor will explain the rules for practice and what students will do on the course

Vocabulary: *driveway, wobble, straight line, intentions, Power Pedal*

Objectives

- Know how to properly fit bike & helmet
- Use Power Pedal to start off smoothly and quickly.
- Stop quickly and smoothly
- Stop at the end of the driveway or at a stop sign.
- Ride bikes in a straight line without wobbling.
- Signal intentions to others around them

Skill-Building Activity

- Helmet fitting
- Bike fitting
- Start off with Power Pedal
- Stop quickly and safely
- Stop at end of driveway
- Ride in a straight line
- Practice hand signals

Lesson Review

4-5

Cooperative Riding

Time Allotted: 30 - 40 minutes

Goal: To teach predictable bicycle riding and how to anticipate the movement of others

Instructor Discussion & Skill-Building: Riding predictably and “reading” communication from others

Vocabulary: *roadway, motorists, predictably*

Objectives

- Safely enter and exit a ‘roadway’
- Make turns after using hand signals.
- Identify and respond to traffic signs and signals
- Identify and respond to high-risk situations, avoiding conflicts.
- Communicate and cooperate with other pedestrians, bicyclists and ‘motorists’ by riding predictably.
- Predict the movements of others by ‘reading’ directional cues.

Skill-Building Activity

- Practice fitting helmets properly
- check and adjust bicycle for fit
- Practice entering and exiting driveways
- Practice “Pass with Care” exercise
- Practice scanning for and reacting to hazards while sharing the road with ‘motorists’

Lesson Review

Lesson 5

K-1

Bike Control

Time Allotted: 30-45 minutes

Goal: Balance and control of a simplified bicycle

Instructor Discussion & Skill-Building: Explain the activity then conduct the practice

Vocabulary: *balance, straight line, braking, slowing, stopping*

Objectives

- Demonstrate how to properly wear a helmet
- Scoot and balance a bike
- Propel themselves in a straight line
- Learn to stop safely

Skill-Building Activity

- Helmet Fitting
- Bike Fitting
- Scoot and Balance
- Ride in a Straight Line
- Stop Quickly and Safely

Lesson Review

2-3

Cooperative Riding

Time Allotted: 30-45 minutes

Goal: Further develop bike skills and learn to cooperate with others

Instructor Discussion and Skill-Building: Explain the activity and skills for the course

Vocabulary: *control, cooperate, scan, hazard*

Objectives

- Scan behind over their shoulder to check for vehicles
- Follow other cyclists safely
- Signal appropriately
- Interact safely with other cyclists

Skill-Building Activity

- Signal Turns
- Scan over Shoulder
- Follow the Leader
- Hazard Dodge

Lesson Review

4-5

Basic Traffic Skills

Time Allotted: 30-40 minutes

Goal: To teach children how to negotiate more challenging traffic situations

Instructor Discussion & Skill-Building: Skills for using a bicycle as a vehicle.

Vocabulary: *intersection, motorists, predictably, anticipate*

Objectives

- Ride cooperatively with other bicyclists, 'motorists' and pedestrians
- Respond correctly to traffic signs and signals at one-way street and intersection configurations
- Ride predictably, anticipate and respond to others, including pedestrians
- Scan, use hand signals, and avoid hazards while bicycling

Skill-Building Activity

- practice fitting helmets properly
- check and adjust bicycle for fit
- practice entering and exiting 'driveways'
- practice using hand signals while bicycling
- practice cooperative maneuvering skills, riding predictably, and interpreting cues from others
- practice negotiating right-of-way at '4-way stop'
- practice interpreting & responding to 'traffic signals'
- practice yielding to pedestrians

Student Post-Test

Materials Needed for Teaching

As stated in the first section on current research on education, instructors should incorporate supervised and structured experiences in real (or near real) traffic situations. Within each lesson, instructors are given the option to encourage skill-building practice in one of three ways: to bring children out into the community at real-world streets, intersections, and parking areas; to bring children to a near-road or parking area to practice the behaviors; or to simulate the experience by creating a model, to bring children to a near-road or parking area to practice the behaviors.

The amount of materials necessary for each lesson may vary due to the skill-building option each instructor chooses.

Instructors are encouraged to customize the curriculum according to the specific geographic locale (i.e., urban versus suburban or rural) in which they will teach. By using photographs, language, and descriptions specific to their community, instructors can further promote the understanding and practice of safe walking behaviors.

Standard materials provided with this curriculum for all lessons include Parent/Caregiver Tip Sheets and Student Assessment worksheets and answer keys. Some lessons may have additional materials supplied as part of the lesson set. These may include:

- Vocabulary cards
- Situational pictures or picture cards
- Model diagrams
- Song lyrics

Other basic materials to be secured by the instructor may include items like flip chart paper and markers, tape, yard sticks, colored paper; and cones, bean bags, rope or other material to replicate the model scenarios laid out in the diagrams (street, sidewalk, bus, intersection, etc.). Refer to the Materials list at the front of each lesson for the particular supplies needed for that lesson.

For the bicycle lessons a materials list is provided. More guidance for conducting the bicycle lessons, including materials specific to that portion of the curriculum, is given in the next section.

Organizing the Bicycle Skills Lessons

Teaching the on-skills bicycling lessons requires handling a few more logistical tasks. The most significant involve having necessary materials, equipment, and volunteers on hand. Conducting skills lessons can be as simple or elaborate as resources can support. This instructor's guide is based on an assumption that a nominal budget is likely. The following basic steps apply regardless of the resources available for approximately 12-30 elementary-aged students as your target audience. For guidance on skills-based instruction with a medium or large audience, please see **Appendix D**.

Step 1. Determine the Size, Resources, and Format for the Lesson

Ask yourself the following questions to determine your planning process.

Size: The larger the class size, the more planning and time are necessary.

How large will the program be?

- **Small:** targets a local group or single school with a very limited budget
- **Medium:** targets a larger community with the public invited, but with a small budget. See **Appendix D**.
- **Large:** targets a citywide audience with significant budget and publicity. Consider hiring a professional to plan event and direct volunteers. See **Appendix D**.

Note: While this curriculum can be utilized by larger events to conducting each skills lesson back-to-back at a 1-day event, it is designed to be utilized by smaller groups that will teach these lessons over a period of time, allowing children time to practice the skills at home and build on the lessons learned in a previous session.

What resources are available?

- **Limited Resources:** small number of volunteers, participants must bring their own bicycles
- **Good Resources:** several volunteers and a supply of bicycles in good repair that participants can use.

Note: There may be variations across these two examples, as the number of volunteers needed may also depend on whether additional staff or instructors are on-hand within an organization, after-school program, or school. Also, there may be a mix between the two extremes of all bicycles supplied by the instructor versus all the bicycles brought by the children.

What level of experience is on hand?

- Has the lead organization (school, police department, YMCA, etc.) ever run a cycling skills clinic or other on-bicycle skills program previously? Is there an experienced instructor on staff?
- If not, is there an experienced instructor available that can be brought in?
- Are there ways to build up in-house staff experience prior to implementing the program?

Note: The NCDOT Safe Routes to School Program may periodically offer 'train-the-trainer' workshops to those interested in becoming experienced instructors. These workshops offer an ideal opportunity to learn how to teach bicycling to children specifically using this curriculum and provide hands on practice for setting up the course layouts, running through the exercises, understanding developmental nuances across the different grade groups, and common tips for success.

What format would work best for instruction?

Format: The format for the program identifies how it will be administered. It is often based on the number of children, volunteers, and bicycles available.

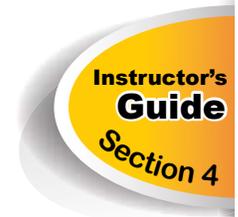
- **By Class:** Small event – can be offered as a physical education class running 12-30 children through each lesson in a 45-50 minute period. ***This is the recommended format upon which the lessons in this curriculum are based.*** Setup for the skills lessons may require several hours the day before, so plan around availability of the facility (gym, parking lot, blocked-off local street, etc.) and the security needs between setup and the class.
- **By Grades/Age Groupings:** Is easily adaptable for schools that choose this format. The curriculum can be conducted in 2-4 hours for each lesson set and can accommodate more children, such as all 4th graders or as an event for all 4th and 5th graders.

Note: Regardless of the size and format of the program, much of an instructor's or lead coordinator's effort will be spent planning and organizing for the on-skills lessons. The time available for planning and organizing the bicycle skills lessons will determine what type of size and format will work best.

Additional considerations:

- Will an entire school (multiple grades and ages) implement the program? Will only a subset use the curriculum, such as just 4th and 5th graders? Will one class go through at a time during their scheduled physical education or health education time (which may be taught by a PE teacher and meet once or twice a week), or will it be integrated into the regular class time (e.g. taught by the 4th grade teacher each day within one week)?
- The age of the participating audience determines the skills lessons to be taught and, ultimately, the skills stations required. Children under 10 years old can go first and get finished faster, since the course for younger children is limited compared to that for older children. Older children may also be more experienced at bicycling. Those who have already mastered the basics can be presented with additional challenges (see challenge activities in grade 4-5 lessons) and potentially a neighborhood ride at the conclusion of the program.

Planning Matrix for Skill-Building Activities



Planning Matrix for Skill-Building Activities	
Event Size	<p>Small (12-30 children at one time)</p>
Good Resources	<p>Focus primarily on:</p> <ul style="list-style-type: none"> • Location • Date/time <p>Example Scenario:</p> <ul style="list-style-type: none"> • A trailer of bicycles and helmets with paid or volunteer instructors and helpers are utilized. • A typical program of this type may be training for a Boy Scout troop, part of a school's PE class, etc. • Limited marketing efforts are required because the target audience is established, but reminders to staff, parents, and children will be necessary. <p>Advantage: Supplying equipment may mean the bicycles are well maintained. This lessens preparation time and leave greater time for children to actually be on the bikes.</p> <p>Tip: Local advocacy groups may purchase an outfitted trailer and provide skills lessons as part of community outreach efforts.</p>
Limited Resources	<p>Focus primarily on:</p> <ul style="list-style-type: none"> • Location • Date/time • Recruiting <p>Example Scenario:</p> <ul style="list-style-type: none"> • Children bring own bicycles and helmets. This will require more time for maintenance checks of equipment. Some spare bicycles and helmets should be on hand in case a child doesn't own it or it is not suitable (i.e. improper size bike or helmet fit). • Recruiting volunteers may require a significant effort unless this program is regularly conducted and there is a core group from which to draw. • A typical program of this type may be training for a Boy Scout troop, part of a school's PE class, etc. • Limited marketing efforts are required because the target audience is established, but reminders to staff, parents, and children will be necessary. <p>Advantage: children can practice on their own bicycles. Their helmets most likely will be properly fitted.</p> <p>Tip: recruit maintenance volunteers from a local bike shop to help assess equipment and make simple, quick repairs on the spot in exchange for some free advertising.</p> <p>Tip: local police departments may have access to and be willing to donate abandoned or stolen bicycles.</p>

Step 2: Choose the Date, Time and Place

Date, time and place for the on-bicycle skill-building activities may be determined by school or calendar constraints, or these decisions may be made with approval from others.

Date

- Weekday events work well for school and after-school programs. This timing is particularly applicable for small single-school events. Weekend events may interfere with other activities such as sports practice or homework but may be necessary to reach a broader range of participants.
- If taught at school during the school day, check the school calendar to make sure the lesson dates don't conflict with another event, holiday, etc.
- Make sure school administrative staff have approved the program and that the dates are documented on the school calendar.
- Consider needs for back-up options or rain dates in the event of unexpected circumstances or bad weather.

Time

- Spring and fall are ideal times for outdoors bicycle lessons; lessons to be held in winter or summer months can be taught indoors.
- Late in the school year gives teachers the opportunity for fun lessons with the students. Some schools prefer conducting the lessons indoors during the winter months to prepare children for spring bicycling weather.
- The beginning or end of the school day may allow for greater availability of volunteers.

Place

- Because elementary age children tend to take information very literally, it is strongly encouraged to use a blocked-off road when possible to practice the skills lessons.
- Where a local street setting is not possible, consider using a parking lot, large basketball court or other suitable outdoor venue. Design the skills stations and course to look as much like the road as possible.
- Gymnasiums or other large indoor venues are also suitable. Considerations for indoor sites may also allow for an alternative location in the event of bad weather without the need to re-schedule the lesson on a different date.
- A smooth, flat, closely-cut grassy area or unpaved surface could also be substituted when no other suitable options are available.

Step 3: Establish a Timeline

A basic timeline is strongly encouraged to help instructors determine where efforts need to be placed and to assist in the delegation of responsibilities when feasible. No matter how small the program, if volunteers, equipment, space, or approvals are needed a basic timeline is helpful. Work backwards from the anticipated dates for the lessons to chart when key tasks must be completed. See a Sample Timeline in **Appendix A**.

Step 4: Establish Roles and Responsibilities

Regardless of the event size, a list of duties can help an individual instructor or a committee to keep track of responsibilities and roles for those tasks that are delegated. Such duties include:

- Recruiting volunteers
- Arranging for (temporary or permanent) storage of equipment (bikes, helmets, etc.)
- Distributing and collecting parental consent forms
- Determining outreach and marketing efforts
- Including students with disabilities
- Making copies of parent/caregiver tip sheets and other handout materials as needed
- Purchasing materials as needed
- Course set up and marking
- Clean up/break down

You don't need to be an 'expert' bicyclist to teach this course

Cycling skills needed:

The ability to:

- Ride straight with one or two hands on handlebars
- Ride straight while looking over either shoulder
- Avoid obstacles without swerving wildly
- Ride cooperatively and confidently with other road users

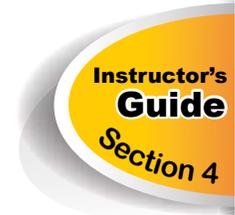
If you don't have the skills or knowledge

Find others to help: Contact local bicycle shops and bike clubs in the area.

Develop your own skills: Bicycling is an excellent low-impact form of aerobic exercise enjoyed by people of all ages. It is a fun and a wonderful way to get around. Becoming a proficient rider will be good for your lifestyle!

This curriculum is supported by several short video segments that show bicyclist performing the required maneuvers. These can help an instructor with limited bicycling skills to still run an effective course. Be sure to review each lesson and clarify any material you don't understand.

Step 5: Identify Sources for Volunteers, Partnerships, and Funding



Volunteers

When there are not enough staff to assist, volunteers are vital to successfully and efficiently run the skills lessons.

- Frequently law enforcement officers, fire departments, emergency service providers, or school nurses like to take part in cycling skills sessions. They have a powerful incentive to work on public safety events — they want to help community members prevent injuries and fatalities caused by bicycle crashes. Anyone would prefer taking part in preventing injury than responding after the fact. The ultimate goal of this interactive educational experience is the prevention of bicycle crashes.
- Many local organizations or clubs like the Rotary or Kiwanis for example, participate in such events.
- Use parents as volunteers whenever possible to give them additional exposure to the safety messages. It helps them reinforce the messages with children after the program.
- Sources of Volunteers:

Community service organizations

Faith-based organizations

Schools

Fire departments

Police departments

Health departments

Hospitals or rehabilitation centers

Driver education teachers

Pediatricians, family practice providers

Bike shops

Cooperative extensions, 4-H

Parent–teacher organizations

Emergency medical services

Injury prevention advocacy groups

Bicycle clubs or coalitions

League cycling instructors*

Libraries

Girl's or boy's clubs or scout programs

** Certified instructors through the League of American Bicyclists*

Partnerships

Organizations needing assistance to gather the supplies, equipment and other resources needed to conduct the skills lessons may seek to partner with other organizations to donate items needed or provide monetary contributions. Identify partners willing to cover the cost of promotional material, supplies, ribbons, prizes, or refreshments, etc. For ideas of potential partners, review the list of sources of volunteers above. While these same groups may not be in a position to offer volunteers, they may be able to cover some items, or may be seeking tax write-offs or be interested in providing monetary support towards a safety education effort.

Funding

Similarly, there are many foundations and grants resources that may award funds to organizations that need assistance in implementing this curriculum. Local, state and federal agencies or foundations with missions to reduce injuries, improve public health, increase physical activity, promote active transportation, or improve child safety are all potential sources for this type of funding.

Step 6: Market to the Target Audience

For small, single-school programs or those taught through established after-school clubs or organizations, publicity or parent awareness is normally done via the typical means of communicating with parents: backpack news, e-mail listservs, phone trees, posters, parent/teacher meetings, and through the children themselves.

Market to Parents/Caregivers

While the target audience is the children, ultimately parents and caregivers will decide whether their child may participate in the program. They can also assist their child in practicing these skills at home, reinforcing and modeling safe behavior. Notifications to parents should:

- Provide enough information about the bicycle education program, such as what it is, what they will be doing, what is expected, what the child will learn, etc., so the parent/caregiver feels comfortable signing the parental release form allowing the child to participate. See the sample Parent Notification Letter and Consent Waiver in **Appendix B**.
- Reinforce the desired safety messages and skills. It is not uncommon for the children to be clear on the safety messages, only to have it undermined by parents, grandparents, or other adults who grew up with a different set of rules. In addition to participants, adults are critical to reinforcing these safety messages. The Parent/Caregiver Tip Sheet supplied with each lesson help instructors to convey the same messages to the adults at home.

Leading the Bicycle Skill Building Activities

Review the lesson plans and the videos before you instruct to get a good idea of the skills that the children will be performing. Use the **Skill-Building Activities Checklist** to keep track of the logistics you need to finalize before conducting the outdoor lessons. Watch the **Teaching the Skill-Building Activities video** for a visual overview of how to set up and run a course. You'll need bicycles, helmets, props, materials to lay out and mark the course and the course layout to get started.

A complete list of materials, equipment and props needed are included upfront within each lesson. Below is a summarized, basic list of the materials generally needed for any cycling skills lesson.

Helmets, Bicycles, Tools, and Course Props

Helmets

The instructor and each child will need a bicycle helmet for each on-bicycle Skill-Building activity as well as the classroom lessons where indicated. Every child who participates **MUST** wear a helmet when bicycling. It is ideal for children to bring their own helmet, but contingencies should be made for those who may not have one, or have one that does not fit properly. Loaner helmets, discounted helmets for sale, or free giveaways offer different ways to ensure that all children can participate. The Bicycle Helmet Safety Institute offers a consumer resource for the purchase of inexpensive helmets, see <http://www.bhsi.org/cheapies.htm>. Also, NCDOT's Division of Bicycle and Pedestrian Transportation offers a limited number of helmets to groups getting bicycle safety and education programs started through its Bicycle Helmet Initiative, see http://www.ncdot.gov/bikeped/safetyeducation/helmet_initiative/.



If helmets are supplied by the program, be sure to have a range of sizes and colors for use – bike shops can give advice on models, sizing, and tips for fitting a helmet properly. All helmets must meet the safety standard set by the Consumer Product Safety Commission (CPSC), including those brought from home. There are different helmets available for different activities, and each type is made to protect the head from the impacts that are common to that particular activity or sport. If the helmet is a multi-use sport helmet, check the box or packaging to make sure it is listed as suitable for bicycling. Ski, hockey, or other sport helmets should be discouraged, as they don't provide protection for the needs of a bicyclist as well as one designed specifically for cycling.

If you have difficulty fitting helmets, NHTSA has an instructional video that breaks down helmet fitting into several steps: <http://www.nhtsa.gov/DOT/NHTSA/Traffic%20Injury%20Control/Multimedia/BikeSafety.wmv>

Surgical, Shower, or Painter's Caps

For programs with helmets that are shared, a barrier over each child's head is needed to prevent the transmission of communicable diseases like lice, a relatively common occurrence in school-age children. Local hospitals or medical supply agencies may provide surgical caps. Whatever cap is used, it should be worn over the child's head prior to putting on the borrowed helmet. Helmets may also be sprayed with disinfectant and wiped down with paper towels after each use.

Bicycles

This program works best with groups of 12 to 20 children on bicycles for the Skill-Building Activity. Determine in advance if participants will bring bicycles from home or if the program will be providing them. Ideally some bicycles should be available so as not to exclude those who don't own bicycles.

If a set of bikes will be purchased for the program, make sure they are of good quality and easy to maintain – they will be used by many children over a period of years.

Consider getting bicycles with these features:

- Single speed bicycles
- Enclosed chains (chain guard)
- Quick-Release seats and wheels
- Hand brakes

Work with a local bike shop to find bicycles that satisfy these basic elements and you'll be glad you did. These bicycles will be simpler to maintain in the long-run and be easier to adjust to properly fit riders of differing heights. Coaster brakes make it difficult for riders to position themselves for a 'Power Pedal' so hand brakes are preferred for Skill-Building activities.

Note: Some schools or bicycle coalitions have bicycles that can be loaned.

Tools

It is advisable to have a volunteer on hand who is knowledgeable about making basic adjustments to children's bicycles. While not comprehensive, the following is a list of the most common tools used for adjusting children's bicycles:

- Bicycle Pump
- Hex Keys (Allen Keys): 4mm, 5mm, 6mm
- Adjustable Wrench
- Metric Crescent Wrenches: 8-15mm
- Pedal Wrench
- Chain Lube (NOT WD-40)



Provide Bikes or Let Children Bring Their Own?

Providing bicycles for the class

Advantages

- Identify the appropriate bicycle
- Only need about 20 bicycles for a whole school, after-school program or other organization
- Parents don't need to drop off kids' bikes
- Control of bike condition and repair
- Less time needed during lessons for bike check and minor adjustments

Disadvantages

- Time and effort to collect and repair used bikes or purchase new bikes
- Cost of maintaining bikes
- Bikes must be stored when not in use
- Children don't learn on bike they ride the most

Letting children bring their bikes

Advantages

- No bike purchase necessary
- No need for storing bikes during off-season
- Children learn on their own bike
- Children's bikes get checked and repaired

Disadvantages

- Parents may have to bring bikes each day
- No control of initial bike condition, repair or fit
- Time required to properly adjust bikes
- Short-term parking considerations if the location has limited bike storage
- Liability of overnight storage, if needed

Course Props and Other Materials

Simple props can be made from cardboard boxes or corrugated plastic to help create a simulated traffic environment. Some are used to teach the meaning of traffic signs in context; others mimic visual obstructions that may be found in real traffic environments. Bicycle boxes work well for creating visual barriers like the section of bushes. To create freestanding signs, attach the sign to a dowel and push into the top of a traffic cone. Signs can also be attached to a pedestal sign such as those used for music, menus or meetings.

Bean bags, dampened sponges, or rubber bath mats can serve as 'hazards' to teach control, balance, and quick maneuvering skills. For details on the signs used in this curriculum, including dimensions and some tips on creating them, see **Appendix C**.

In addition to the props, having the following materials on hand will help to prepare for and run an effective and efficient skill-building activity:

- Clip boards and Skills Checklist
- Pens, pencils
- First aid kit
- Basic bicycle maintenance tools:
 - Adjustable or fixed crescent wrenches for seat and handlebar adjustments
 - Slotted and Phillips screwdrivers
 - Hex keys (Allen wrenches)
- Tire pump and spare inner tubes
- Extra sizing pads for helmet fitting
- Traffic cones, colored masking tape, sidewalk chalk, halved tennis balls or sponges to mark the course
- Tape measure (50 feet +)
- Elastic bands for pants
- Name tags for volunteers
- Cooler for cold water/drinks (optional)
- Provision for a shaded area such as a tent (optional)
- Sunscreen (optional)
- Station signs (optional)
- Communication devices, such as two-way radios, cell phones, announcement system (optional – for large events)



Laying out and Marking the Course

A diagram with dimensions for laying out the course(s) for each Skill-Building Activity is provided at the end of each lesson. For a small event, the layout can be set up by one or two people in about an hour, assuming the surfaces are clean and free of debris.

Large events should utilize a more formal layout that lets the participants flow through different stations in an order manner. Due to the additional volunteers needed for large events, lay out the course well in advance to offer time to train the volunteers on the stations before the event.

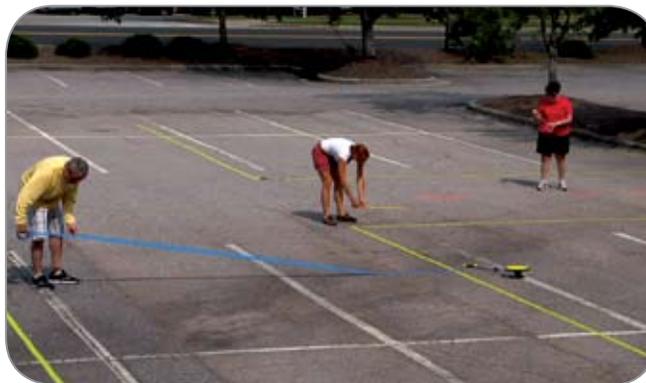
Procedure

1. Select a large site with smooth pavement and no potholes or deep cracks. Measure the area and compare it with the diagram(s) to make sure the course will fit.
2. Sweep the pavement of glass, sand, and other debris if needed before laying out the course. A garage broom works best.
3. Measure out and mark the course, starting with the corners or ends of each line, using small pieces of masking tape. A 50' or longer tape measure is preferred.
4. Beginning at one end, mark from the start of the line down to the next corner. If using wide masking tape, one person can hold the first end of tape down while another unwinds the roll to the next end. After both ends are down, walk over the tape to make it stick.
5. Repeat step 3 for each line.

Marking Materials

There are different materials available to mark the course.

- **Masking tape** is quick, convenient, and leaves no mess afterwards. However, it works best on clean, dry pavement. If it rains the night before the course is laid out, the tape will not stick. Also, in hot weather, tape can dry out, be hard to pull up, and leave a residue if it is left down for more than a day or two.
- **Field lining machine** with lime, marble dust
- **Striping machine** and inverted marking chalk. The machine can often be rented or borrowed from a local hardware store with purchase of the chalk. Depending on the manufacturer, spray chalk can remain visible for up to 30 days.
- **Duct tape** for outdoor use
- **Sidewalk Chalk** is cheap and convenient but it is difficult to mark straight lines. Several volunteers are needed to hold tape measures in places while the line is being drawn.



Altering the Course

Course layouts may need some alterations based on the size of the event and the location of the course. For the lessons geared toward 4th and 5th graders, the ultimate purpose is to simulate riding a bicycle in the road, if an actual safe street location is not feasible. Children at this age are still “literal learners”, so sticking to dimensions that are close to typical street or sidewalk widths is ideal. The more realistic, the better the child can learn and practice the skill to ensure his/her overall safety.

The course is typically laid out outdoors. If a large enough paved space cannot be secured, or if bad weather ensues, then consider using a school’s gymnasium or cafeteria. Community centers may also have large indoor space available. Note that indoor flooring may be slicker than pavement surfaces, so children must travel slower and make more gentle turns.

Some options for altering the course to fit constrained spaces are given in **Appendix C**.

Classroom Management

Children are going to be enthusiastic about riding the bicycles. This section suggests some guidelines that will help keep the activities orderly but still fun for all students. It's important to explain the class rules at the beginning of the program and at the beginning of each lesson. Children need to understand the reasons (such as safety and equipment maintenance) for the rules and the consequences that follow if the rules are broken.

In order to manage your class, here are some helpful tips:

- Have the students form a semi-circle, straddle their bikes, and place their hands palms up on the handlebars. The goal is to keep the children from fidgeting and fiddling with the bike while the instructor is talking.
- Organize the students in pairs by size if they need to share a bike. They can also help each other with fitting their helmets.

Highlighted on the right are some suggested rules for when your class is performing the bicycle skills—you may want to add others.

Ideas to Keep All Students Engaged

It's important to keep all children engaged and included in the activities. You may have limited bicycles (some children will have to wait for their turn) or you may have children who are unable to ride the bicycles for some other reason. Whatever your circumstance may be, here are some tips for students to be included:

- Assign children to help with holding signs, being pedestrians, or helping in some other way.
- Create index cards with pedestrian and bicycle safety questions for children to ask each other.
- Have jump ropes or hula hoops on hand for these children to use
- Create index cards with different physical activities for them to do in a circle. Each student takes a card, does the activity then passes the card to the next person until all children have done the activities. If more time remains, the cards can be passed around again. Here are some activities:
 - Balance on 1 leg for 20 seconds
 - Do 20 jumping jacks
 - Stretch to the sky then touch toes 20 times
 - Hop on one foot 10 times then hop on the other foot 10 times
 - Add other activities that are appropriate for the age group.

Suggested Rules for Bicycle Lessons

- Raise your hand before speaking and speak one at a time.
- Always stop your bike safely without skidding, which can cause a crash and also damage the tires.
- Always use the kickstand or prop your bike securely. Let the instructor know if your kickstand has a problem.
- Treat your bike with care so it will work properly.
- Take care of the helmets.
- No hanging helmets on handlebars.
- Pay attention to the instructor(s) and be courteous.
- Always put equipment back in its proper place.
- When children are not performing a skill, the bicycle should be placed in a designated area.

Working with Children Who Cannot Ride a Bicycle

It is important to know who can or cannot ride a bicycle before beginning the skills lessons. Use the Sample Parent Notification Letter and Consent Form (**Appendix B**) as a tool to collect this information. For children who cannot ride a bicycle and have no disability preventing them from doing so, teach them to ride. Extra one-on-one time with a patient instructor or parent volunteer can help a child develop enough confidence and competence to complete the on-bicycle skill-building activities in this program.

It is ideal to learn balance and steering skills before pedaling and braking. *Let's Go Biking!* assumes that many children in the K-1 age group may not know how to ride. Refer to the K-1 focused skills lesson, "Bike Control" for basic skills to practice with beginner cyclists. Balance bikes (bicycles without pedals) are ideal for teaching scooting, balancing and gliding skills. For older children, a balance bike may be too small. When a balance bike is not available, or the child is too big to use one, use a regular bicycle and lower the seat far enough to allow the child to sit on it with both feet flat on the ground. Temporarily removing the pedals will help encourage children to practice the fundamentals of balance first. Ask children to practice slowly pushing the bike forward with their feet while sitting on the bike. Once they get going, ask them to lift their feet for as long as they can and glide.



Once comfortable balancing, the pedals can be attached and children can try pedaling a few strokes while steering straight ahead. To begin pedaling, start with one foot on the pedal in the highest position and the other foot on the ground. As the child begins the pedal stroke, ask him/her to push off the ground with his/her foot and put it on the pedal. Be ready to help steady their first few attempts.

Teach children to pedal evenly without rocking back and forth and steer in a straight line. Introduce the coaster brakes and how to slow down and stop smoothly and evenly. Allow plenty of time for practice. Give lots of praise and encouragement. Finally, when a child feels confident, raise the seat to the proper riding height.

Some children may need a little extra support. Having some extra cones and a volunteer on hand who can work with a group of children on very basic maneuvering can go a long way to building confidence. Students unable to ride may stay involved during on-bicycle Skill-Building Activities in by holding signs, rotating the traffic signal, or by acting as 'pedestrians' on the course.

Working with Children of Differing Abilities

It is very important to teach children with special needs fundamental walking and bicycling skills – for some, it may ultimately be their primary mode of transportation, a way to maintain independence, or a way to connect with their community. Bicycle riding plays a central role in the social and physical lives of most children in the United States. In addition to providing opportunities for transportation, recreation and physical fitness, bicycle riding contributes to building self-esteem and positive relationships with peers. Riding a bike also assists in the development of coordination, strength, stamina, and overall well-being.

It is important to offer children with disabilities and mental retardation the chance to develop their motor abilities. According to the US Census Bureau (2011), about 5 percent of school-aged children living in metro areas in North Carolina have a disability, while almost 8 percent of those living outside metro areas do. Children are more likely to experience cognitive difficulties than other disability types. *Let's Go NC!* helps to reach out to children at varying cognitive skill levels through the instructive techniques, activities and messages reinforced through different learning paths (visual, auditory, tactile and kinesthetic). The primary difference for children with disabilities is that learning may require additional time and specialized teaching strategies.

It is strongly recommended to create a list of all the students enrolled in the class, including the types of disabilities they have and what their needs are for the class. After creating this list, the instructor should discuss the student's needs with their teacher or review the students Individualized Education Plan, if possible. This will help determine the modifications necessary to adapt the curriculum for students with disabilities.

As a general rule, instructors should use visual, verbal, and tactile cues when giving direction to ensure that students fully understand. For example, when teaching how to search before crossing a street, it can be helpful to post visual cues where the child should be looking. Instructors may gesture and point while verbal instruction directs the child to "Look left at the (visual cue A). Look right at the (visual cue B). Then, look left again."

It is important recognize that some children may have ambulatory difficulty or other impairments which may require unique arrangements to include them in these lessons. Children with disabilities can still participate in the course and learn essential skills to walking and bicycling with proper equipment and instruction. Skill-building activities may need additional time to complete, or require more repetition and practice in order achieve a satisfactory level of competency.

Safe Routes to School – Michigan has an excellent resource for involving students with disabilities in pedestrian safety programming which can be found at saferoutesmichigan.org.

Guidance Specific to Pedestrian Lessons

Children with visual impairments are often trained by Orientation and Mobility specialists to navigate their environment and travel as independently as possible. This guide does not cover street situations and techniques that O&M specialists use to train visually impaired pedestrians to get around. It is not expected that training for these skills is expected of teachers when using this curriculum.

Hands-on learning through outdoor Skill-Building Activities is especially important for students who have a disability because it allows them to practice real-world situations like crossing intersections and using sidewalks.

Strategies for creating an inclusive program:

- Consult special education professionals
- Involve parents of children with disabilities
- Choose an accessible route for Skill-Building Activities
- Practice in the classroom before performing Skill-Building Activities outdoors
- Talk about how to use other senses to determine safety while walking to school
- Supplement lessons with recorded street noises (i.e. sounds from a pedestrian signal)
- Include a classroom assistant or use small groups

Adaptive Equipment

Riding a bicycle can be a great opportunity for children with disabilities. While numerous alternatives to bicycling can offer physical activity and foster intrinsic motivation for participation, the bicycle is uniquely qualified to support physical activity for children with disabilities. The bicycle is relatively inexpensive, comes in a variety of types, has a wide array of adaptive components, offers opportunities for independence, and can be enjoyed on an individual level.

For children with physical disabilities there are a variety of options. Bicycles with rollers, larger sized tricycles, recumbent bicycles, and hand pedaled bicycles are options for a child to be able to independently ride. Assisted options include riding a tandem bicycle or tag-a-long bicycle with a volunteer or instructor to allow for children with certain physical challenges a viable way to participate. In some circumstances one-on-one instruction may be requisite. Additionally, a spotter may be often needed to accompany the participant and offer emotional and physical support.

The following bicycles and related adaptive equipment shown are examples of the types of equipment available. The needs and abilities of each child must be carefully assessed to determine the specific equipment and accessories appropriate for the individual.

Tricycles (Three-Wheeled Bicycle)

Allows for increased stability and modifications. This type of bicycle affords more leg extension and trunk support. Models are available with a range of postures – from recumbent (closer to the ground) to upright. Traditionally they are powered by using the feet. Variations include those powered by using hands in the same motion as a foot-pedaled bike, using a rowing motion, and those where the user may use both hands and feet at the same time.



Tandem Cycles (Bicycles Built for Two People) and Tag-A-Longs

For children who have more difficulty with motor control, decreased cognitive abilities, or visual impairments, a tandem bicycle may be a good option to allow a child to participate in the experience of cycling. There are three-wheeled models that allow for a user to sit parallel (one in front of the other) or perpendicular (side by side). They give the child the opportunity to ride while their partner ensures their safety. Steering and braking options differ. There are several varieties of tag-a-long bicycles which attach to a regular bicycle that offer the ability for a child to pedal.

Adaptive Accessories for Bicycles

- **Foot Straps:** makes it easier for prolonged contact with the pedals
- **Handle Straps:** makes it easier to maintain hand position on handlebars
- **Foot Support:** ranges from traditional supports found on an exercise bike to a modified pedal that conforms to the rider's foot with Velcro straps
- **Trunk Support:** ranges from simple support to bracing structures that can assist with balance
- **Head Padding**
- **Abductor Wedge:** maintains leg alignment
- **Pull/push stick:** used to start and stop momentum to teach a child how to ride a bike



Adaptations for Wheelchairs

- Equipment is available that attaches to the user's wheelchair, allowing the rider to gain access to the cycling experience. Options for individual or tandem riding are available.

Depending on the child's skill level, the following could be used as Indicators of success for children with disabilities:

- Ability to maintain contact with pedals
- Ability to maintain contact with handlebars
- Ability to keep head up and look forward
- Adequate strength to maintain riding speed
- Increased time spent bicycling during each lesson to show an rise in stamina
- Increased ability to control bicycle with each lesson
- Ability to follow basic instructions in a group setting
- Motivated, or able to be motivated to ride a bike
- Increased self-esteem

Adapted Physical Education Resource Manual

This manual details advocacy organizations, equipment companies, support organizations for specific disabilities, and other useful information on bringing bicycling to children who require adapted physical education is maintained by AAPAR. The most up-to-date version can be found on the AAPAR website: www.aahperd.org/aapar/

North Carolina Resources

This list was compiled and verified in September of 2012. It is by no means exhaustive. Please contact a specific organization to learn more about expertise, equipment, programming or events:

AMBUCS

A non-profit NC-based service organization consisting of a diverse group of men and women who are dedicated to creating mobility and independence for people with disabilities. Members provide therapeutic tricycles to children who are unable to operate a traditional bike. The tricycles are highly adaptable for all levels of abilities to include lateral supports, head rests, harnesses, stationary foot, and stationary hand cranks. Chapters exist in the Piedmont, Raleigh-Durham, Charlotte, and Western Carolina areas.

www.ambucom.com

iCan Bike (formerly Loose the Training Wheels)

An adapted bicycling program that strives to teach children with a variety of disabilities to ride a conventional two-wheeled bicycle. This group provides multi-day instructional camps for children to teach them to become life-long independent riders. The program is offered to children ages 8+ through the Autism Foundation of the Carolinas. www.autismcarolinas.org www.lttwcharlotte.org/LTTW

Bridge2Sports

A non-profit organization whose mission is to create opportunities for children and adults who are physically challenged to play sports. They provide equipment, develop sports, create teams, and coach. Has a very popular cycling program with hand cycles and recumbent bicycles available for use. There are programs in the Triangle and Charlotte areas. www.bridge2sports.org

Carolinas Rehabilitation / Levine Children's Hospital

Adaptive Sports and Adventures Program

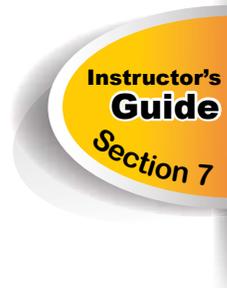
Charlotte-based program facilitates recreational opportunities for individuals with physical disabilities. They have several handcycles available for loan and help with school presentations. Each spring this organization hosts Cycle to the Sea, a three-day 180-mile trek from Charlotte to North Myrtle Beach. Participants make the journey accompanied by able-bodied support cyclists.

East Carolina University

Has two adapted handcycles for checkout and use in the Student Recreation Center. Also hosts an annual Adapted Recreation Wellness Day in November which usually includes Adaptive Cycling. The Greenville event attracts 120-180 people annually. <https://www.ecu.edu/cs-studentaffairs/crw/>

Municipal Contacts in Parks and Recreation

Some municipalities in North Carolina have Adapted Physical Education Programs or Therapeutic Recreation Divisions. It may be possible to work with these contacts for programming or equipment for your children with special needs. Contact your local parks and recreation department to check for availability of equipment, clinics, or events.



North Carolina Standards and Policies Addressed

Let's Go NC! is founded upon the National Highway Traffic Safety Association's "Child Pedestrian Curriculum" and the North Carolina Department of Transportation's "Basics of Bicycling." As such, *Let's Go Walking!* directly addresses national physical education and health standards (current as of April 2010), as created by National Association for Sport and Physical Education (NASPE) and the Joint Committee on National Health Education Standards. For a list of the national education standards met through the pedestrian lessons, please refer to NHTSA's Child Pedestrian Safety Curriculum Teacher's Guide.

Additionally, components of this curriculum are an attempt to satisfy state legislation and policies that require educational content related to bicycling and walking.

North Carolina Standard Course of Study

North Carolina school teachers in particular will appreciate that *Let's Go NC!* further adheres to the North Carolina Standard Course of Study (as of May 2012) recognized by the state Board of Education and the Department of Public Instruction. Primary objectives focus to a large degree on Healthful Living Essential Standards with many opportunities for collaborate discussion, speaking and listening which can broaden lessons to meet many Common Core standards for English Language Arts.

In attempt to offer better integration, Suggestions for Balanced Curriculum at the end of each lesson broaden the lesson's theme into other areas of learning such as Mathematics, English Language Arts, Science, Arts Education and additional components of Healthful Living. While the main focus of the curriculum is to teach core safety concepts for bicycling and walking, we hope that many teachers will find it easier to incorporate lessons into their classrooms using an integrated approach.

At the beginning of each lesson you will find the North Carolina Common Core and Essential Standards addressed by the lesson and those that satisfy the balanced curriculum options given. **Appendix E** gives a full list of the standards that may be covered by instructing *Let's Go NC!* if the content from the core lesson, skill-building activities, and balanced curriculum options is taught to the objectives appropriate to each target grade level.

Enacted Legislation for Bicycle Safety Education

Let's Go Biking! is representative of sequential, age-appropriate instruction for 'Bicycle safety' called for by the North Carolina General Statutes. This instruction is required under Article 8, Part 1 of the Education Program (§ 115C81) as a segment of a comprehensive health education program. This program to include 'Bicycle safety' is to be developed and administered to the pupils of the public schools in North Carolina as a part of the Basic Education Program.

North Carolina Board of Education Policy for School Bus Safety

As a part of *Let's Go Walking!*, the School Bus Safety lesson represents material that provides instruction to include (1) basic skills and knowledge vital to safety in school bus transportation and (2) proper loading techniques, including street crossing at the bus stop. It is a policy of the Board of Education that School Bus Safety instruction is given to students during the first five days of school and at least once during each semester.

The three lessons leading up to School Bus Safety in *Let's Go Walking!*, supplement the content on school bus safety by providing material on how to safely get to and from the school bus stop. These lessons give instruction on Walking Near Traffic, Crossing Streets Safely and Crossing Intersections Safely. These lessons are intended to be used as part of a comprehensive program to educate children on how to walk safely to school to satisfy requested curriculum needs from the Transportation Services Section of the Department of Public Instruction in December of 2011.



Balanced Curriculum Connections

As cited on the Association for Supervision and Curriculum Development website, Curriculum Integration is “a philosophy of teaching in which content is drawn from several subject areas to focus on a particular topic or theme” (McBrien & Brandt, 1997). Rather than teach a concept using only one subject area in isolation, the

instructor develops a theme around a particular concept and provides opportunities for complementary instruction in multiple subject areas.

Balanced Curriculum Benefits!

Let's Go NC! allows instructors to bolster child understanding by incorporating math, reading, social studies, art, music and science subject areas into the theme of pedestrian or bicycle safety.

While many pedestrian and bicycle safety programs focus solely on the physical education and health concepts, *Let's Go NC!* allows instructors to bolster child understanding by incorporating math, reading, social studies, art, music and science subject areas into the theme of pedestrian or bicycle safety. The NC Department of Public Instruction promotes teaching a Balanced Curriculum and provides additional guidance in *The Balanced Curriculum: A Guiding Document for*

Scheduling and Implementation of the North Carolina Standard Course of Study at the Elementary Level developed for the Public Schools of North Carolina in 2003.

Providing a more balanced curriculum has shown to have many benefits. It shows children how to transfer knowledge and apply it in various settings. It also allows instructors to consistently reinforce concepts across contexts. And finally, by allowing instructors to combine subject areas and standards to achieve similar goals, it makes the best use of instructional time.

After each lesson, a variety of complementary activities are included to illustrate how an instructor could take the theme of pedestrian or bicycle safety and incorporate it into other academic subject areas. These activities are not mandatory, but they should help children transfer what they have learned into other, possibly more familiar contexts. They can also help children move from a basic knowledge level into higher-order thinking such as analyzing patterns and evaluating decisions. As stated above, including these activities has been shown to benefit the overall achievement of the children and promote positive changes in behavior. *Let's Go NC!* encourages teachers to use these ideas to create their own balanced curriculum options that fit into their classroom's academic goals.

The following charts outline balanced curriculum extension activities that follow each lesson:

Let's Go Walking!

Balanced Curriculum Activities for Grades K-1

	Math	English Language Arts	Science	Arts Education	Social Studies	Healthful Living
1 Lesson 1: Walking Safely Near Traffic						
Rebus Story on Physical Activity		●				
Visibility of Clothing Types			●			
2 Lesson 2: Crossing Streets Safely						
Identify Safe Routes					●	
<i>I Read Signs</i>	●					
3 Lesson 3: Crossing Intersections Safely						
Make a Community Map					●	
Safety Words and Sentences		●				
4 Lesson 4: School Bus Safety						
School Bus Literature		●				
School Bus Poster Contest				●		
5 Lesson 5: Parking Lot Safety						
Create a Pictograph	●					
"Parking Lot" song				●		
Mobility Quest						●

Let's Go Walking!

Balanced Curriculum Activities for Grades 2-3

	Math	English Language Arts	Science	Arts Education	Social Studies	Healthful Living
1 Lesson 1: Walking Safely Near Traffic						
Neighborhood Map					●	
Stopping Distance			●			
2 Lesson 2: Crossing Streets Safely						
Compare Aspects of Communities					●	
<i>Safety Discussion with Making Way for Ducklings</i>		●				
3 Lesson 3: Crossing Intersections Safely						
Compare Distances	●					
Skit about Pedestrian Safety		●		●		
4 Lesson 4: School Bus Safety						
Comparing Sizes	●					
School Bus Poster Contest				●		
Travel Modes Chart	●					
5 Lesson 5: Parking Lot Safety						
Hazards & Clues		●				
Using Senses for Safety		●				●

Let's Go Walking!

Balanced Curriculum Activities for Grades 4-5

	Math	English Language Arts	Science	Arts Education	Social Studies	Healthful Living
1 Lesson 1: Walking Safely Near Traffic						
Interview Pedestrians		●				
Transportation and Environment	●				●	
2 Lesson 2: Crossing Streets Safely						
Air Quality			●		●	
Create an Activity Plan						●
3 Lesson 3: Crossing Intersections Safely						
Measuring Distance	●					
Public Service Announcement		●				●
4 Lesson 4: School Bus Safety						
Steps Counting, Story						●
School Bus Poster Contest				●		
5 Lesson 5: Parking Lot Safety						
Sidewalk Accessibility					●	
Cardiovascular System Essay		●				●

Let's Go Biking!

Balanced Curriculum Activities for Grades K-1

	Math	English Language Arts	Science	Arts Education	Social Studies	Healthful Living
1 Lesson 1: Gearing Up						
Who Wears a Helmet?						●
Decorate the Helmet				●		
2 Lesson 2: Go By Bike						
Couch Potato Game						●
Story: "My Dad Rides a Bike in His Bedroom"		●				●
3 Lesson 3: Signs, Signals, and Safety						
Traffic Jam Worksheet	●		●			
Brainstorming Traffic Rules					●	
4 Lesson 4: Bicycling Basics						
Make Your Own Traffic Light				●		
Land, Sea or Air?					●	
5 Lesson 5: Bike Control						
Bicycle Geometry	●					
Bicycle Safety Skit		●		●		

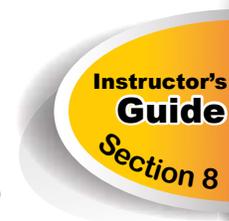
Let's Go Biking!

Balanced Curriculum Activities for Grades 2-3

	Math	English Language Arts	Science	Arts Education	Social Studies	Healthful Living
1 Lesson 1: Go By Bike						
Physical Activity and the Heart						●
Where Would I Bike?					●	
2 Lesson 2: Signs, Signals, and Safety						
How Does My Bike Work?		●				
Night Light and Reflectivity			●			
3 Lesson 3: Bicycling Basics						
Grammar and Punctuation		●				
I Ride Safely				●		
4 Lesson 4: Bike Control						
Bicycle Story Telling		●				
Bicycle Safety Skit				●		
5 Lesson 5: Cooperative Riding						
Create a Bike Story		●				
Categorizing Vocabulary		●				

Let's Go Biking!

Balanced Curriculum Activities for Grades 4-5



	Math	English Language Arts	Science	Arts Education	Social Studies	Healthful Living
1 Lesson 1: Getting Ready to Ride						
Estimate Commuting Costs	●					
Persuasive Letter		●				
2 Lesson 2: Bicycling Basics						
Bicycle Hazards Skit				●		
Bicycle Wheels and Geometry	●					
3 Lesson 3: Bike Control						
Bicycle Tourism		●				
Bicycle From Murphy to Manteo	●					
4 Lesson 4: Cooperative Riding						
Role of Bicycle in Transportation and History					●	
Public Service Announcement		●				●
5 Lesson 5: Basic Traffic Skills						
Visual Limitations			●			
Stopping Distance	●					

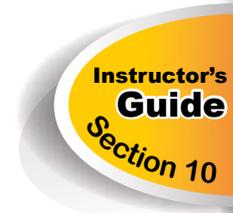
End-of-Unit Culminating Celebration

In addition to extending child learning by enhancing each lesson with appropriate suggestions for balanced curriculum, instructors are encouraged to organize an end-of-unit activity. This celebration reinforces the learning that has taken place over the course of the unit, helps instructors assess child understanding of the overall goals of the program and allows children to demonstrate to peers, other instructors, administration, parents and community-members their newfound knowledge. **Appendix F** contains Certificates of Completion for both *Let's Go Walking!* and *Let's Go Biking!*

Examples of end-of-unit celebrations:

- **Field Trip (all grades):** Children can travel to places in their community where they will demonstrate (and practice) their pedestrian or bicycle safety skills. Instructors should consider inviting parents and other community volunteers.
- **Safety Fair (all grades):** Instructors can invite community workers such as police officers and crossing guards to demonstrate to children their daily work with traffic and pedestrian or bicycle safety. Older children can develop tri-fold posters to show what they have learned. Younger children can, using props and models, demonstrate for attendees what they have learned.
- **Grade-Level Play (grades K-1 or 2-3):** Children can use props and materials used *Let's Go Walking!* Or unit to put together a play about transportation safety or other themes in the lessons that include walking and biking.
- **Public Service Announcements (grades 2-3 or 4-5):** Children can create one to two minute educational broadcasts on pedestrian or bicycle safety. Depending on the age and maturity of the children, they can research proper marketing techniques, develop slogans, and use technology to develop their announcements. If allowed, these announcements can be broadcast to others within the teaching organization, or distributed to a wider market.
- **Walk to School Day (all grades):** Children, instructors, parents and members of the school community can celebrate walking to school while practicing safe pedestrian behaviors. International Walk to School Day is usually scheduled during the first full week in October. Additional information is available on at www.walkbiketoschool.org
- **Bike to School Day (all grades):** This nationally held event began in 2012 and is held annually on the second Wednesday in May. Bike to School Day allows children to celebrate bicycling to school while practicing safe bicycle behaviors. Events may coincide with Bike to Work Day, also in May. Additional information is available on www.walkbiketoschool.org





Additional Resources & Works Cited

The following resources have been used throughout the process of developing this instructor's guide and curriculum:

Ampofo-Boateng, K., Thomson, J. A., Grieve, R., Pitcairn, T., Lee, D. N. & Demetre, J. D. (1993). A developmental and training study of children's ability to find safe routes to cross the road. *British Journal of Developmental Psychology*, 11, 31-45.

Anderson, J. R. (1995). *Learning and Memory: An Integrated Approach*. New York: John Wiley & Sons, Inc.

Blomberg, R. D., Preusser, D. F., Hale, A., & Leaf, W. A. (1983). *Experimental Field Test of Proposed Pedestrian Safety Message, Volume II: Child Messages*. DOT HS 806 522. Washington, DC: National Highway Traffic Safety Administration.

Demetre, J. D., Lee, D. N., Pitcairn, T. K., Grieve, R., Thomson, J. A., & Ampofo-Boateng, K. (1992). Errors in young children's decisions about traffic gaps: Experiments with roadside simulation. *British Journal of Psychology*, 83, 189-202.

Hoffrage, U., Weber, A., Hertwig, R., & Chase, V. M. (2003). How to keep children safe in traffic: Find the daredevils early. *Journal of Experimental Psychology: Applied*, 9, 249-260.

Lee, D. N., Young, D. S., & McLaughlin, C. M. (1984). A roadside simulation of road crossing for children. *Ergonomics*, 27, 1271-1281.

MacGregor, C., Smiley, A., & Dunk, W. (1999). Identifying gaps in child pedestrian safety. *Transportation Research Record*, 1674, 32-40.

Percer, J. (2009). *Child Pedestrian Safety Education: Applying Learning and Developmental Theories to Develop Safe Street-Crossing Behaviors*. DOT HS 811 190. Washington, DC: National Highway Traffic Safety Administration.

Quraishi, A. Y., Mickalide, A. D., & Cody, B. E. (2005). *Follow the Leader: A National Study of Safety Role Modeling Among Parents and Children*. Washington, DC: National SAFE KIDS Campaign.

Rothengatter, J. A. (1981). The influence of instructional variables on the effectiveness of traffic education. *Accident Analysis and Prevention*, 13, 241-253.

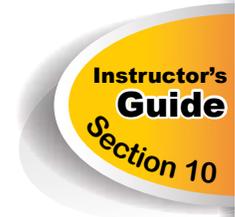
Macarthur, C., Parkin, P., Sidky, M., & Wallace, W. (1998). Evaluation of a bicycle skills training program for young children: a randomized controlled trial. *Injury Prevention*, 4, 116-121.

Thomas, L., Masten, S., & Stutts, J. (2005). *Impact of School-Based, Hands-On Bicycle Safety Education Approaches for School-Aged Children. An evaluation of school based bicycle safety education programs incorporating on bike instruction*. Highway Safety Research Center and Texas Transportation Institute.

Thomson, J. A., Ampofo-Boateng, K., Pitcairn, T., Grieve, R., Lee, D. N., & Demetre, J. D. (1992). Behavioral group training of children to find safe routes to cross the road. *British Journal of Educational Psychology*, 62, 173-183.

Thomson, J. A., & Welan, K. M. (2000). *Community Approach to Road Safety Education*. Road Safety Research Report No. 35. London: Department for Transport.

Thomson, J. A., Tolmie, A. K., Foot, H. C., Whelan, K. M., Sarvary, P., Morrison, S. (2005). Influence of Virtual Reality Training on the Roadside Crossing Judgments of Child Pedestrians. *Journal of Experimental Psychology: Applied*, 11, 175-186.



Tolmie, A., Thomson, J., Foot, H., McLaren, B., & Whelan, K. (1999). Problems of Attention and Visual Search. Road Safety Research Report No. 8. London: Department for Transport.

Tolmie A., Foot H., McLaren B (1996). Child development and the aims of road safety education: a review and analysis. Road safety research report no 1. London: Department of the Environment, Transport and the Regions.

Trost, S. (2009). Active Education: Physical Education, Physical Activity and Academic Performance. Research Brief: Active Living Research.

Tulving, E. (1975). Ecphoric processing in recall and recognition. In J. Brown (Ed.), Recall and Recognition. London: Wiley.

Stutts, J., & Hunter, W (1990). Evaluation of a bicycle safety education curriculum for elementary school age children. Chapel Hill, NC, UNC Highway Safety Research Center.

Young, D. S., & Lee, D. N. (1987). Training children in road crossing skills using a roadside simulation. *Accident Analysis and Prevention*, 19, 327-341.

National Physical Education & Health Standards

National Standards for Sports and Physical Education: <http://www.aahperd.org/naspe/template.cfm?template=publications-nationalstandards.html>

McBrien, J. L., & Brandt, R. S. (1997). *The language of learning: A guide to education terms*. Retrieved August 18, 2008, from <http://www.ascd.org/portal/site/ascd/menuitem.fdd976cd7e54fccddeb3ffdb62108a0c/>.

From Lessons:

“Crossing the Lot” song – Sung to the tune of “The Addams Family” theme, by Vick Mizzy, 1964

“Safety on the Bus” song – Sung to the tune of “The Wheels on the Bus”, popular children’s song, composer unknown

“Five Little Monkeys” – Adapted from K-9 Traffic Safety Education, Level A; State of North Carolina, Department of Public Instruction, 1975)

Appendix A

Sample Timeline To Plan Bicycle Skill-Building Activities

Instructor's
Guide
Appendix A

Sample Timeline

Timeline	Sample Tasks
Three Months Prior	<ul style="list-style-type: none"> • Choose date, time, and place—obtain necessary approval. • Consider rain dates or alternative indoor locations. • Identify the planning committee, if needed. • Solicit volunteers and partners. • Check with local businesses and local service organizations about the possibility of donating handouts, prizes, or supplies. • Check for availability of loaner bicycles of varying size. • Contact local bike shops or bicycle clubs for volunteers to conduct bicycle inspections.
Eight Weeks Prior	<ul style="list-style-type: none"> • Send letters to volunteers with date, time, location of event, and information on their duties at the event.
Six Weeks Prior	<ul style="list-style-type: none"> • Start marketing the event. For a small event, market through the school or after-school program and with backpack mail. For larger events, use local media, including radio stations and newspapers and announcement flyers in schools, libraries, and recreation centers. Be sure to identify your partners or sponsors for the event. • Children should be reminded to bring their own bicycles and helmets if necessary. (Encourage participants to have their bicycles checked out for maintenance issues before the lessons.) Be sure to notify them if bicycles and helmets will be available for use for participants that don't have equipment or in lieu of their own equipment. If liability waivers are needed, consider sending them out with the equipment reminder. • Make a "floor plan" of the proposed site. If the site will not accommodate all stations needed, modify the layout or reduce the number of stations offered. This may reduce the number of volunteers needed, or select skills may be doubled up at appropriate stations. • Establish a secure place for children to park their bicycles at school or at a community event while registering or participating in non-riding activities. • Confirm with the bicycle shop to discuss any special assistance or needs. • Arrange for medical support, which may be as simple as the school nurse or may be as complicated as an emergency medical services truck on site.
Three Weeks Prior	<ul style="list-style-type: none"> • Make copies of material and signs; gather all material needed to conduct the lessons.
One Week Prior	<ul style="list-style-type: none"> • Have a meeting with all volunteers to explain the lesson(s) and how it will be conducted. • Give each volunteer a copy of the rules and directions. • If law enforcement officers or other organizations are volunteering, invite them to the meeting. • Answer questions and distribute site layout. • Check supplies to make sure you have everything. • Note: Be prepared to repeat the briefing on the day of the lesson and to make sure all questions are answered.
Day Before or Hours Before the Lesson	<ul style="list-style-type: none"> • Set up tables/chairs if needed. • Draw or tape the course layout. • Put station signs up if multiple stations will be laid out. • Note: Weather conditions may determine when the lessons can be set up. If, for example, there is any possibility of rain the night before, the use of chalk to draw the station design is not suitable.
Day of Cycling Skills Lesson	<ul style="list-style-type: none"> • Be flexible. • Be prepared. • Have fun!
After the Cycling Skills Lesson	<ul style="list-style-type: none"> • Meet with volunteers to get feedback about the event and gather suggestions for improving the process for the next one. • Provide a summary report to event partners or sponsors • Send thank you notes. People appreciate a written acknowledgement for their efforts.

Appendix B

Sample Parent Notification Letter and Consent Form

Instructor's
Guide
Appendix B

Sample Forms

Date: _____

Dear Parents/Caregivers:

Part of getting children ready to go out into the world is helping them know how to be safe in traffic. Whether walking or riding a bicycle, children need to know how to respond safely and properly on sidewalks and streets.

As part of a five-part program, we will be conducting simple and fun **bicycle skill-building lesson(s)** on _____ (date) where your child can learn, improve, and practice lifelong skills that may save his/her life. These important safety lessons will teach your child about proper helmet fit, the rules of the road, bike control, (customize/insert lesson objectives here).

The lessons will be taught in a safe learning environment so that children can practice skills and problem-solving. Your child will bring home material to review with you after each lesson; your role to reinforce the practice and behavior needed to enhance your child's ability to ride safely.

In order for your child to participate, the following is required:

1. You must review, sign, and return the attached consent form by _____.
2. Children must wear bicycle helmets and close-toed shoes that fasten (no flip-flops allowed).
 - a. If your child has a bicycle helmet, please send it with him/her on _____ (date).
 - b. If your child does not have a bicycle helmet, every effort will be made to provide either a loaner helmet for use during the activity, a discounted helmet for your purchase, or a free helmet if your family qualifies. If a helmet is needed, please discuss this with _____ prior to the event so arrangements for a helmet can be made for use during these lessons.
3. Insert information about bringing the child's bicycle if this applies.

This program is presented by (list of partners) in collaboration with (who you represent). There is no charge for this event.

Sincerely,

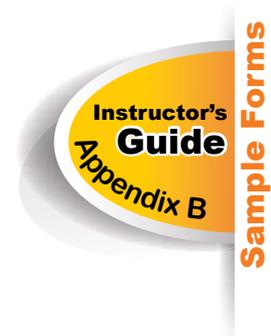
Event Coordinator/Lead Instructor

RELEASE AND WAIVER OF LIABILITY, ASSUMPTION OF RISK,
AND INDEMNITY

AND

Parental/Guardian Release

MINOR CONSENT AND RELEASE



Bicycling Safety Activities

I, minor's parent and/or legal guardian, understand the nature of bicycling activities and the minor's experience and capabilities and believe the minor to be qualified, in good health, and in proper physical condition to participate in such activity. I give permission for my child to participate in the bicycle education program. I hereby release, discharge, covenant not to sue, and agree to indemnify and save and hold harmless (insert organization), instructors and assistants ("Releasees") from all liability, claims, demands, losses, or damages on the minor's account caused or alleged to be caused in whole or in part by the negligence of the Releasees or otherwise, including negligent rescue operations and further agree that if, despite this release, I, the minor, or anyone on the minor's behalf makes a claim against any of the Releasees named above, I will indemnify, save, and hold harmless each of the Releasees from any litigation expenses, attorney fees, loss liability, damage, or cost any may incur as the result of any such claim.

PRINTED NAME OF CHILD: _____

PARENT/GUARDIAN: _____ DAYTIME PHONE: _____

ADDRESS: _____
(Street)

(City) (State) (Zip)

EMERGENCY CONTACT: _____ PHONE: _____

PARENT/GUARDIAN'S SIGNATURE _____ DATE: _____

My child: can ride a bicycle cannot ride a bicycle

If you have time, we need a couple of volunteers to help conduct these lessons at the times / dates below. You do not have to ride a bike to help.

Yes, I'd like to help with the bicycle skill-building activities on the date(s) checked:

- (insert date), time
- (insert date), time
- (insert date), time

Date: _____

Dear Parents/Caregivers:

Part of getting children ready to go out into the world is helping them know how to be safe in traffic. Whether walking or riding a bicycle, children need to know how to respond safely and properly on sidewalks and streets.

As part of a five-part program, we will be conducting simple and fun **pedestrian skill-building lesson(s)** on _____ (dates) where your child can learn, improve, and practice lifelong skills that may save his/her life. These important safety lessons will teach your child about safely walking near traffic and crossing streets as well school bus safety and parking lot safety.

The lessons will be taught in a safe learning environment near the school so that children can practice skills and behaviors. Your child will bring home material to review with you after each lesson; your role to reinforce the practice and behavior needed to enhance your child's ability to be a safe pedestrian.

In order for your child to participate, the following is required you must review, sign, and return the attached consent form by _____.

This program is presented by (list of partners) in collaboration with (who you represent). There is no charge for this event.

Sincerely,

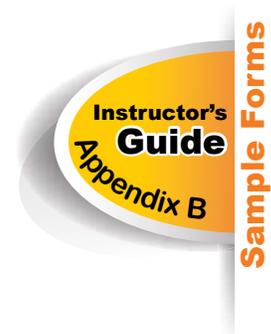
Event Coordinator/Lead Instructor

RELEASE AND WAIVER OF LIABILITY, ASSUMPTION OF RISK,
AND INDEMNITY

AND

Parental/Guardian Release

MINOR CONSENT AND RELEASE



Pedestrian Safety Activities

I, minor's parent and/or legal guardian, understand the nature of pedestrian safety activities and the minor's experience and capabilities and believe the minor to be qualified, in good health, and in proper physical condition to participate in such activity. I give permission for my child to participate in the pedestrian education program. I hereby release, discharge, covenant not to sue, and agree to indemnify and save and hold harmless (insert organization), instructors and assistants ("Releasees") from all liability, claims, demands, losses, or damages on the minor's account caused or alleged to be caused in whole or in part by the negligence of the Releasees or otherwise, including negligent rescue operations and further agree that if, despite this release, I, the minor, or anyone on the minor's behalf makes a claim against any of the Releasees named above, I will indemnify, save, and hold harmless each of the Releasees from any litigation expenses, attorney fees, loss liability, damage, or cost any may incur as the result of any such claim.

PRINTED NAME OF CHILD: _____

PARENT/GUARDIAN: _____ DAYTIME PHONE: _____

ADDRESS: _____
(Street)

(City) (State) (Zip)

EMERGENCY CONTACT: _____ PHONE: _____

PARENT/GUARDIAN'S SIGNATURE _____ DATE: _____

If you have time, we need a couple of volunteers help to conduct these lessons at the times / dates below.

Yes, I'd like to help with the pedestrian skill-building activities on the date(s) checked:

- | | |
|--|--|
| <input type="checkbox"/> (insert date), time | <input type="checkbox"/> (insert date), time |
| <input type="checkbox"/> (insert date), time | <input type="checkbox"/> (insert date), time |
| <input type="checkbox"/> (insert date), time | |

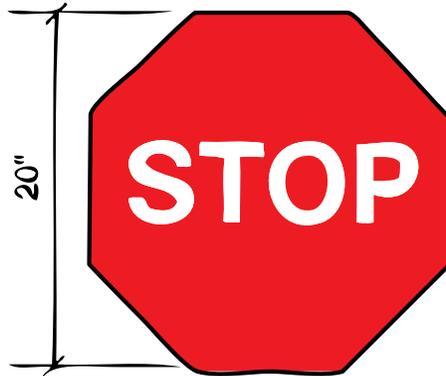
Appendix C

Prop Patterns and Course Layout Modifications

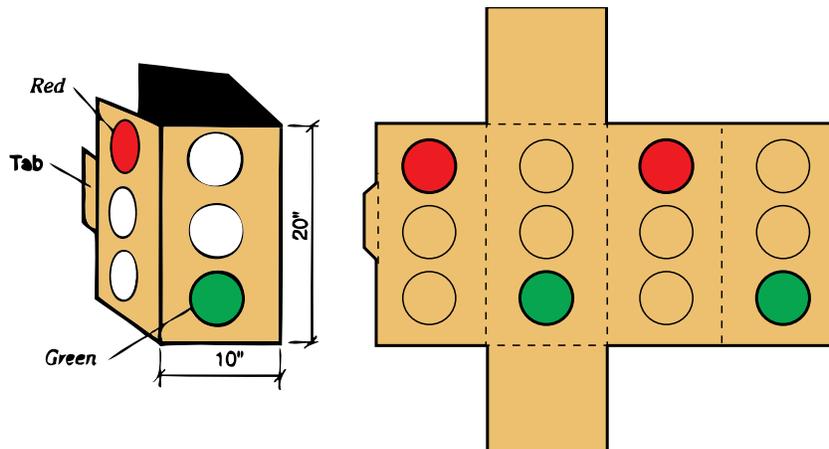
Prop Patterns

Cut color signs to the dimensions shown in the illustrations. Color each appropriately with wide markers or paint. To create freestanding signs, attach the sign to a dowel and push into the top of a traffic cone. The section of bushes can be used to create visual obstructions at the ends of driveways. The bushes will require several boards to create a frame and base.

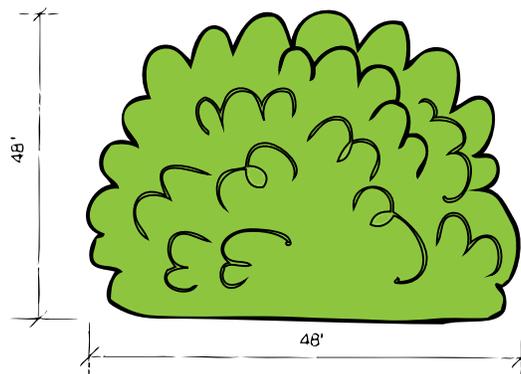
Stop Sign



Traffic Signal



Section of Bushes (Optional)



Course Layout Modifications

It is important to emphasize that the skills required to bicycle can be learned in a variety of settings. Practicing in a real world scenario is the best possible situation for a child to learn the skills outlined in *Let's Go Biking!*, whether that be a quiet residential street or empty parking lot. By focusing on the skills, not the specified layouts, you should be able to work out activities that teach the skills within the constraints at your particular location.

Think creatively. Your city or town may be willing to work with law enforcement to block off a street during a certain portion of the day. There may be a nearby church, police station, fire station, or local business that is willing to let the class use a portion of the parking lot.

It is important to consider the following before modifying the given layouts:

Bike Control Course & Challenge Course

- Children need adequate distance to get started and maintain balance before performing a skill. Ensure that there is an adequate “runway.” Children who can perform the power pedal will require less distance to get started than those who cannot.
- Leave adequate space for kids to turn around after exiting a course. Children who have better bicycle balance and handling skills will require less space to turn than those who cannot.

Driveways Course

- Larger and more complex layouts are given for children in Grades 4-5 who will begin to work on real life situations and skills. These skills in Lesson 4 can be performed on a roadway with a set of opposing driveways that has been blocked off by law enforcement. There may be another area on or near your school grounds which can function well for this activity.
- If you must reduce the length of the existing layout from 80 feet, you will reduce the capacity of the course (the number of children who are able to ride the course at a given time).

Intersections Course

- These skills can be performed at a real intersection (Lesson 5 Intersection Course Activities) which has been blocked off by law enforcement.
- The widths of the streets are approximately 8 feet to mimic a real world scenario. Reducing the street width is a possibility if you are constrained by a few feet on either side of the course.
- Keeping the legs of the intersection long mimics a real world scenario more closely, where one would have time to think about and respond with an appropriate action on the approach to the intersection. This is especially important with the traffic signal activity. If you do not intend to include pedestrians in your intersection, you can reduce the legs of the intersection by several feet.

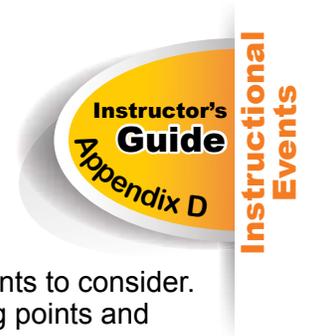
Have Some Cones Available

- There may be instances where a group of children may need more one-on-one instruction to build their confidence or get them to the same proficiency as the rest of the class. Setting up widely spaced cones and having a volunteer assist those children is a great way to incorporate their needs. Have the children weave through the cones while controlling their bicycle. Move the cones closer together to increase the difficulty.
- With larger groups it may be necessary to have more stations so children are not sitting idle. Having some cones on hand to set up a station is the best way to keep children working on skills with minimal set up required.



Appendix D

Holding a Medium or Large Instructional Event



For a Medium or Large instructional event based on the curriculum, there are more elements to consider. In addition to the guidance given in *Organizing the Bicycle Skills Lessons*, the following points and planning matrix will make it easier for you to put together an event of this size:

Target Audience

- Will the skills lessons be part of a community event? If so, is it likely that parents will show up with children of varying ages? Will participants be required to sign up ahead of time, or can they come on a walk-in basis?

Date

- Major community/citywide events work best on a weekend morning.
- Consider scheduling in conjunction with a community event like a safety fair, annual festival, Bike Month (celebrated in May), etc.

Establish a Planning Committee

- For medium to large events, establishing a committee can help distribute the workload necessary to plan and conduct a successful program. Some programs are completely run by bicycle advocate groups or individuals who coordinate the entire effort. Others are offered through groups like Kiwanis clubs, insurance agencies or police departments, who may bring in experts to teach lessons or assist with specific aspects, like helmet fitting or maintenance. If an outside organization will be utilized to conduct the lessons, then a planning committee may not be needed.

Market to the Target Audience

- Larger or citywide events many require advance notice in neighborhood newsletters, bulletin boards, Web sites and e-mail lists. Posters and yard signs can be effective if well-designed and displayed in local gathering places. Grocery stores, libraries, schools, bike shops and places of worship are all good locations to reach large groups. Press releases to local newspapers and radio and television stations are appropriate. The school district may be willing to announce and support a major event with publicity, volunteers and venues for a citywide event.

Let's Go Walking! Event Planning Matrix

Let's Go Biking! Planning Matrix for Medium Events

Event Size	Medium (35-100 at one time or staggered)
Good Resources	<p>Focus primarily on:</p> <ul style="list-style-type: none"> • Location • Date/time • Marketing <p>Example Scenario:</p> <ul style="list-style-type: none"> • This type of program may be held by a local police department, 4-H Club, etc. • A larger site may be required to accommodate the participants. • More volunteers as well as paid staff will be needed. • Plan on spending at least 6 months planning for the event and consider getting partners or sponsors to help defray some costs. • Marketing efforts may include using local media if the event is public. <p>Advantage: These types of events are typically held on the weekends so more parents can get involved.</p> <p>Tip: Consider using indoor and outdoor space to fit in a larger event.</p>
Limited Resources	<p>Focus primarily on:</p> <ul style="list-style-type: none"> • Location • Date/time • Recruiting • Marketing <p>Example Scenario:</p> <ul style="list-style-type: none"> • Recruiting volunteers is a critical, significant aspect to successfully hold a larger event. • A larger site may be required to accommodate the participants. • If the event is public, marketing efforts may include using local media, flyers in schools, libraries and community centers. • If it is a school program, consider engaging parents, high school students looking for service projects, college students, or young adult service organizations to volunteer their time. <p>Advantage: children can practice on their own bicycles. Their helmets most likely will be properly fitted.</p> <p>Tip: School settings can run a relatively large number of children through each bicycle skills lesson by effectively targeting and staggering each grade-group.</p> <p>Tip: Sign up participants or group certain ages together in pre-determined time slots to more effectively use the course layouts and minimize wait time by staggering participants.</p>

Let's Go Walking! Event Planning Matrix

Let's Go Biking! Planning Matrix for Large Events

Event Size	Large (100 – 300+ at one time)
Good Resources	<p>Focus primarily on:</p> <ul style="list-style-type: none"> • Location • Date/time • Marketing <p>Example Scenario:</p> <ul style="list-style-type: none"> • This type of program may be held by a municipality, Safe Kids coalition, advocacy group, etc. • Consider hiring professionals to train and direct volunteers. • Seek corporate sponsors to defray costs in exchange for free advertising. • Allow for at least 9 months of planning. • Venue should provide amenities like restrooms, water fountains, shade, large space for course layouts, and bicycle storage/parking as well as parking for those who drive to the event. <p>Advantage: Community events may also target and teach lessons to teenagers and adults.</p>
Limited Resources	<ul style="list-style-type: none"> • Not recommended.

Appendix E

Standards of Learning



The following NC Standards of Learning are addressed by the core lesson content, skills-based education activities, and balanced curriculum options that are given in *Let's Go NC!*

Essential Standards

Physical Education

Motor Skills

- E.K.MS.1.1: Execute recognizable forms of the basic locomotor skills
- PE.1.MS.1.1: Execute recognizable forms of all eight basic locomotor skills in different pathways, levels, or directions.
- PE.2.MS.1.1: Execute combinations of locomotor skills in different pathways, levels, or directions.
- PE.3.MS.1.2: Apply basic manipulative skills while moving/traveling.
- PE.3.MS.1.3: Execute mature form when combining locomotor skills with changes in direction.
- 4.MS.1: Apply competent motor skills and movement patterns needed to perform a variety of physical activities.
- PE.4.MS.1.2: Create movement skill sequences commonly associated with various sports and activities.
- 5:MS.1: Apply competent motor skills and movement patterns needed to perform a variety of physical activities.
- P.E.5.MS.1.2: Use increasingly complex skills with power and accuracy.

Movement Concepts

- PE.K.MC.2.1: Understand the meaning of words and terms associated with movement.
- PE.K.MC.2.4: Illustrate activities that increase heart rate.
- PE.1.MC.2.4: Illustrate activities that increase heart rate and make muscles strong.
- PE.2.MC.2.1: Use equipment to illustrate multiple movement concepts.
- PE.3.MC.2.1: Illustrate how practice, attention and effort are required to improve skills.

Health Related Fitness

- PE.K.HF.3.1: Recognize one or more of the five health-related fitness assessments and the associated exercises.
- PE.K.HF.3.2: Identify opportunities for increased physical activity.
- PE.1.HF.3.1: Recognize two or more of the five health-related fitness assessments and the associated exercises.
- PE.1.HF.3.2: Select physical activities based on ones interests and physical development.
- PE.2.HF.3.2: Identify enjoyable and challenging physical activities that one can do for increasing periods of time without stopping.
- PE.3.HF.3.2: Identify enjoyable and challenging physical activities that one can do for increasing periods of time without stopping.
- PE.5.HF.3.2: Implement strategies to achieve health-related physical fitness.

Personal and Social Responsibility

- K.PR.4: Use behavioral strategies that are responsible and enhance respect of self and others and value activity
- 1.PR.4: Use behavioral strategies that are responsible and enhance respect of self and others and value activity
- PE.K.PR.4.1: Use basic strategies and concepts for working cooperatively in group settings.
- PE.K.PR.4.3: Use safe practices when engaging in physical education activities.
- PE.1.PR.4.1: Use basic strategies and concepts for working cooperatively in group settings.
- PE.1.PR.4.3: Use safe practices when engaging in physical education activities.
- PE.2.PR.4.3: Use safe practices when engaging in physical education activities with little or no prompting.
- PE.3.PR.4.1: Use self-control to demonstrate personal responsibility and respect for self and others.
- PE.3.PR.4.1: Use self-control to demonstrate personal responsibility and respect for self and others.
- PE.4.PR.4.1: Use self-control through structure, expectations, and engagement to demonstrate personal responsibility and respect for self and others.
- PE.5.PR.4.1: Use self-control to work independently in developing responsibility and respect for self and others.
- PE.4.PR.4.2: Use cooperation and communication skills to achieve common goals.
- PE.5.PR.4.2: Use cooperation and communication skills to achieve common goals.

Healthful Living

Personal and Consumer Health

- K.PCH.2.1: Recognize the meanings of traffic signs and signals.
- K.PCH.2.2: Explain the benefits of wearing seat belts and bicycle helmets.
- K.PCH.2.3: Identify how to get help in an emergency.
- K.PCH.2.4: Identify appropriate responses to warning signs, sounds, and labels.
- 1.PCH.3.1: Identify safety hazards and injury prevention strategies.
- 3.PCH.1.2: Classify behaviors in terms of whether they do or do not contribute to healthy living
- 3.PCH.3: Understand necessary steps to prevent and respond to unintentional injury
- 4.PCH.4.2: Identify personal protection equipment needed for sports or recreational activities
- 5.PCH.4.3: Interpret the relationship between and among the vessels and organs of the circulatory system.

Nutrition and Physical Activity

- K.NPA.1.2: Recall foods and beverages beneficial to teeth and bones.
- K.NPA.1.3: Recall activities for fitness and recreation during out of school hours
- 1.NPA.2.2: Select healthy alternatives to foods and beverages that are high in sugar.
- 1.NPA.3.1: Recognize the benefits of physical activity
- 1.NPA.3.2: Recall fitness and recreation activities that can be used during out of school hours.
- 2.NPA.1.3: Classify activities in terms of their appropriateness for a healthy lifestyle.
- 2.NPA.3.1: Contrast a physical active and inactive lifestyle.
- 3.NPA.1.3: Plan activities for fitness and recreation during out of school hours
- 5.NPA.3.2: Explain the benefits of regular physical activity on physical, mental, emotional, and social health.

Mental and Emotional Health

- K.MEH.1.3: Illustrate personal responsibility for actions and possessions
- 2.MEH.1.2: Summarize behaviors that help to avoid risks.
- 4.MEH.1.2: Implement healthy strategies for handling stress, including asking for assistance.
- 4.MEH.2.2: Explain how effective problem solving aids in making healthy choices.

Interpersonal Communication and Relationships

- 2.ICR.1.5: Exemplify how to communicate with others with kindness and respect.
- 3.ICR.1.2: Plan how to show compassion for all living things and respect for other people's property

Social Studies

Civics and Government

- K.C&G.1.1: Exemplify positive relationships through fair play and friendship.
- K.C&G.1.2: Explain why citizens obey rules in the classroom, school, home, and neighborhood.
- 1.C&G.1.1: Explain why rules are needed in the home, school and community.
- 2.C&G.1.2: Explain how governments establish order, provide security and create laws to manage conflict.
- 3.c&G.1.2: Describe the structure of local government and how it functions to serve citizens.
- 5.C&G.2.1: Understand the values and principles of a democratic republic
- 5.C&G.2.4: Explain why civic participation is important in the United States.

Geography and Environmental Literacy

- K.G.1.2: Use globes and maps to locate land and water features.
- K.G.1.3: Identify physical features (mountains, hills, rivers, lakes, roads, etc.).
- 1.G.1.2: Give examples showing location of places (home, classroom, school and community).
- 1.G.2.3: Explain how the environment impacts where people live (urban, rural, weather, transportation, etc.).
- 2.G.1.1: Interpret maps of the school and community that contain symbols, legends and cardinal directions.
- 2.G.1.2: Interpret the meaning of symbols and the location of physical and human features on a map.
- 2.G.2.1: Give examples of ways in which people depend on the physical environment and natural resources to meet basic needs.
- 2.G.2.2: Explain how people positively and negatively affect the environment.
- 3.G.1.1: Find absolute and relative locations of places within the local community and region.
- 3.G.1.2: Compare the human and physical characteristics of places.
- 3.G.1.3: Exemplify how people adapt to, change and protect the environment to meet their needs.
- 3.G.1.4: Explain how the movement of goods, people and ideas impact the community.
- 3.G.1.5: Summarize the elements (cultural, demographic, economic and geographic) that define regions (community, state, nation and world).
- 4.G.1.2: Explain the impact that human activity has on the availability of natural resources in North Carolina.
- 4.G.1.4: Explain the impact of technology (communication, transportation and inventions) on North Carolina's citizens, past and present.

- 4.G.1.3: Exemplify the interactions of various peoples, places and cultures in terms of adaptation and modification of the environment.
- 5.G.1.2: Explain the positive and negative effects of human activity on the physical environment of the United States, past and present.

Science

Matter: Properties and Change

- K.P.1.2: Give examples of different ways objects and organisms move (i.e. straight, fast, slow)
- K.P.2.1: Classify objects by observable physical properties (including size, color, shape, texture...).

Forces and Motion

- 3.P.1.1: Infer changes in speed or direction resulting from forces acting on an object.
- 3.P.1.2: Compare the relative speeds (faster or slower) of objects that travel the same distance in different amounts of time.
- 4.P.3.2: Recognize that light travels in a straight line until it strikes an object or travels from one medium to another, and that light can be reflected, refracted, and absorbed.

Earth Systems, Structures and Processes

- K.E.1.2: Summarize daily weather conditions noting changes that occur from day to day and throughout the year.

Energy: Conservation and Transfer

- E.En.2.5.5: Explain how human activities affect air quality.

Information and Technology

Technology as a Tool

- 1.TT.1.1: Use a variety of technology tools to gather data and information.
- 2.TT.1.1: Use a variety of technology tools to gather data and information.
- 3.TT.1.1: Use a variety of technology tools to gather data and information.

Arts Education-Theater Arts

Communication

- K.C.2.1: Use dramatic play to improvise stories and situations.
- 1.C.2.1: Use dramatic play to improvise stories and situations.
- 2.C.2.1: Use improvisation to communicate activities in a variety of situations.
- 3.c.2.1: Use improvisation to present a variety of simple stories or situations.
- 4.C.1.1: Use a variety of postures, gaits, and mannerisms to express character in the presentation of stories.
- 4.C.2.1: Use improvisation to tell stories and express ideas.
- 5.C.1.1: Use a variety of postures, gaits, and mannerisms to express a variety of characters in the presentations of stories.
- 5.C.1.3: Construct original scripts using dialogue that communicates ideas and feelings.
- 5.C.2.1: Use improvisation to create characters and solve problems.

Culture

- 2.CU.2.1: Illustrate how to share focus with others in a group setting.

Arts Education-Visual Arts

Visual Literacy

- K.V.2.3: Create original art that does not rely on copying or tracing.
- 1.V.1.2: Create original art that expresses ideas, themes, and events.
- 1.v.3.1: Use a variety of tools safely and appropriately to create art.
- 2.V.1.2: Create original art that expresses ideas about people, neighborhoods, or communities.
- 2.V.2.3: Create art from real and imaginary sources of inspiration.
- 2.V.3.3: Use the processes of drawing, painting, weaving, printing, stitchery, collage, mixed media, sculpture, and ceramics to create art.
- 3.V.1.2: Understand that artists use their art to express personal ideas.
- 3.V.2.1: Create art through a process that includes generating ideas, planning solutions, and producing original art.
- 3.V.2.3 : Create art from realistic sources of inspiration.
- 3.V.3.3: Create art using the processes of drawing, painting, weaving, printing, stitchery, collage, mixed media, sculpture, ceramics, and current technology.
- 4.V.3.3: Create art using the processes of drawing, painting, weaving, printing, stitchery, collage, mixed media, sculpture, ceramics, and current technology.
- 5.V.3.3: Create art using the processes of drawing, painting, weaving, printing, stitchery, collage, mixed media, sculpture, ceramics, and current technology

Context Relevancy

- K.CX.1.2: Recognize that art can depict something from the past or present.
- K.CX.2.2: Identify relationships between art and concepts from other disciplines such as math, science, language arts, social studies, and other arts.
- 1.CX.2.2: Identify relationships between art and concepts from other disciplines such as math, science, language arts, social studies, and other arts.
- 4.CX.2.2: Apply skills and concepts learned in other disciplines, such as math, science, language arts, social studies, and other arts, in the visual arts.

Arts Education-Music

Music Literacy

- K.ML.1.3: Execute simple rhythms using body, instruments, or voice.
- 1.ML.1.3: Execute rhythmic patterns using body, instruments, or voice.

Information and Technology

Technology as a Tool

- K.TT.1.1: Use a variety of technology tools to gather data and information
- 1.TT.1.1: Use a variety of technology tools to gather data and information

Guidance

Early Independent (EI) Socio-Emotional (SE)

- EI.SE.1.1: Explain the impact of personal responsibility on others.
- EI.SE.3.1: Use communication strategies that are appropriate for the situation and setting.

Early Emergent/Emergent (EEE) Socio-Emotional (SE)

- EEE.SE.1.2: Illustrate personal responsibility in a variety of settings and situations.

Progressing (P) Socio-Emotional (SE)

- P.SE.1.1: Identify how to set boundaries that maintain personal rights while paying attention to the rights of others.
- P.SE.1.2: Use self determination to build independence.

Early Emergent/Emergent (EEE) Cognitive (C)

- EEE.C.2.2: Apply critical thinking skills systematically to solve problems and make decisions.
Readiness/Exploratory/Discovery (RED) Socio-Emotional (SE)
- RED.SE.1.1: Understand the importance of self-control and responsibility.

Readiness/Exploratory/Discovery (RED) Cognitive (C)

- RED.C.2.1: Identify situations from your daily life in terms of problems and solution strategies.
Independent (I) Socio-Emotional (SE)
- I.SE.1.2: Integrate personal responsibility into the way you live your life on a daily basis.

Common Core

Mathematics

Geometry

Identify and describe shapes

- CCSS.Math.Content.K.G.A.1: Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.
- CCSS.Math.Content.K.G.A.2: Correctly name shapes regardless of their orientations or overall size.
- CCSS.Math.Content.K.G.B.5: Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.

Reason with shapes and their attributes

- CCSS.Math.Content.1.G.A.2: Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.

Graph points on the coordinate plane to solve real-world and mathematical problems

CCSS.Math.Content.5.G.A.1: Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis [...]

Counting & Cardinality

Know number names and the count sequence

CCSS.Math.Content.K.CC.B.4: Understand the relationship between numbers and quantities; connect counting to cardinality.

CCSS.Math.Content.K.CC.B.5: Count to answer “how many?” questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration.

Measurement & Data

Classify objects and count the number of objects in each category

CCSS.Math.Content.K.MD.B.3: Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.

Measure and estimate lengths in standard units

CCSS.Math.Content.2.MD.A.1: Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.

CCSS.Math.Content.2.MD.A.3: Estimate lengths using units of inches, feet, centimeters, and meters.

CCSS.Math.Content.2.MD.A.4: Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.

Solve problems involving measurement and estimation

CCSS.Math.Content.3.MD.A.1: Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.

Represent and interpret data

CCSS.Math.Content.3.MD.B.3: Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs.

Geometric measurement: understand concepts of angle and measure angles

CCSS.Math.Content.4.MD.C.5: Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement.

CCSS.Math.Content.4.MD.C.6: Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.

CCSS.Math.Content.4.MD.C.7: Recognize angle measure as additive. [...] Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems.

Convert like measurement units within a given measurement system

CCSS.Math.Content.5.MD.A.1: Convert among different-sized standard measurement units within a given measurement system and use these conversions in solving multi-step, real world problems.

Operations & Algebraic Thinking

Understand addition, and understand subtraction

CCSS.Math.Content.K.OA.A.2: Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.

Represent and solve problems involving addition and subtraction

CCSS.Math.Content.1.OA.A.1: Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

Use the four operations with whole numbers to solve problems

CCSS.Math.Content.4.OA.A.2: Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.

Numbers & Operations in Base Ten

Perform operations with multi-digit whole numbers and with decimals to hundredths

CCSS.Math.Content.5.NBT.B.5: Fluently multiply multi-digit whole numbers using the standard algorithm.

English Language Arts

Speaking & Listening

Comprehension and Collaboration

CCSS.ELA-Literacy.SL.K.2: Confirm understanding of a text read aloud or information presented orally or through other media by asking and answering questions about key details and requesting clarification if something is not understood.

CCSS.ELA-Literacy.SL.1.2: Ask and answer questions about key details in a text read aloud or information presented orally or through other media.

CCSS.ELA-Literacy.SL.1.3: Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood.

CCSS.ELA-Literacy.SL.2.1: Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.

CCSS.ELA-Literacy.SL.2.2: Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.

CCSS.ELA-Literacy.SL.2.4: Tell a story or recount an experience with appropriate facts and relevant, descriptive details, speaking audibly in coherent sentences.

CCSS.ELA-Literacy.SL.3.1: Engage effectively in a range of collaborative discussions with diverse partners on grade 3 topics and texts, building on others ideas and expressing their own clearly.

CCSS.ELA-Literacy.SL.3.1: Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.

CCSS.ELA-Literacy.SL.3.4: Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.

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

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

CCSS.ELA-Literacy.SL.5.2 Summarize a written text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.

Presentation of Knowledge and Ideas

CCSS.ELA-Literacy.SL.K.5: Add drawings or other visual displays to descriptions as desired to provide additional detail.

CCSS.ELA-Literacy.SL.1.5: Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.

CCSS.ELA-Literacy.SL.4.4: Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.

CCSS.ELA-Literacy.SL.4.5: Add audio recordings and visual displays to presentations when appropriate to enhance the development of main ideas or themes.

CCSS.ELA-Literacy.SL.5.4: Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.

CCSS.ELA-Literacy.SL.5.5: Include multimedia components and visual displays in presentations when appropriate to enhance the development of main ideas or themes.

Reading: Informational Text

Integration of Knowledge and Ideas

CCSS.ELA-Literacy.RI.K.7: With prompting and support, describe the relationship between illustrations and the text in which they appear (e.g., what person, place, thing, or idea in the text an illustration depicts).

CCSS.ELA-Literacy.RI.1.3: Describe the connection between two individuals, events, ideas, or pieces of information in a text.

CCSS.ELA-Literacy.RI.1.7: Use the illustrations and details in a text to describe its key ideas.

CCSS.ELA-Literacy.RI.4.4 Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.

CCSS.ELA-Literacy.RI.5.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.

Language

Conventions of Standard English

CCSS.ELA-Literacy.L.2.1: Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

CCSS.ELA-Literacy.L.2.2: Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

CCSS.ELA-Literacy.L.3: Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

CCSS.ELA-Literacy.L.3.2: Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

Vocabulary Acquisition and Use

- CCSS.ELA-Literacy.L.K.6: Use words and phrases acquired through conversations, reading and being read to, and responding to texts.
- CCSS.ELA-Literacy.L.1.6: Use words and phrases acquired through conversations, reading and being read to, and responding to texts, including using frequently occurring conjunctions to signal simple relationships (e.g., because).
- CCSS.ELA-Literacy.L.2.4: Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 2 reading and content, choosing flexibly from an array of strategies.
- CCSS.ELA-Literacy.L.2.6: Use words and phrases acquired through conversations, reading and being read to, and responding to texts, including using adjectives and adverbs to describe (e.g., When other kids are happy that makes me happy).
- CCSS.ELA-Literacy.L.3.6: Acquire and use accurately grade-appropriate conversational, general academic, and domain specific words and phrases, including those that signal spatial and temporal relationships (e.g., After dinner that night we went looking for them).
- CCSS.ELA-Literacy.4.6: Acquire and use accurately grade-appropriate general academic and domain specific words and phrases, [...] including those that are basic to a particular topic.
- CCSS.ELA-Literacy.5.6: Acquire and use accurately grade-appropriate and domain-specific words and phrases, including those that signal contrast, addition, and other logical relationships (e.g., however, although, nevertheless, similarly, moreover, in addition).

Reading: Literature

Key Ideas and Details

- CCSS.ELA-Literacy.RL.K.1: With prompting and support, ask and answer questions about key details in a text.
- CCSS.ELA-Literacy.RL.K.3: With prompting and support, identify characters, settings, and major events in a story.
- CCSS.ELA-Literacy.RL.1.1: Ask and answer questions about key details in a text.
- CCSS.ELA-Literacy.RL.1.3: Describe the connection between two individuals, events, ideas, or pieces of information in a text.
- CCSS.ELA-Literacy.RI.4.7: Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.

Integration of Knowledge and Ideas

- CCSS.ELA-Literacy.RL.2.7: Use information gained from the illustrations and words in a print or digital text to demonstrate understanding of its characters, setting, or plot.
- CCSS.ELA-Literacy.RL.3.7: Explain how specific aspects of a text's illustrations contribute to what is conveyed by the words in a story (e.g., create mood, emphasize aspects of a character or setting).

Writing

Text Types and Purposes

- CCSS.ELA-Literacy.W.2.2: Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section.
- CCSS.ELA-Literacy.W.3.2: Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section.
- CCSS.ELA-Literacy.W.4.1: Write opinion pieces on topics or texts, supporting a point of view with reasons and information.
- CCSS.ELA-Literacy.W.4.2: Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

CCSS.ELA-Literacy.W.5.1: Write opinion pieces on topics or texts, supporting a point of view with reasons and information.

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

Production and Distribution of Writing

CCSS.ELA-Literacy.W.4.4: Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience.

CCSS.ELA-Literacy.W.5.4: Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience.

Research to Build and Present Knowledge

CCSS.ELA-Literacy.W.4.7: Conduct short research projects that build knowledge through investigation of different aspects of a topic.

CCSS.ELA-Literacy.W.5.7: Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic.

Appendix F

Certificates of Completion



The following certificates for *Let's Go Walking!* and *Let's Go Biking!* can be printed and given to students following the completion of each unit.

This certifies that _____ has successfully completed
Let's Go Walking! and is on their way to
becoming a safe pedestrian!

On this day _____.

**Using the skills and behaviors I learned in this program,
I promise to keep healthy
by walking and always be safe when I am:**

- Walking near traffic**
- Crossing streets**
- Crossing intersections**
- Walking to and from the school bus stop**
- Riding the school bus**
- Walking in a parking lot**

(Certificate Recipient)

(Instructor)



This certifies that _____ has successfully completed
Let's Go Biking! *and is on their way to*
becoming a safe cyclist!

On this day _____.

**Using the skills and behaviors I learned in this program,
I promise to always be safe when I ride a bicycle and remember to:**

Ask an adult before riding

Wear bright colors

Look and listen for traffic

Stop at the edge of driveways

Use hand signals

Obey all traffic signs and signals

**Bicycling is a great way
to maintain a healthy lifestyle!**

(Certificate Recipient)

(Instructor)

