BICYCLE AND PEDESTRIAN SAFETY EDUCATION

CURRICULUM

Bike-Ped Safety Education (K–12)
After-School Clubs and Camps
Bike Rodeos
Biking and Walking Field Trips

Fall 2023

ACKNOWLEDGMENTS

This publication was developed with funding from the Colorado Department of Transportation Safe Routes to School program through its competitive grants process. It is updated annually. The curriculum is based in part on programming materials of the CDOT Safe Routes to School program as well as Bicycle Colorado's Safe Routes to School program. Much of the content is also based on the League of American Bicyclists' Smart Cycling program.

This curriculum is a core training and educational resource provided by the City of Fort Collins Safe Routes to School (SRTS) program. It was developed and written with assistance from instructors at Bike Fort Collins.

Content is also based on the excellent work of many Poudre School District teachers, parents, wellness team members, and community volunteers who have embraced the idea that walking, biking, skateboarding, and scootering to school can be good for kids and the community at large.

The fall 2023 update of this curriculum includes information provided by teacher Jennifer Trinkaus-Randall and reviewed by SRTS instructor Jane Haack-DeBroux. Jennifer is an autism specialist at Shepardson Elementary who is helping the program more effectively teach to special-needs students. Most of this new content appears in highlighted form and is appropriate for all audiences; this content should definitely be used if any special-needs students are present.

Information about the City's Safe Routes to School program can be found at fcgov.com/saferoutes. This website contains valuable materials that supplement this curriculum, including educational videos.

INTRODUCTION

GENERAL INFORMATION

Whose program is it?: The City of Fort Collins' Safe Routes to School program provides overall coordination as well as funding and equipment to support SRTS programming in Fort Collins. Bike Fort Collins and other contractors, such as Overland Mountain Bike Association and Athletes in Tandem, work with the City to provide instructors and/or specialized equipment for education and encouragement programming. Individual schools also have their own biking and walking initiatives that may or may not tie directly into SRTS but that help the City work toward its goal of getting 50 percent of local K-12 students biking and walking to school.

PSD registration: You must be registered with Poudre School District to work with children at a school. At least one week in advance of teaching, go to the PSD website (psdschools.org/community/volunteers). Follow instructions to register as a volunteer.

Dress: Please wear an official SRTS shirt and/or SRTS safety vest when working any SRTS events. If you are a Bike Fort Collins instructor, you may wear a BFC T-shirt with SRTS safety vest. You are representing the City's SRTS program *and* Bike Fort Collins.

SRTS banner: The SRTS banner must be hung in a prominent location at the school during SRTS programming. It can be brought down at night and put back up when instruction resumes the next day.

ENCOURAGEMENT EFFORTS

Students: At each school, let the students know that you (or school staff) will be outside before school starts and will give them a prize if they get "caught" walking or biking to school *and* wearing a helmet during the time we are teaching there (the first week only). The City's SRTS program and Bike Fort Collins will provide some of the prizes (such as bracelets, zipper pulls, and bike bells).

Staff*:* Let the PE teacher and school administrator know that Bike Fort Collins and SRTS can follow up the PE classes by supporting the school's efforts with encouragement campaigns, such as celebrating Walkin' and Wheelin' Wednesdays, Bike Month, National Bike to School Day (first week of May), International Walk to School Day (first week of October), bike swaps, and/or helping coordinate bike trains and walking school buses. We can also provide all-school assemblies, after-school celebrations, and other programming, based on each school's needs.

BACKGROUND

Vehicular cycling: The foundation of the bicycle curriculum is vehicular cycling, which is the idea that cyclists fare best when they act and are treated as drivers of vehicles. And as drivers, they are subject to the same rights and responsibilities as motorists. Cyclists are required to follow the rules of the road and will be safer if they do so.

Developmental issues: Some of the developmental issues for children that can preclude them from making the same judgments as adults include underdeveloped peripheral vision; inability to judge speed, distance, and timing; evaluating cause and effect; lower perceived sense of danger; identifying the source of sound; being restless, eager, and distracted; belief that adults are always looking out for them. These limitations will vary among children and are not always related to age. For example, some children will have a natural fear of cars and a greater sense of danger than others. In addition, special-needs students may have vastly varying abilities to learn how to navigate roadway infrastructure safely.

Common causes of crashes for children:

1. Biking against traffic
2. Biking out of driveway or off sidewalk (transition zones)
3. Swerving left without looking
4. Not stopping at stop sign or signal
5. Following lead of sibling or friend without ensuring it's safe

KEY MESSAGES

Embedded in the curriculum are the messages that we believe children need to learn in each grade, gleaned from the principles of vehicular cycling, crash data, and our experience walking and biking with children.

Safe Pedestrianism Best Practices:

- Develop smart habits and follow the rules
- Use your eyes and your ears
- Know your edge
- Stop at your edge
- Know where to cross and how
  - Use the pedestrian button at traffic signals
  - Be aware and cautious; ensure motor vehicles are truly stopping before entering the roadway
  - Make your own choices — don't follow your buddy
  - Practice!

Safe Bicycling Best Practices:

- Wear a helmet
- Be defensive (be cautious; consider yourself invisible; communicate)
- Be predictable (follow the rules of the road)
- Be visible (lane positioning; transitioning from sidewalks to streets)
- Be responsible for yourself (make your own decisions)
- Be confident (you have a right to be on the road!)
- Be aware and alert

TEACHING KITS AND TOOLS

The SRTS program has the following kits and supplies available for use in teaching:

Elementary Indoor Kit	Earth ball, story books (for library), tape, toys, stuffed puppy, laminated traffic signs, safety vest, pant strap, bike helmet, red/yellow/green vests for "Red Light/Yellow Light/Green Light" game, curriculum (in three-ring binder), broken helmet
Elementary Rodeo Kit	Domes, halved tennis balls, small cones, chalk, safety vests, first-aid kit, sunblock, caution tape, measuring cord, bike rodeo diagram(s), floor pump, basic tools
MS and HS Indoor Kit	"Legal or Not" diagrams and lane-positioning posters, chain lube and rags, course diagrams
MS and HS Outdoor Kit	Domes, halved tennis balls, small cones, chalk, safety vests, powder chalk, basic tools
Flat-repair Kit	Wheel sets, hand pumps, tubes, patching supplies, tire levers, water tub. Available in two difficulty levels: easy/kid, normal/adult.

Elementary Trailer (Red)	A towed trailer delivered to schools with bikes from preschool-sized up to a few middle-school-sized bikes (pre-K to 5th), rodeo kit, tools, repair stands, coloring books, table, pump, hand inflator, safety vests, broom, street signs, crosswalk.
MS/HS Trailer (Silver)	A towed trailer delivered to schools with bicycles, helmets, teaching kit, safety vests, tools, etc. specifically designed for the MS/HS curriculum.
Bike Field Trip Trailer (Blue)	A towed trailer delivered to schools with bicycles, helmets, some adaptive equipment; uniform set of 24" bikes (fitting most fourth- and fifth-graders); tandem bike, Weehoo, Tagalong; tools; safety vests; pump; hand inflator.
Lincoln Storage Container	At Lincoln MS, the trailer is packed with mostly single-speed skinny-tired bikes, tools, workstand, helmets, supplies. Generally minimal teaching supplies (no cones, no teaching kits, etc).
Lesher Bike Fleet	About 15 "random" bikes, periodically maintained by Safe Routes.
Rocky Mountain HS	A handful of loaner bikes, periodically maintained by Safe Routes.

Event Supplies – Program captains will request items as needed.

Toolboxes
Bike workstands
Bike floor pumps
Literature bins
Traffic signs (Crosswalk, Stop, Yield, RR Crossing)
Large cones
Bike fleet (sizes for all ages, including balance bikes for learners)
Rolling carts
Helmets to lend or give away
Uniforms and hats
Ride bags
Safety vests
BIKE Camp supply kit
Handouts
Helmet decorating kit
Coloring/activity book(s) kit

TOPICS FOR SPECIAL EMPHASIS

These are topics that we would like instructors to pay special attention to, including content for every group of students. If abbreviated presentations are given or cutomized, use this list to inform your content. This will be a living list, added to and updated as we see crashes and safety-related trends in our local community.

Parked Cars and Darting
It's critical to never walk, much less run/ride out, from between cars, from the sidewalk to the roadway, and so on. Continue to emphasize this whenever possible during the course of your visit.

Intersections!
This is where the majority of collisions and conflicts occur between various roadway users and vehicles of all kinds (pedestrians, scooter/skateboard riders, bicyclists, car drivers, etc.) — pay attention!

Do Not Blindly Follow
Nobody should blindly follow traffic signals, instructions/gestures from drivers, or directions/commands from other walkers/bicyclists. Always verify yourself that it is safe to do whatever you are about to do. For example, you press the walk button, lights change, and the "white light" walker appears on the sign. Don't blindly step out into the road — always double-check first. And also pay attention as you continue to cross.

PE: K–5 Curriculum

KINDERGARTEN AND FIRST-GRADE LESSONS: RULES OF THE STREET, CROSSING SAFELY AND PARKING LOT SAFETY

Ideally there will be two class sessions, one primarily indoor (in the gym) and the other outdoor (bike rodeo).

The goal for kindergartners and first-graders is to be safe and careful pedestrians. Basic bike safety and helmets also can be introduced (if there is a second class session scheduled).

***Arrival*:** Prior to first day, a meeting is held with the school's PE teacher to begin planning roles and logistics (see process document). On the first day of programming, get to school early enough to greet/meet the principal and to complete any planning with the PE teacher. Also, give yourself enough time to set up and prepare the gym for the first lesson. One instructor can be outside before the bell to greet students who bike and walk and to present a prize to them.

Adaptive modification: **If the school has a special-education program for students with more significant learning needs (for example, autism, severe disability), try to make prior contact with that teacher if time allows. If the Integrated Services (IS) teacher is receptive, have the Adaptive Pre-planning Forms completed regarding students' needs.**

Supplies:
First week — Indoor teaching kit; class schedule; "Let's Walk" coloring books; "ABC Quick Check" bookmarks.
Adaptive modification: Extra picture cards and picture strips are included in the indoor kit for students with special learning needs to help them understand concepts better, and to allow them to make nonverbal responses by pointing. These extra picture cards can be helpful with any/all students who are visual learners.
Second week — Supplies included in the red trailer: rodeo kit; traffic signs and crosswalk; tools, pumps, bike stand; SRTS bike fleet and helmets; safety vests; "Let's Bike" coloring books; Fort Collins bike maps. Adaptive equipment may be available if requested in advance.

Story books*: For elementary schools; found with the indoor teaching kit.* Ask the school librarian to read the books to students during the weeks SRTS is there. Or check out books to individual classroom teachers.

KEY MESSAGES

Walking:
Know your edge
Stop at your edge — don't dart out into the street
Always be with an adult when crossing the street
Know safe places to cross
Know left from right
Look left/right/left/behind (LRLB)
Know places where you become" invisible"

Biking:
Know helmet safety
Ride straight and steady
Use brakes to stop
Know your edge for stopping

Adaptive modification of key messages: For students with special needs, keep it simple. Teach what the edge is. Practice stopping at the edge. Emphasize where to find safe places to cross. Teach crosswalks. Teach them to always be with a grown-up.

Adaptive modification of lessons: Use visuals — pair with verbal. Keep it simple in verbal messaging. Practice and repetition are key. Use "real" environments and pictures of "real world" infrastructure/locations whenever possible. Allow students to point to images of correct answers; provide opportunities for either/or responses.

OPENING, INTRODUCTIONS:

Total time = 10 minutes (first class time only)

Location: Indoor gym

1. **Warm-up activity** (teacher's routine)
2. **Introduce yourself and tell them the plan:**
   "Hi. My name is Ms./Mr._____ and I am from Bike Fort Collins and Safe Routes to School. BFC is a group of people who love bicycling and work to make cycling safe and enjoyable in Fort Collins. SRTS is a program that encourages kids to bike and walk to school and to do it safely."

   "Today we are going to talk about being safe pedestrians and also play some games."

LESSON 1 (DAY 1): RULES OF THE STREETS, DART-OUTS AND CROSSING STREETS

Objectives: The majority of crashes and fatalities among this age group are due to "dart-outs." Kindergartners and first-graders need to learn about the "edge," moving from safe to unsafe zones, and how to deal with them. These are the beginning steps in learning to safely cross a street.

Materials: Blue tape (or use lines on gym floor) and balls (ask PE teacher). Earth ball for tossing during discussion, stuffed animal.

Total time = 20 minutes

1. **Introduction:**
   a. How kids get hurt in the streets (darting out)
   b. Ask them: What do kids run into the street for? (toys, balls, the family pet)
   c. How kids become "invisible" — between cars, they are short

2. **The Edge:** Know your "edge" to avoid darting into the street. Talk about what an edge is and how you want them to develop the habit of *always* stopping at the edge.
   a. What are all the edges? (*Use pictures:* curb, parked cars, driveways, RR tracks, corner of a building)
   b. What do you do? Stop and think, look LRLB, then slowly enter the street (walk, don't run).
   c. Children of this age should be encouraged to cross the street only with the help of adults/grown-ups.
   d. Clearly distinguish the safe place (sidewalk, front yard, playground) and the not-safe place (the street or driveway, where cars go).
   e. Play "Simon Says" (focus on left and right body parts, looking LRLB, and stopping at the edge).

f. Play "Safe/Not Safe" — use big visual cards so the kids can identify if a sidewalk, playground, street, yard, crossing with an adult, running on their own, etc. is safe or not safe. The kids verbally or nonverbally identify whether the card belongs in the "safe" green bucket or "not safe" red bucket.

Adaptive modification: Split children into two groups. Have one group play "Simon Says" while the other group plays "Safe/Not Safe." Creating two groups allows children with all types of learning styles to get a greater grasp and understanding of the foundations of street safety.

3. **Activity — Ball Toss at the Edge:** Practices stopping at the edge.
   Two instructors demonstrate first a stopping protocol (call it a "habit"): Toss the ball in the pretend street and show how you might run toward it, but then stop at the edge (usually a line on the gym floor), turn on your thinking brain and look both ways, before slowly walking into the street.

   Then divide the children into teams of two to play toss with each other. Find two painted lines on the gym floor (or use blue tape), a good throwing distance apart, with another line on the floor behind you (this would be the edge of the street)**.** If one of them misses the catch, this student must practice the edge protocol at the second line, before entering the imaginary street to retrieve the ball.

   This activity requires close supervision and feedback for students to "get" it. It starts out as chaos, then becomes clear. Volunteers are helpful here.

   Adaptive modification: Have paraprofessionals partner with students needing physical guidance to practice this activity.

4. **Review:** Assemble students. Use some of these questions to guide a discussion:
   a. What are some of the edges outside?
   b. What do you do when you get to the edge?
   c. Is it safe to think that grown-ups in cars always see you?
   d. Should kindergartners/first-graders cross streets without the help of an adult?

   Adaptive modification: Have visuals present and available for those students who are not able to verbalize answers or even articulate without some sort of visual stimuli present. Oftentimes, many learners do better with recall when visuals are present as it helps jog memory. Also, try to use visuals or modeling along with each question — many learners cannot keep up with the pace of verbal instructions, but when paired with a visual, they do much better.

5. **Activity** – Pedal Tag or "Red Light/Yellow Light/Green Light"

LESSON 2 (DAY 1): CROSSING SAFELY and PARKING LOTS

Objectives: (a) Actually walking in a crosswalk reviews what was introduced about the edge and looking LRLB in Lesson 1 and, (b) children learn how they become "invisible" in parking lots and between parked cars in the street.

Location: Outside the school at a crosswalk and in the parking lot. Note: if needing to stay indoors, create a crosswalk on the gym floor using tape (or use a crosswalk mat/rug from SRTS supplies).

Preparation: Put up cones to cordon off the section you will be in. Three adults minimum are needed.

Total time = 20 to 25 minutes

1. **Crosswalks:** Discuss the basics of crossing safely and then head outside to practice.
   a. Check your shoes.
   b. Where are the best places to cross a street (crosswalks and intersections).
   c. Get permission from an adult.
   d. Stop at the edge (reviews the edge lesson); stop at *second* edge (if there is one).
   e. Look LRL and behind you (over your shoulder).
   f. Wait if a car is coming; make sure the car is stopping (eye contact or wave from driver).
   g. Walk, don't run: discuss the dangers of tripping and falling.
   h. Keep looking LRLB while you walk.

   Practice crossing in small groups, holding hands, with one adult in each group.

2. **Parking lot** — How you can become invisible:
   Find a safe spot in the parking lot to gather the students. Pick two students to become invisible. Walk with the children behind a car and ask the other students if they can see them. Discuss how drivers will not see a child who is walking alone in a parking lot or between cars. Look for lights on the cars. Emphasize that becoming invisible is *not* a good thing.

3. **Review** — Assemble students. Use some of these questions to guide a discussion:
   a. Where should kindergartners/first-graders cross the street?
   b. What is a crosswalk? What does it look like?
   c. What do you do when you come to the edge?
   d. Is it safe to think that grown-ups in cars always see you?
   e. Should kindergartners/first-graders cross the street alone or walk alone?

   Adaptive modification: Use visuals! These can be as simple as a picture of a crosswalk, a big "STOP," and then a big "NO!" For learners with special needs, visuals help them understand the question and provide a nonverbal means for a response.

4. **Giveaway**: "Let's Walk" coloring books (ask them to read it with their parents/guardians).

Note: If doing the bike rodeo, remind them to bring their bikes and helmets to the next class session. Also remind them of where to put their bikes for the mechanics to look over. They can borrow a bike and helmet if they do not bring their own. Add a statement to address anxiety about not being able to ride a two-wheeled bike yet (without training wheels). We are experts who can teach them!

LESSON 3 (DAY 2): BIKE SAFETY

Kindergartners and first-graders are not too young to learn the basics of bike and helmet safety. Many children of this age are already riding bicycles and might even be biking on the road with their parents/ guardians. Ask for a quick show of hands of who can ride a two-wheeled bicycle without training wheels.

Objectives: (a) Students demonstrate riding straight and steady and using brakes to stop, (b) students know the importance of wearing a helmet, and (c) students know when they need to have adult supervision.

Location: Outside – (1) Main bike rodeo course for advanced riders; (2) mini bike rodeo course for less advanced riders (optional); (3) learn-to-ride area off to side for balance-bike learners.

Total time = 45 to 55 minutes

Getting Ready to Ride: Helmets, "Me Check," and Safe Cycling Basics

Indoor

- **Helmets**
  a. Why wear them? Ask questions such as: What is a helmet protecting? What does your brain do? Give them some examples: "Helps you think; helps you move…"
  b. How to wear them: "Two-Finger Rule" (simplified — cover forehead; chinstrap)

Note: See "Helmets" section of Appendix 1 for more details and talking points.

- **Me Check** – Helmet, pants, shoelaces, bright clothing — and brain ready!
- **Distribute helmets and fit bikes**

Outdoor

- **Basics of Safe Cycling — Or, how do you show that you are ready to ride?**
  a. Ride straight and steady (not squirrelly)
  b. Use brakes to stop
  c. Always ride with an adult/grown-up

- **Activity: On the bikes**
  a. Still learning to ride — put them on balance bikes and transition to pedals when appropriate
  b. Riders: Practice straight biking and stopping on the mini course; after doing the mini course, advanced riders can ride main course (instructor should demonstrate first). "Snail Race" area can be used for practice starting and stopping before going on main course.

Adaptive modification: If students with special learning needs are on pedal bikes, consider having a smaller, simplified rodeo next to the main one for children who may be overly anxious or overstimulated. This will create a calmer setting for them to achieve the same projected outcome. Think: half the amount of cones, less noise, less wait time — all of which will decrease frustration and increase their chance for success.

- **Review:** After lining up the students for dismissal, ask them, "What is something you learned today?" or "What will you tell your parents/guardians tonight?"

- **Giveaway:** SRTS Graduation Certificate (ask them to show it to their parents/guardians). Alternatively, certificates can be given to teachers at end of week for distribution to students.

SECOND-GRADE LESSONS: SAFE BICYCLING SKILLS

Ideally there will be two class sessions, one primarily indoor (in the gym) and the other outdoor (bike rodeo).

While they should still be accompanied by an adult when walking and biking, second-graders are ready to learn more safe cycling skills in preparation for biking independently in the future. It also is important to review safe pedestrian skills with this age group.

KEY MESSAGES
Check yourself ("Me Check")
Wear a helmet
Ride straight and steady
Use brakes to stop

Difference between K/1 lesson plan and grade 2: Only do a quick review of pedestrian safety, and keep the main focus on bike safety with second-graders.

OPENING, INTRODUCTIONS:

Total time = 10 minutes (note: first class time only)

Location: Gym

1. **Warm-up activity** (teacher's routine)

2. **Introduce yourself and tell them the plan:**
   "*Hi. My name is Ms./Mr._____ and I am from Bike Fort Collins and Safe Routes to School. BFC is a group of people who love bicycling and work to make cycling safe and enjoyable in Fort Collins. SRTS is a program that encourages kids to bike and walk to school and to do it safely."*

   "We are here to teach you about being safe pedestrians and bicyclists. We will share some important tips about being safe and also play some games."

LESSON 1 (DAY 1): WHY BIKE/WALK, PED SAFETY, AND GETTING READY TO RIDE

Total time = 20 to 25 minutes

Objectives: (a) Students will share safe pedestrian practices, (b) know the importance of wearing a helmet, and (c) show awareness of checking self and bike before riding

1. **Discussion: Why is it a good idea to walk or bike (instead of drive)?**
   Ask the students this question and ask them to list the reasons. Reasons include: it's good for the environment, air quality, traffic, saves gas, kids and parents get exercise, time outside, being active helps you be a better student, it's fun, time with family and friends, get to know your neighborhood, and see more of your surroundings and wildlife.

   Using the Earth ball, toss the ball to the students who would like to answer the question.

Adaptive modification: Have students review (expressively or receptively) curb/edge safety with visuals and vocabulary. Here is a safety video to watch about crossing the street: https://www.youtube.com/watch?v=bQVcdaW2TuY. See if the Integrated Services teacher can show this to students prior to class.

2. **Pedestrian Safety:**
   a. Being "visible" versus darting out and being "invisible"
   b. Know your edge — stop
   c. How to cross a street safely (best places to cross; looking LRLB; walk, don't run; etc.)
   d. How to cross at a stoplight:
      i. Push the pedestrian button to activate the signal, and wait for the signal to change.
      ii. It is important to only begin crossing at the beginning of a signal cycle, that is, the beginning of the walk signal when you get the "white light" walker sign. Otherwise, you might run out of time (show image of "white light" walker).
      iii. Wait until you see the cars stop. Don't assume car drivers will see you, especially turning cars.

3. **Bicycling – Getting Ready: Helmets and "Me Check"**
   a. **Helmets** — Why wear them?
   Ask questions such as: What is a helmet protecting? What does your brain do? Can a doctor fix your brain if it gets hurt?

   Talk about the functions of the brain: controls your movement, your senses, emotions, memory, speech, and other bodily functions. Ask why you would not wear a helmet. What are some excuses you've heard? Emphasize that wearing a helmet is important and you should always wear one.

Note: See "Helmets" section of Appendix 1 for more details and talking points.

   b. **Helmets** — How to wear them: **The Two-Finger Rule** (Also see "Helping Your Child Be a Safe Bicyclist" handout.)

   c. **Me Check**: Helmet, pants, shoelaces, bright clothing — and brain ready!

4. **Activity**: Colorado triathlon or "Red Light/Yellow Light/Green Light"

LESSON 2 (DAY 1): BIKE SAFETY

Total time = 10 to 20 minutes

Objective: Students will know the basics of safe cycling.

1. **Basics of Safe Cycling:**
   a. Ride straight and steady; use brakes for stopping.
   b. Ride right: ride on the right, with flow of traffic, in the same direction as the cars.

c. Sidewalks:
   Yield to pedestrians; call your pass. (Yield = let the other person go first.)
   Stop at the end of sidewalks; slowly enter the street.
   Watch driveways (cars backing out and turning in).
d. Driveway ride-outs — common crash for kids; put foot down at end of driveway (the edge).
e. Trail etiquette: ride on the right, yield to pedestrians, call your pass.

Adaptive modification: Create a visual model to demonstrate this so the instructions are not all verbal (pictures, video, modeling).

2. **Activity** (if time): Pedal tag or "Red Light/Yellow Light/Green Light"

3. **Reflection**: After lining up the students for dismissal, ask them, "What is something you learned today?" or "What will you tell your parents/guardians?"

   Adaptive modification: BEFORE lining the students up for dismissal, hand out a very simple form that reads: "What I Learned About Walking and Biking Safety Today." The form should have five different options accompanied by pictures (three of which they learned about). If there is insufficient time, provide this form to the teacher to have the children complete in class.

4. **Giveaway:** "Let's Bike" coloring book.

Note: Remind the children to bring their bikes and helmets for the next session (bike rodeo). Also let them know where to put bikes for mechanics to check. They can borrow a bike and helmet if they do not bring their own. Let them know that it is okay if they do not know how to ride a bike yet and that we can teach them.

LESSON 3 (DAY 2): BIKE RODEO

Total time = 45 to 55 minutes

Objective: Students will demonstrate riding straight and steady and using brakes to stop.

Indoor

1. **Getting Ready:**
   Review: Helmet fit and "Me Check"

2. **ABC Quick Check** — go through it with the students, focusing primarily on air and brakes.

3. **Distribute helmets and fit bikes (size, seat height adjustment)** — double-check that students can ride a bike without training wheels.

Outdoor

4. **Demonstrate the course:**
   See Appendix 2 for sample course set-up.

   Students walk the course, following one instructor, and the other instructor explains the objectives. Emphasis is put on riding straight and steady and using brakes to stop. Begin at the straightaway by observing each rider to ensure they can start and stop on their own.

   Class can be divided into two groups, with one group doing the "snail race" while the other group rides the skills course. Students who borrow bikes should start on the "snail race" to become familiar with the bikes.

   Adaptive modification: If students with special learning needs are on pedal bikes, consider having a smaller, simplified rodeo next to the main one for children who may be overly anxious or overstimulated. This will create a calmer setting for them to achieve the same projected outcome. Think: half the amount of cones, less noise, less wait time — all of which will decrease frustration and increase their chance for success.

   Adaptive modification: If students with special needs are on balance bikes/Striders, they will work on balance, raising up feet, strength, steering. Paraprofessionals can help with one-on-one assistance.

5. **Reflections:** After lining up the students for dismissal, ask them, "What is something you learned today?" or "What will you tell your parents/guardians tonight?"

- **Giveaway**: SRTS Graduation Certificate (ask them to show it to their parents/guardians). Alternatively, certificates can be given to teachers at end of week for distribution to students.

THIRD-, FOURTH-, AND FIFTH- GRADE LESSONS: SAFE BICYCLING SKILLS

Ideally there will be two class sessions, one primarily indoor (in the gym) and the other outdoor (bike rodeo).

Many students will be riding on their own without adults. With this increasing independence and in preparation for the greater independence of middle school, this age group needs lots of reinforcement about the importance of wearing helmets, and to use safe bike-handling skills and follow the rules of the road.

KEY MESSAGES

Check yourself ("Me Check")
Wear a helmet (how and why)
Ride straight and steady
Use brakes to stop
Know rules of the road
Use hand signals
Demonstrate Power Start

Adaptive modification: Decide whether fewer "key messages" can be the focus for students with special learning needs. Use accompanying visuals for each key message (for example, a picture of a helmet or an actual helmet, a picture of riding straight on the right side of the road or a demonstration, demonstration of hand signals, demonstration of using brakes, etc.).

Note: Difference from second-grade lesson plan to grades 3/4/5: add rules of the road, more in-depth discussion about brain function and brain injury, and practicing hand signals on rodeo course. Perform thorough demonstration of the Two Finger Rule for proper helmet fit.

OPENING, INTRODUCTIONS:

Total time = 10 minutes (first class time only)

Location: Gym

1. **Warm-up activity** (teacher's routine)

2. **Introduce yourself and tell them the plan:**
   "*Hi. My name is Ms./Mr._____ and I am from Bike Fort Collins and Safe Routes to School. BFC is a group of people who love bicycling and work to make cycling safe and enjoyable in Fort Collins. SRTS is a program that encourages kids to bike and walk to school and to do it safely.*"

   "We are here to teach you about being a safe and smart pedestrian and bicyclist. We will share some important tips and also play some games."

LESSON 1 (DAY 1): WHY BIKE/WALK, PED SAFETY, AND GETTING READY TO RIDE

Total time = 20 to 25 minutes

Objectives: Students will know the key messages about (a) pedestrian safety, (b) wearing a helmet, and (c) being ready to ride.

1. **Discussion: Why is it a good idea to walk or bike (instead of drive)?**
   Ask the students this question and ask them to list the reasons. Reasons include: it's good for the environment, air quality, traffic, saves gas, kids and parents get exercise, time outside, being active helps you be a better student, it's fun, time with family and friends, get to know your neighborhood, and see more of your surroundings and wildlife.

   Using the Earth ball, toss the ball to the students who would like to answer the question. Optionally, you can spread the printed cards around the gym floor. Tell the students that they can pick up two cards of the same color and meet as a color group and read their cards. Then, taking turns reading their cards, they decide if it is a good reason to bike or walk to school and discuss within their group. The PE teacher and SRTS instructor walk around to check responses.

   Adaptive modification: For students with special learning needs, use visuals. Instructor can present a question with an array of three to five pictures indicating possible answers (clear air quality, less traffic, more exercise, etc.). Students, with support if necessary, can say and/or point to the reasons why it's a good idea and a good choice to walk or ride a bike instead of drive.

2. **Pedestrian Safety:**
   a. How to cross a street safely (best places to cross; looking LRLB, walk don't run, etc.)

   b. How to cross at a stoplight:
      i. Push the pedestrian button to activate the signal.
      ii. It is important to only begin crossing at the beginning of a signal cycle, that is, the beginning of the walk signal when you get the "white light" walker sign. Otherwise, you might run out of time (show the "white light" walker sign).
      iii. When the signal gives you the crossing light, wait until cars stop for you. Don't assume drivers of cars always see you, especially turning cars.

   Adaptive modification: Show a picture of the pedestrian button and the "white light" walker sign, along with a short video (*this video was in production at the time of this curriculum update — check with the SRTS program to see if it's available*). Video will emphasize visual and auditory components of how to cross. See if the Integrated Services teacher can show this to students prior to class.

3. **Bicycling — Getting Ready to Ride: Helmets and "Me Check"**

   a. **Helmets**: Why wear them?
      Talk about brain injury and the functions of the brain: controls your movement, your senses, emotions, memory, speech, and other bodily functions. What are the reasons kids sometimes do

not wear helmets? Ask why you would not wear a helmet. What are some excuses you've heard? Emphasize that wearing a helmet is important and you should always wear one.

Note: See "Helmets" section of Appendix 1 for more details and talking points.

b. **Helmets** — How to wear them: **The Two-Finger Rule**

c. **Me Check**: Helmet, pants, and shoelaces — and brain ready! Bright clothing and bike lights.

4. **Activity**: Pedal tag, Colorado triathlon, or "Red Light/Yellow Light/Green Light."

LESSON 2 (DAY 1): RULES OF THE ROAD

Total time = 10 to 20 minutes

Objectives: Students will know (a) the rules of the road for streets and sidewalks and (b) trail etiquette.

1. **Rules of the Road:**
   a. Cyclists must obey the same rules as cars: You are the driver of a vehicle!
   b. Obey traffic signs and signals (show them the signs).
   c. Stop at all stoplights and stop signs (call "stopping," put foot down, look LRLB).
   d. Ride straight and steady; no weaving in and out of cars.
   e. Ride right: Ride on the right, with the flow of traffic, in the same direction as cars.
   f. If no sidewalk, walk facing traffic.
   g. Sidewalks:
      i. It is legal to ride on the sidewalk in Fort Collins except where you see dismount zones.
      ii. Yield to pedestrians; call your pass. (Yield = lets the other person go first.)
      iii. Stop at the end of sidewalks; slowly enter the street.
      iv. Watch driveways (cars backing out and turning in).
   h. Driveway ride-outs — common crash for kids; put foot down at end of driveway.
   i. Bike lanes (door zone).
   j. Trail etiquette: Ride on the right, yield to pedestrians, call your pass.
   k. Hand signals.
   l. Communicate with cars (make eye contact; watch for wave from driver).

Adaptive modification: When presenting, don't simply present orally — also use a visual for each rule. Have a big picture of bike lanes, stoplights/stop signs, riding straight, curbs/stopping at the end of sidewalks, etc. Do it *with* your presentation, not separate.

2. **Activity** (if time): Pedal tag or "Red Light/Yellow Light/Green Light."

3. **Reflection**: After lining up the students for dismissal, ask them, "What is something you learned today?" or "What will you tell your parents/guardians tonight?"

Adaptive modification: *Before* lining the students up for dismissal, hand out a very simple form that reads: "What I Learned About Walking and Biking Safety Today." The form will have five different options

accompanied by pictures (three of which they learned about). If there is insufficient time, give forms to teacher/paraprofessional to assist students to complete in their classroom.

4. **Giveaway:** Coloring book (third-graders); "ABC Quick Check" bookmark (fourth- and fifth-graders).

Note: Remind them to bring their bikes and helmets for the next session (bike rodeo) and where to put their bikes for mechanics to check them. They can borrow a bike and helmet if they do not bring their own. Let them know that it is okay if they do not know how to ride a bike yet and that we can teach them.

LESSON 3 (DAY 2): BIKE RODEO

Total time = 45 to 55 minutes

Objectives: (a) Students demonstrate riding straight and steady and using brakes to stop; (b) students are able to properly adjust helmets using the "Two-Finger Rule"; (c) students are able to use Power Start; (d) students demonstrate an understanding of the rules of the road; and (e) students show proper use of hand signals.

Indoor

1. **Getting Ready:**
   Review: Helmet fit and "Me Check."

2. **ABC Quick Check** — go through it with them.

3. **Distribute helmets and fit bikes**

Outdoor

4. **Demonstrate the course:**
   See Appendix 2 for sample course set-up. Students walk the course, following one instructor, and the other instructor explains the objectives. Emphasis is put on riding straight and steady and using brakes to stop. Begin at the straightaway by observing each rider to ensure they can start/stop on their own.

   Class can be divided into two groups, with one group doing the "snail race" while the other group rides the skills course. Students who borrow bikes should start on the "snail race" to become familiar with the bikes.

   Adaptive modification: If students with special learning needs are on pedal bikes, consider having a smaller, simplified rodeo next to the main one for children who may be overly anxious or overstimulated. This will create a calmer setting for them to achieve the same projected outcome. Think: half the amount of cones, less noise, less wait time — all of which will decrease frustration and increase their chance for success.

   Adaptive modification: If students with special needs are on balance bikes/Striders, they will work on balance, raising up feet, strength, steering, brakes. Paraprofessionals can help with one-on-one assistance.

5. **Reflections:** After lining up the students for dismissal, ask them, “What is something you learned today?” or “What will you tell your parents/guardians tonight?”

6. **Giveaway**: SRTS Graduation Certificate (ask them to show it to their parents/guardians); FC bike map. Alternatively, since you will be outside, certificates can be given to teachers at end of week for distribution in classrooms.

PE: MIDDLE-SCHOOL CURRICULUM

SIXTH-, SEVENTH- and EIGHTH-GRADE LESSONS (PE CLASS): SAFE-CYCLING SKILLS

Ideally there are three sessions for each class in middle school. Generally the PE teachers can handle the first session on their own (with minimal or no assistance from SRTS instructors).

This curriculum is designed for middle-schoolers' increased independence and ability to more fully grasp traffic law. They are old enough and strong enough to use the bicycle as a way to get around town (a means of transportation) and also for exploration. They also are becoming more interested in maps and bike mechanics.

SESSION 1 (DAY 1): ME CHECK, ABC QUICK CHECK, BIKE HANDLING

Class time: 90 minutes (40 min. indoor lesson; 50 min. outdoors on skills course)

Note that before or during this session, trained bike mechanics perform safety checks on students' bikes.

INDOORS:

1. **Introduction** — Mention the City's Safe Routes to School program and Bike Fort Collins (contractor for the educational program in schools). The program consists of three sessions: safety and skills, rules of the road and a long ride. We (SRTS, BFC, PE teachers) believe that anyone can enjoy riding a bike. And if you (students) can convince your parents/guardians that you can do it safely, maybe your parents/guardians will let you bike alone places, which will give you more independence! Up until now, you may have used your bike primarily as a toy. Starting now, we will help you make the transition to using your bike as a vehicle on the roads and trails.

   Time allotted: 5 minutes.

2. **Me Check** — Discuss the need to check yourself to prevent avoidable crashes and injuries — shoelaces tied (closed-toe shoes required), pant legs tucked in or rolled up to keep out of chain, bright-colored clothing, positive attitude, eyes open, ears listening, brain turned on and protect it with a helmet. Think about what you're doing; pay attention to where you are in the group/on the road.
   a. What does your brain do?
   b. How thick is your skull?
   c. Think about what your life would be like if your brain didn't function properly.
   d. Give examples of excuses for not wearing a helmet.
   e. End with a commitment to always choose to wear a helmet — make it cool in middle school!

   Time: 10 min.

3. **Helmet Fitting** — Demonstrate proper helmet fit using the Two-Finger Rule. Students will then fit themselves with helmets. Optionally, show students posters of cool people who wear helmets (available with equipment request).

   Time: 15 min.

START INDOORS AND THEN MOVE OUTDOORS:

1. **ABC Quick Check** (extended version) — Discuss mechanical check for bikes.
   a. **"A" is for Air (tires):** Tires must always be properly inflated. Check the sidewalls for recommended PSI (pounds per square inch). Tires that are not properly inflated will be harder to ride and unsafe (the bike will be harder to control). Underinflated tires also could damage the rim or pinch the tube (pinch-flat).
   b. **"B" is for Brakes:** Make sure both front and rear brakes are functioning properly. No more than a finger-width gap between engaged brake lever and handlebar. The right brake lever engages the rear brake. Demonstrate. The left brake lever engages the front brake. Demonstrate. Discuss problems when using only front brake. This is a serious issue as most kids will tell you they've done it and flipped over the handlebars. Use this opportunity to discuss what happens if anything stops the front wheel suddenly (backpack hung on the handlebars, hitting a front wheel against something, etc.). Finally, make sure both wheels spin freely and are not rubbing against the brake pads and that brake pads align level on rims (for maximum braking surface).
   c. **"C" is for Chain, Crankset, Cassette:** Make sure that the chain drive is clean and that the chain is lubricated. If the chain is orange with rust or in otherwise poor working condition, then the bicycle may not operate properly. Make sure the crankset is not loose and that the cassette (gears on back wheel) are clean. Optionally, discuss gearing and cross-chaining.
   d. **"Quick" is for Quick Release:** Check to see if your bike has any quick releases. They're usually found on the seatpost and wheels. Brakes also may have a quick-release mechanism. Ensure they are engaged properly.
   e. **"Check" is for Check the Bike All Over Before Riding:** Check that the handlebar stem is tight and that there is no rubbing, rattling, clicking, knocking or other sounds anywhere on the bike that might indicate a problem.
   f. **"Check" is Also for Check Bike Fit and Seat Height:** Students should be able to comfortably straddle the bike without touching the top tube and with both feet on the ground. As a general rule, the seat should be approximately at mid-hip height when standing next to the bike.

   Reminder: Do not hang bags, backpacks, locks or anything that could affect steering on the handlebars.

   Time: 10 min.

2. **Demonstrate hand signals** before going outside — demonstrate and have the students do proper hand signals.

3. **Skills Course – Bike-handling Practice** *(45 to 60 min.)*:

   COURSE I — Power Start and Snail Race (balance and control); add Quick Stop and Rock Dodge (avoiding road hazards). Set up the course on a flat surface. Create at least five lanes 4 feet wide and 50 feet long, if possible. See diagram of "Bike Skills Course" in Appendix 3.

   COURSE II — Straight-line riding (learning to ride straight and steady), controlled stopping, weaving, scanning and signaling. Add gear shifting and "outside pedal down" when turning. Set up course to

utilize left turns with straight lane first, then weave on the return and stop at the end. You may set up course to allow students to "take the lane" before turning left.

Additional key points: Assess students' bike-handling skills to prepare for rides on the road. This is where we find out who can go on the road and who can't. If there are students who are not comfortable riding on the skills course, then we probably won't want to take them on the road and we'll have to arrange for them to remain on campus to practice riding.

Supplies: Middle-school Rodeo Kit (cones, chalk, domes, tennis balls); 30 loaner helmets; toolbox, workstand, and three floor pumps; table; 12 to 15 bikes; and long cable with lock.

Giveaway: "ABC Quick Check" bookmark

SESSION 2 (DAY 2): TRAFFIC LAWS/RULES OF THE ROAD, GROUP-RIDING RULES, RULES-OF-THE-ROAD RIDE

Class time: 90 minutes (20 min. in class; 70 min. ride)

Note: Ask if anyone wasn't at the first class (and fill them in on what they missed). Ask if anyone brought a bike that didn't already get checked by a mechanic. Explain green ribbon on bikes (which means they have been checked and okayed by a mechanic); request that they leave the ribbons on their bikes for the duration of the program. One instructor should train volunteers and hand out safety vests.

Traffic Laws and Rules of the Road

Note: Use "Lane Placement" posters to demonstrate what to expect on the road.

Review rules of the road (ask them what they know first):

1. Cyclists must obey the same rules as cars; obey all signs and signals.
2. Ride on the right, with the flow of traffic.
3. All cyclists are required by law to use hand signals when safe to do so, including stopping.
4. Where to ride: bike lane, multi-use trails, sidewalks, "taking the lane" (so no cars can squeeze in beside you).
5. Right-of-way: "First come, first served," including at three- and four-way stops.
6. Be visible, predictable and defensive. Ride straight and steady. Do not weave between parked cars. Be defensive and alert — keep eyes and ears open. Never enter an intersection before checking to make sure every vehicle has stopped, even if you have the right-of-way. Communicate with drivers — make eye contact if possible, and wave them on if necessary.
7. When walking on the road where there is no sidewalk, always walk against the flow of traffic or on the left side facing traffic.
8. In Fort Collins, it is generally legal to ride on the sidewalk. Should you? Probably not, but sometimes it's the only safe option. Be sure to yield to pedestrians and ride at a slow, controlled speed. Where is it not legal? In dismount zones in Old Town, CSU campus, Front Range Community College and anywhere else posted.
9. It is required by law that at least one hand remain on the handlebars at all times.

Group-riding Rules — Ride single file; straight and steady; bike length between each rider; stay between chaperones; no passing; communicate (call out stopping, turning, and road hazards); both hands on handlebars at all times (unless signaling); make your own decisions. Students will pair up at intersections and decide together when it's safe to enter. *DO NOT FOLLOW THE PAIR AHEAD OF YOU UNTIL IT IS SAFE.*

- Have students gather to put on helmets while still in the gym, and get in riding groups. (Also check the adults' helmets.) Groups are divided by eagerness and ability to ride, by discipline issues, or by other concerns as determined by the PE teacher. Once in groups, students do the Me Check on themselves. Once the groups gather outside with bikes, have them do the ABC Quick Check on their bikes with support from leaders, teachers and volunteers.
- Fit them on the properly sized bike with seat height adjusted (mid-hip).
- Make sure they understand gear changing — when, how and why to change gears.
- Have an instructor review the expectations for volunteers with them (distribute optional handout).
- Be sure to have phone numbers for all leaders and the school's main office, and ensure that students needing medication are with the teacher's group.

Rules-of-the-Road Ride — Reiterate SAFETY and "One Strike Rule" (if okayed by teachers — would need plan for escorting unruly student back to school if necessary). Groups of no more than 10 with, ideally, three adults (two SRTS instructors and one volunteer). Groups must have, at minimum, two adults (an SRTS lead instructor or teacher as leader and another adult as caboose. Keep rides within a reasonable pace, no more than about 12 mph (15 mph is bordering on too fast in most cases); teach them to control speed by feathering brakes on downhills.

Review:

a. Helmets — make sure they are still fitted properly
b. Me Check — pants, shoes (no open-toed sandals), laces, brain turned on, bright clothing
c. ABC Quick Check — students do their own, instructors check
d. Predictability — steady riding, proper stopping and yielding, correct placement in lane
e. Straight line — not squirrelly
f. Audible and manual signals — loud audible communication
g. Scanning — being aware of your surroundings
h. Hazard avoidance — point to and call out hazards in the road
i. Lane changing and safe turning — left turns: scan, signal, scan again, take the lane
j. Door-zone awareness — stay at least 5 feet away from doors of parked cars

Note: *Do not hang bags, backpacks, locks or anything else from the handlebars! Also, keep long jackets from getting into rear wheel, and keep cellphones securely inside a pocket.*

On-road Demonstration — Find a neighborhood where leaders will be able to demonstrate the following, at a minimum: stop signs (two-, three-, or four-way), taking the lane to make a left turn, a four-way intersection to demonstrate "Copenhagen Left" turn, traffic light, quiet neighborhood street. If possible, also include: roundabout, different bike-lane markings, difficult crossings near school.

- **Stop Signs:** Obey "first-come, first-served" rules and right-of-way at stop signs. Signal, stop, signal again if necessary, and check that all vehicles have actually stopped. Make eye contact and communicate with drivers if possible. Only enter the intersection when all is clear. Be sure to discuss where to stop at intersections. Demonstrate where to stop at a stop sign (in line with it) and that it may be necessary to inch forward to be able to see clearly in both directions to know when it's safe to enter the intersection.
- **Left Turns:** Discuss lane control ("taking the lane"). Begin first scan about 250 feet from intersection. Scan, signal, scan again, take the lane and then pair up by the time of the stop. Hold hand signal out at least 2 seconds, and then place both hands back on the handlebars before turning. Once at the intersection, signal again. Be sure there is no oncoming traffic before making the turn. Do not hesitate or dawdle (use Power Start). Go back to single file after the turn.
- **Neighborhood Roads:** Ride to the right of the center line and at least 5 feet from doors of parked cars. Stop and identify door zone, parking lanes, blind driveways, bike lanes, traffic lanes, not weaving between parked cars, and to watch for neighborhood hazards — kids or dogs darting into street, balls rolling into street, blind driveways. Check for cars at intersections even when you have the right-of-way.
- **Copenhagen Left (alternative left turn):** Also known as a two-stage turn. Demonstrate taking a left as a pedestrian and/or as a vehicle by crossing each intersection on the right side of the road. See poster.
- **Power Start:** Demonstrate power-start position and what a complete stop looks like (completely off saddle and foot down). Power-start position is needed after every stop.
- **Roundabouts:** Demonstrate two ways to navigate roundabouts, one as a vehicle and one as a pedestrian. As a vehicle: scan about 150 feet before roundabout, signal, scan again, take the lane, pair up and yield to vehicles already in the traffic circle; quickly enter and exit as a vehicle; signal your intention to exit; single up after exiting roundabout. As a pedestrian: use the curb cut to move to the sidewalk and follow pedestrian rules (dismount and walk your bikes until you are through the roundabout and back on the roadway).
- **Have fun!** Enjoy being in the fresh air and on a fun bike ride with classmates.
- **Return to School on Time:** Be sure to check the time you leave the school and know when you need to return to ensure getting back to school on time. Monitor pace of the ride. Be prepared for short-cut or long-cut options.

Supplies: Ride-leader bags with first-aid kits; safety vests for all adults; cell-phone number exchange; lane-positioning posters; helmets and bikes; toolbox and floor pump (unless school has them); route maps (created on MapMyRide).

Giveaway: CDOT "Rules of the Road" wallet cards and/or "Ride Smart/Drive Smart" brochure.

SESSION 3 (DAY 3): PUTTING IT ALL TOGETHER

Class time: 60- to 70-minute bike ride around town.

Note: Ask if anyone wasn't at either of the first two classes (and fill them in on what they missed). Ask if anyone brought a bike that didn't already get checked by a mechanic. Explain green ribbon on bikes

(which means they have been checked and okayed by a mechanic). One instructor should train volunteers and hand out safety vests.

Review Group-riding Rules

In the gym, review group-riding rules from the previous ride. Remind students that there is *zero* tolerance for misbehaving on the road. Briefly explain the route. Divide the students into groups. Have students put on their helmets, do the Me Check, and get their bikes. Watch as they do their ABC Quick Check. Have fun!

Trail Etiquette — Expectations on the trail.

- **Communication lingo:** When someone is approaching you, the call is: "rider up, walker up," etc. Riders should ride straight and steady, over to the right. When passing someone going the same direction, the leader calls out "passing," and each rider communicates by ringing a bell or saying "passing on your left" and pulling over to the left to pass when clear.
- **Yellow-line definitions (for trails)**: Yellow lines reinforce that there is two-way traffic. Dashed means there is clear visibility and it could be safe to pass. Solid yellow means no clear visibility — *do not pass!*
- **Riders' location on the trail:** Riders should be in the middle of the right half, but not too close to the right edge. The sharp edges of concrete trails are a hazard for bicyclists who go off and try to correct their steering back onto the trail. This usually results in a crash. If a student goes off the trail, the best thing to do is slow down, stop, and walk the bike back onto the trail.
- **Stopping:** When stopping, move as far to the right as is safely possible; when starting again, check over left shoulder first to make sure it's clear to return to trail.
- **Speed:** Riders should always be controlling their speed. This is a leisurely ride, not a race. Generally do not go faster than 12 mph. Teach students to feather their brakes on downhills.
- **Other hazards:** Identify blind corners; take extra care in tunnels. Certain times of the year, watch for goatheads, wet leaves and floodwater on trail. If there is a trail closure, follow signed detour.
- **Signage:** Point out wayfinding and mileage signs along the trail.

Supplies: Ride-leader fanny packs with first-aid kits, tool kits, and pumps; safety vests; helmets and bikes; good attitude; cell-phone number exchange; lane-positioning posters; route maps created with MapMyRide.

Giveaway: FC bike map.

OPTIONAL RAIN/SNOW-DAY CLASSES OR ADDITIONAL CLASSES TO EXPAND THE BIKE UNIT

If skills-course day, an option is to set up course in gym. Otherwise, the following are some alternative/additional activities. If you want to reschedule because of rain/snow, be sure to check on staff availability before committing to a reschedule date.

Route finding — Look at FC bike map and discuss with students the various aspects of route finding for safer bike riding. Have students break into small groups and show each other which route(s) they take to

school by bike. Ask them where they have ridden (for example, to Old Town, a park or a friend's house). Also ask them where they would like to ride in the future (for example, Loveland, Windsor, Wellington). Invite students to the front to show a route they have ridden in town. Quiz them on the map aspects: What do the different colors of lines represent? Have them identify trails versus roads. How are underpasses indicated? How do you know where bike fix-it stations are? Et cetera.

Basic Bike Mechanics (include flat tire, brake and derailleur adjustments, seat, handlebars)

- Cleaning a bike — moving parts, lube
- Fixing a flat — tire levers, patch kits, pumps
- Other helpful on-the-road tools (multitool, Schrader/Presta adapter, electrical tape, small adjustable wrench, pliers, etc.)
- Seat and handlebar adjustments
- Brake adjustments
- ABC Quick Check review

See Appendix 5 for more information.

Bike Securement
Mention proper locking technique. Possibly give the school spare locks and cables to lend to students who forget locks.

Bikeology and CDOT SRTS Curriculum
Have students do activities/quizzes from Bikeology or CDOT curriculum. These activities and quizzes can also be used by students who, for any reason, have to stay behind on a ride day.

Watch Bike Safety/Lane Placement Videos
Watch SRTS videos from Colorado Springs or League of American Bicyclists videos.

Legal or Not?
Use "Legal or Not" posters to review rules of the road.

ADVENTURE PE: HIGH-SCHOOL CURRICULUM

SAFE-CYCLING SKILLS

This curriculum is designed for high-schoolers' complete independence and ability to fully grasp traffic law as newly licensed drivers. The focus is to create skilled cyclists on the road and conscientious drivers who understand the importance of sharing the road with all users. Working with high-school students can be challenging, especially seniors. Some are very attentive and engaged, while others are not. Some in class may be eager to share their opinions of "hating cyclists on the road." Their experiences bicycling on the road should give them a new (cycling) perspective. This, in combination with the Bicycle Friendly Driver course, should help develop them into more courteous drivers and safer cyclists.

SRTS wants to emphasize to high-school students that anyone can enjoy riding a bike, even if they hold a driver's license.

The high-school curriculum comprises at least two sessions: (1) principles of safe cycling, rules of the road, and skills practice and (2) on-road practice ride.

SESSION 1 (DAY 1): BIKE SAFETY AND SKILLS COURSE

Class time: 90 minutes (30 min. in-class lesson; 60 min. on skills course)

Note: You can adjust times for following activities if you have a shorter overall class time.

INDOORS OR OUTDOORS

Divide the class into four equal-sized groups and then assign each group to one of four stations to start their rotation through four skills/learning stations. Each group will move from station to station in an order/pattern designated by the instructors. It's recommended to have some sort of predetermined rotation times/stopwatches/radios to make rotations smoother and on time.

Before groups go to stations and start the rotation, each group will go through the following three checks.

1. Me Check — *Time allotted: 5 min.*

Discuss the need to check yourself — your shoes (closed-toe shoes required), shoestrings, pant legs, bright-colored clothing, attitude, brain turned on and protect it with a helmet.

a. How thick is your skull?
b. Think about what your life would be like if your brain didn't function properly.
c. Give examples of excuses for not wearing a helmet.
d. Ask students to make sure they wear a helmet when biking — make it cool in high school! Consider it just one more sport that requires a helmet, like snowboarding, football and hockey.

2. Helmet Fitting – *Time allotted: 5 min.*

Demonstrate proper helmet fit using the Two-Finger Rule. Students will then fit themselves with helmets.

3. ABC Quick Check (extended version) - *Time allotted: 5 min.*

Discuss mechanical check for bikes:

A. **"A" is for Air (tires)** — Tires should always be properly inflated. Check the sidewalls for recommended air pressure (PSI) for the tire. Tires that are not properly inflated will be: harder to ride, could ruin the rim or pinch the tube, and make the bike harder to control.

B. **"B" is for Brakes** — Always make sure both front and rear brakes are functioning properly. Right hand lever engages rear brake. Demonstrate. Left hand engages front brake. Demonstrate. Discuss problems when using only front brake. This is a serious issue as most kids will tell you they've done it and gone over the handlebars. Use this opportunity to discuss what happens if anything stops the front wheel suddenly (backpack hung on the handlebars, hitting a front wheel against something, etc.). Finally, make sure both wheels spin freely and are not rubbing against the brake pads.

C. **"C" is for Chain, Crank, Cassette** — Make sure that the chain drive is clean and that the chain is lubricated. If the chain is orange with rust or otherwise in poor working condition, then the bicycle may not operate properly. Make sure the crankset is not loose and that the cassette (gears on back wheel) are clean. Talk about gears and cross-chaining.

D. **"Quick" is for Quick Release** — Check to see if your bike has any quick releases. They're usually found on the seatpost and wheels. (Brakes often have quick releases as well.)

E. **"Check" is for Check All Over** — Check that the handlebars are tight, bottom bracket and pedals are tight, and nothing is rattling, clicking, rubbing or squeaking when starting to ride bike.

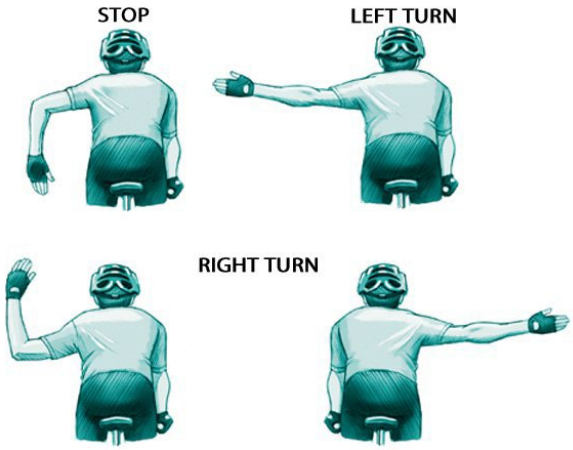
Also: Check saddle height (bike fit) — A general rule is that the saddle should be approximately at mid-hip height. Students should have a bit of space between them and the top tube when straddling the bike.

***Note:** Do not hang bags, backpacks, locks or anything else from the handlebars! Also, keep long jackets from getting into rear wheel, and keep cellphones securely inside a pocket.*

STATION 1 (OUTDOORS): Off-bike discussion of hand signals, rules of the road, common car/bike encounters

Time allotted: 15 min.

Demonstrate hand signals and have students practice — hold hand signals for a minimum of 2 seconds, and then place hand back on handlebars before making your turn. Students will practice this skill at Station 3.



Rules of the Road — Use lane-positioning posters to demonstrate what to expect on the road and "Legal or Not" posters to discuss specific car/bike situations on the road. (See Appendix 7, "Legal or Not" explanation.)

Review rules of the road — Ask students what they know first.

- Cyclists must obey the same rules as cars; obey all signs and signals.
- Ride on the right, with the flow of traffic in the farthest right lane that serves their destination.
- All cyclists are required by law to use hand signals when safe to do so, including stopping.
- Where to ride (bike lane, multi-use trails, sidewalks, taking the lane).
- Right-of-way: "First come, first served." At 3- or 4-way stop signs.
- Be visible — wear bright-colored clothing and ride in the proper part of the roadway. Be predictable — ride straight and steady, do not weave between parked cars, and be defensive. Be alert, keep eyes and ears open, and never enter an intersection before you check to make sure every vehicle has stopped even if you have the right-of-way. Communicate with drivers — make eye contact if possible; wave them on if necessary.
- When walking on the road where there is no sidewalk, always walk against the flow of traffic or on the left side facing traffic.
- In Fort Collins, it is legal to ride on the sidewalk. Should you? Probably not, but sometimes it's the only safe option. Be sure to yield to pedestrians and ride in a slow, controlled speed. Where is it not legal? Old town, CSU campus, other dismount zones.
- It is required by law that at least one hand remain on the handlebars at all times, including when signaling.

- Go through "Legal or Not" posters to demonstrate common car-bike encounters (see handout explanations).

STATION 2 (OUTDOORS): On-bike Skills — Power Start and hazard avoidance (Rock Dodge, Instant Turn)

Time allotted: 15 min.

Set up a mostly straight course on a flat surface with allowance for an "Instant Turn" to the right (to avoid sudden hazards from "Right Hooks" or "Left Crosses" — motor vehicles turning into their paths). Teach students proper mounting/dismounting of bikes and Power Start. Also set up a Rock Dodge situation. See Appendix 3 for reference on course setup.

STATION 3 (OUTDOORS): On-bike Skills — Straight-line riding, scanning/signaling, weaving, Quick Stop

Time allotted: 15 min.

Set up a mostly course on a flat surface that incorporates straight-line riding (riding straight and steady), scanning and signaling, weaving, normal stopping, and Quick Stop. Have students also practice inside pedal up when turning and general gear shifting (which can include shifting to lower gear before normal stopping). See Appendix 3 for standard Smart Cycling skills setup.

STATION 4 (OUTDOORS) — Off-bike demonstration of how to use bus bike rack (if available)

Time allotted: 15 min.

Show students how to use a standard Transfort bike rack. Have students try loading their bikes onto the rack. See Appendix 8 for detailed instructions.

Additional Key Points

Assess students' bike-handling skills to prepare for rides on the road. This is where we find out who can go on the road and who can't. If there are students who are not comfortable riding on the skills course, then we probably won't want to take them on the road and we'll have to make arrangements for them to remain on campus to practice riding.

Supplies: MS/HS Rodeo Kit (cones, chalk, domes, tennis balls); loaner helmets; toolbox; floor pumps; loaner bikes; and cable with lock. Alternatively, the silver trailer should be requested if it is available.

Giveaway: ABC Quick Check bookmark (adult version)

SESSION 2 (DAY 2): ON-ROAD PRACTICE RIDE

Class time: 90 minutes (10 min. in class; 80 min. ride)

1. Review Rules of the Road briefly

2. Group-riding Rules:

- Predictability — straight and steady.
- Straight line — not squirrelly.
- Single file — no passing.
- Bike length between riders — Why? Time to react. If a front wheel touches a rear wheel, the rider whose front wheel touches is the one who goes down.
- Audible and manual signals — loud, audible communication: stopping, turning.
- Hazard avoidance — call out hazards in the road; point to hazards.
- Both hands on handlebars AT ALL TIMES, unless signaling.
- Scanning — being aware of your surroundings at all times.
- Students will pair up at all intersections and decide together when it's safe to enter and must agree before entering intersection. DO NOT FOLLOW THE PAIR AHEAD OF YOU WITHOUT FIRST ASSESSING WHETHER IT'S SAFE FOR YOU TO GO!

3. Trail Etiquette — expectations on the trail:

- Communication lingo. When someone is approaching you, the call is: "Rider up," "Walker up," etc. Riders should ride straight and steady, over to the right. When passing someone going the same direction, the leader calls out "passing" and all riders communicate by ringing a bell or saying, "Passing on your left" and pulling out to the left to pass when clear.
- Yellow-line definitions (yellow means two-way traffic, dotted means there is clear visibility and it could be safe to pass, solid yellow means no clear visibility — DO NOT PASS).
- Location on the trail should be middle of right half, not along the right edge.
- When stopping, move as far to the right as is safely possible; when starting again check over left shoulder.
- Controlled speed (no more than 12 mph); learn to "feather" brakes on downhills.
- Identify blind corners; take extra care in tunnels.
- Point out signage — mileage, etc.
- Certain times of the year, watch for: goatheads, wet leaves and floodwater on trail.

Have students gather to put on helmets while still in the gym, and line up in riding groups. Groups are divided by eagerness and ability to ride, by discipline issues, or by other concerns which are determined by the PE teacher.

Once in groups, students do the Me Check on themselves. Once the groups gather outside with bikes, have them do the ABC Quick Check on their bikes with support from leaders, teachers and volunteers. Fit them on the properly sized bike with seat height adjusted properly (mid-hip).

Have an instructor go over the expectations for volunteers with them — distribute optional handout.

Be sure to have phone numbers for all leaders and the school number and that students needing medication are with the teacher's group.

Reiterate SAFETY and "One Strike Rule." Create groups of no more than 10 students, ideally with three adults (or a minimum of two adults). Keep rides within a reasonable pace, no more than 12 to 15 mph.

4. On-road Demonstration — Find a neighborhood where leaders will be able to demonstrate at minimum: Stop signs (2-, 3- or 4-way), taking the lane to make a left turn, a four-way intersection to demonstrate "Copenhagen Left," traffic light, quiet neighborhood street. If possible, include: roundabout, different bike-lane markings, difficult crossings near school or best place to cross busy roadways.

- Stop Signs: Obey "first-come, first-served" rules and right-of-way at stop signs. Signal, stop, signal again if necessary, check that all vehicles have actually stopped. Make eye contact and communicate with drivers, if possible. Only enter the intersection when all is clear. Be sure to discuss where to stop at intersections. Demonstrate where to stop at a stop sign (in line with it) and that it may be necessary to inch forward to be able to see clearly in both directions to know when it's safe to enter the intersection.
- Left Turns: Discuss lane control ("taking the lane"). Begin first scan about 150 feet from intersection. Scan, signal, scan again, take the lane and pair up. Hold hand signal at least 2 seconds, and then grab the handlebars with both hands before turning. Once at the intersection, signal again. Be sure there is no oncoming traffic before making the turn. Do not hesitate or dawdle. Single file after the turn.
- Neighborhood Roads: Ride to the right of the center line and at least 5 feet from parked-car "door zone." Stop and identify door zone, parking lanes, blind driveways, bike lanes, traffic lanes, not weaving between parked cars, and to watch for neighborhood hazards such as kids, dogs, balls rolling into the street, blind driveways.
- "Copenhagen Left" (also known as "Two-stage Turn"): Demonstrate taking a left as a pedestrian and/or as a vehicle by crossing each intersection on the right side of the road. See poster diagram.
- Power Start: Demonstrate when Power Start position is most necessary and what a complete stop looks like — foot down and completely off saddle.
- Roundabouts: Demonstrate two ways to navigate roundabouts, one as a vehicle and one as a pedestrian. As a vehicle — scan, signal, scan, take the lane, pair up and yield to vehicles already in the roundabout. Quickly enter and exit as a vehicle, and return to single file after exiting roundabout. As a pedestrian — use the curb cut to move to the sidewalk and follow pedestrian rules before entering back onto roadway after roundabout has been negotiated.
- Enjoy a fun ride!
- Be sure to check the time you leave the school to ensure getting back to school on time. Monitor pace of the ride. Be prepared with short-cut or long-cut options.

Supplies: Ride-leader fanny packs with first-aid kits; safety vests for all adults; cell-phone number exchange; lane-positioning posters; "Legal or Not" posters; helmets and bikes; toolbox and floor pump (unless school has them); route maps (created on MapMyRide).

Giveaways: FC bike map, "Ride Smart, Drive Smart" brochure

Optional Additional Classes

Route finding — Look at FC bike map and discuss with students the various aspects of route finding for safer bike riding. Have students break into small groups and show each other which route(s) they take to school by bike. Ask them where they have ridden (for example, to Old Town or to nearby towns). Also ask them where they would like to ride in the future (for example, Loveland, Windsor, Wellington). Invite students to the front to show a route they have ridden in town. Quiz them on the map aspects: What do the green lines represent? What do the blue lines mean? Purple lines and the green dashed lines? Are you allowed to bike on roads that are white?

Basic Bike Mechanics (include flat tire, brake and derailleur adjustments, seat, handlebars)

- Cleaning a bike: moving parts, lube
- Fixing a flat: tire tools, patch kits, pumps
- Other helpful on-the-road tools (multitool, Schrader/Presta adapter, electrical tape, small adjustable wrench, pliers, etc.)
- Seat and handlebar adjustments
- Brake adjustments
- ABC Quick Check review

See Appendix 5 for more information.

Bicycle Friendly Driver
This Bicycle Ambassador Program course takes 60 to 90 minutes and gives drivers an overview of how to drive safely in the vicinity of bicyclists (and pedestrians). The course includes a test, certificate and car decal for successful participants. This can be a very valuable addition to any high-school bike-ped safety program to give new drivers a proactive view of safety on our roadways from a bicyclist (and pedestrian) perspective.

Bike Securement
Mention proper locking technique. Possibly give the school spare locks and cables to lend to students who forget locks.

Safety videos or trick rider Danny MacAskill videos.

MIDDLE SCHOOL OR HIGH SCHOOL: AFTER-SCHOOL BIKE CLUB

SIXTH- THROUGH TWELFTH-GRADE LESSONS: SAFE BICYCLING SKILLS

This suggested curriculum can be used for an after-school club or a special-focus class, during which the instructor can go a bit more in depth than in PE. (A different curriculum can be created, based on the interests/abilities of any particular group of students.)

Just like in the PE classes, the goal of this curriculum is to appeal to students' growing sense of independence and adventuresome spirit, and to provide the safe-cycling knowledge and skills that will help them be safe on the roads and multi-use trail system. The focus is experiential, that is, to get the students out on the roads/trails and riding, and doing hands-on activities like route finding and bike maintenance.

Program length: *Four sessions (designed for 80- to 120-minute sessions); instructors will need to adjust the lesson plan for programs of shorter length or fewer/greater number of sessions. The goal is to ride each day, with indoor activities (such as watching bike videos) on rain/snow days. If doing more than four sessions, additional rides can explore new destinations and longer routes.*

SESSION 1: ROUTE FINDING, SKILLS COURSE

1. **Introduction** — Who am I, whom do I work for, and what is the SRTS program. You could say, "We believe that anyone can enjoy riding a bicycle. And if you show your parents/guardians that you can do it safely, they will let you bike alone places, which will give you more independence!" You can also focus on the health and environmental benefits of bicycling.

2. **Route Finding** – Look at the FC bike map and discuss with students the various aspects of route finding for safer bike riding. Have students break into small groups and first identify north to orientate the map correctly. Have them show each other which routes they have biked to school or around town. Have older students identify routes they currently ride (or will ride in the future) to high school. Quiz them on the map aspects: What do the green lines represent? What do the blue lines mean? Purple lines and the green dashed lines? Are you allowed to bike on roads that are white?

3. **Mechanical Checks on Bikes** — If possible, have a mechanic check the students' bikes while you are doing the introduction and route-finding exercise. Make sure SRTS bikes are available for any students who don't bring them or whose bikes are deemed unsafe by the mechanic.

4. **Skills Course** — Discuss how the skills course will be set up (similar to middle-school skills course). Practice the Power Start, normal stopping, Quick Stop, straight-line riding, scanning and signaling, Rock Dodge, turning and shifting.

Supplies: "Legal or Not" posters; FC bike maps; helmets and bikes.

Giveaways: FC bike map; Colorado Bicycling and Scenic Byways map; Colorado Bicycling Manual.

SESSION #2: RULES OF THE ROAD AND SHORT BIKE RIDE

1. **Rules of the Road** –
    a. First quiz the students with "Legal or Not" posters; give prizes for correct answers.
    b. Review rules of the road — ask them what they know first.
        i. Cyclists must obey the same rules as cars; under the law, you are a driver of a vehicle.
        ii. You must obey all signs and signals.
        iii. Ride on the right, with the flow of traffic.
        iv. Where to ride (bike lane, trails, sidewalks, in the lane).
        v. Right-of-way: "First come, first served."
        vi. Trail etiquette: ride on the right, yield to peds and call your pass.
        vii. Be visible, predictable and defensive; communicate with drivers.

2. **Short Bike Ride** – The first ride will be a short route on trails (if available) and at least a short portion on roads. On the ride, there will be lots of stops for discussion. The focus is on applying what the students learned in class in regard to trail etiquette and the rules of the road. The goal is to increase their comfort, confidence and sense of belonging on the trails and roads. As with rides during PE classes, form groups of no more than 10 students each, with at least two adults per group (leader and caboose).

    a. **Group-riding Rules** — Ride single file; stay between adults; give a bike length of distance between you and the rider in front of you; no passing; communicate (call out, "Stopping!"); make your own decisions (each rider looks for themself at intersections).

    b. **Discuss the Route** — Identify the tricky situations, for example, blind corners on trails and challenging road situations.

    c. **Helmet Safety and Fit** — Discuss the importance of wearing a helmet and demonstrate proper helmet fit.

    d. **Get Ready** — Put on helmets, divide into trains, students select their bikes. Instructors explain the ABC Quick Check and ask the students to do it; also do the Me Check, check seat height, and make sure everyone can brake properly.

Supplies: Helmets and bikes; tools; SRTS safety vests; SRTS ride leader bag (carry on ride).

Giveaways: ABC Quick Check bookmark; prizes (bells, lights, water bottles).

SESSION #3: BIKE MECHANICS, LANE POSITIONING, BIKE RIDE

1. **ABC Quick Check, Extended Version** — Discuss mechanical check for bikes: What to check before your ride (air, brakes, chain, quick-releases) and go into depth about other mechanical aspects, that is, cables (when problematic), the drive train, brakes, etc. Explain how gears work. Explain how to make hand adjustments on brakes and derailleurs. Work on a student's bike to demonstrate.

2. **Chain Maintenance** — Demonstrate lubing a chain; let students have a try.

3. **Fixing a Flat Tire** — Use the flat-repair kit to demonstrate; have the students work on some wheels.

4. **Bike Ride** — This ride will include a longer road route to practice more advanced maneuvers, such as left turns and roundabouts. The ride can include trails as well**.**

    a. **Lane Positioning** – Use the posters to discuss lane positioning and lane control ("taking the lane"); obeying "first-come, first-served" rule; and right-of-way. Demonstrate taking a left as a pedestrian ("Copenhagen Left"). Review how the group will handle intersections.

Supplies: Lane-positioning posters; helmets and bikes; workstand and tools; flat-repair kit; lube and rags; SRTS safety vests; SRTS ride leader bag (carry on ride).

SESSION #4: LONG BIKE RIDE

Before getting ready, review the route and any tricky parts. Review lessons learned from previous ride, for example, rules of the road that the students struggled with. Gather into bike trains, ask students to do the ABC Quick Check and Me Check, check seat height, and make sure everyone is ready for a big adventure.

Choose a route that is longer than previous rides and incorporates beautiful destinations and scenery along trails and/or roads.

Supplies: SRTS helmets and bikes; tools; safety vests; SRTS ride leader bag (carry on ride).

BIKE FIELD TRIPS

BIKE FIELD TRIPS (ELEMENTARY SCHOOLS)

Many PSD schools are running bike field trips, usually in fourth or fifth grade (and sometimes in earlier grades). This is an exciting development in education. While teaching safe-cycling skills, we are also sending a strong message that a bike can be used for transportation and exploration. Many students get the chance to bike on our bike paths for the first time. These events are a big effort, but very rewarding and memorable for the children and their parents/guardians. The kids love them!

GENERAL PREPARATION

Indoor lesson: One to two weeks prior to the scheduled field trip, an instructor should lead a bike safety class in PE in conjunction with the PE teacher (lesson plan on following page).

PE teacher preparation**:** It is highly recommended that the PE teacher take Smart Cycling before leading a bike field trip.

Route: Review the route with the teacher and discuss the best options. Preride if necessary.

Rain date: The PE teacher will probably select a rain date.

Letter to students: Ask teacher to attach a letter to the permission slips with the following: asking if the child will need a loaner bike; if bringing own bike, please bring it in good working condition; ask parents/guardians to rate the child's ability or comfort with bicycling (also identify children with special needs and figure out what accommodations can be made).

Parent volunteers: Parent volunteers are great, but they often need to be educated about safe cycling and vehicular cycling. It is ideal if the PE teacher schedules a parent training in advance. The SRTS instructor can review what we are teaching the kids, such as the rules of the road, lane positioning and helmet fit. To explain vehicular cycling, you can show "Cyclist's Eye View" on YouTube. It is also important to impress upon parents that they need to remember that we are teaching the kids and that we want the adults to model safe cycling, for example, that they may need to ride differently than they would if they were out riding alone. They *must* wear helmets.

Bikes and helmets*:* Ask the PE teacher to identify which students will need loaner bikes and helmets. Let the City's SRTS staff know the quantity and sizes of the bikes needed.

Bike inspection**:** The PE teacher may request that the students bring their bikes in the week before so that the bikes can be looked over by mechanics. If it is a small group, the bikes could be inspected by instructors in the morning before departure.

***Supplies** (ride)*:
Bikes and helmets; cable lock
Pumps and tool kit — including ride-leader bags with repair kit and first-aid kit (for on the road)
SRTS safety vests, maps (the route), leader tips (handout)

BIKE FIELD TRIP PREPARATION — LESSON PLAN

1. **Group-riding Rules** — Explain how we will make bike trains and the rules of riding in a group: stay between the leader and caboose, ride single file (except at intersections), give a bike length between you and the rider in front of you, no passing, communicate (call, "Stopping!"), make your own decisions.

2. **Discuss the Route, Lane Positioning and Intersections** — Go over the route and talk about how we will handle the tricky parts: left-hand turns, controlling the lane, bike lanes (door zone), sidewalks, intersections.
   Stop signs: Invite students to go in sets of two while reminding them that they need to still make their own decisions. Pairs help us get through the intersections more quickly and avoid holding up traffic. The mid-train adult can help students with taking turns with cars at a four-way stop.
   Stoplights: Everyone in your group will double up (in sets of two, side by side) and the mid-train chaperone will push the pedestrian button. Also, when approaching a stoplight, only go if the light will allow entire group (don't enter the intersection on a yellow or a very short green). If the whole group can't make it, wait until next full light cycle. Otherwise, without strong adult supervision mid-train, the kids will likely keep following the group and go through a red light. If we are approaching an intersection and the light is already green, the leader might decide to stop the whole group and wait for the next light cycle. After making it through the intersection, we will return to single-file formation.

3. **Rules of the Road** (abbreviated) — Cyclists must obey the same rules of the road as cars; obey all signs and signals; ride on the right: follow the "first-come, first-served" rule; trail etiquette; communicate with cars.

4. **Helmet Safety and Fit**

5. **Skills Course** – Power Start, stopping, straight-line riding, scanning and signaling, turning right and left.

***Supplies**:*
Rodeo kit
Indoor teaching kit (lane-positioning posters)
Your own bicycle and helmet
Giveaways: FC bike map, ABC Quick Check bookmark

BIKE FIELD TRIPS – LEADERSHIP TIPS

Give a copy of this page to each instructor and parent volunteer. This is a guide of what to remember as a leader on the day of the field trip.

Group up with your students, introduce yourself and do the following:

1. **Me Check, ABC Quick Check, and Seat Height**
2. **Review Group Riding Rules** — Ride single file; double up at intersections; stay between the adults; no passing; bike-length distance between yourself and the biker in front of you; communicate (call out, "Stopping!"); make your own decisions (each person stops and looks for themself before entering an intersection).
3. **Review Trail Etiquette** — Ride on the right; call your pass; yield to pedestrians; pull off trail when stopped; yield at trail mergers and forks.
4. **Review the Rules of the Road and Lane Positioning** — Ride on the right; obey all stop signs and signals; ride straight and steady; ride in the main lane when there is no designated bike lane; door zone in bike lanes; left turns (scan, signal, move into main lane, watch for oncoming traffic).
5. **Review Skills** — Signaling, Power Start and stopping (ask if everyone is comfortable); ask each student to demonstrate braking.
6. **Review the Route** and the tricky parts.

Other tips —

Stop often, in advance of the tricky parts, to remind the kids how you will do it. Stop afterward to discuss how it went. Debrief with students at the destination.

Intersections with stop signs: Invite students to go in sets of two while reminding them that they need to still make their own decisions. Pairs help us get through the intersections more quickly and avoid holding up traffic. The mid-train adult can help students with taking turns with cars at a four-way stop.

Stoplights: Everyone in your group will double up, and the mid-train chaperone will push the pedestrian button. Also, when approaching a stoplight, only go if the light will allow entire group (don't enter the intersection on a yellow or a really short green). If the whole group can't make it, wait until the next full light cycle. Otherwise, without strong adult supervision mid-train, the kids will likely keep following the group and go through a red light. If we are approaching an intersection and the light is already green, the leader might decide to stop the whole group and wait for the next cycle. After making it through the intersection, return to single-file formation.

Supplies: Ride leader bag with flat-repair kit, hand pump, tools and first-aid kit; SRTS safety vest; bike and helmet.

BIKE RODEOS

BUILDING A BIKE RODEO – ELEMENTARY SCHOOL OR FAMILY BIKE RODEOS

Getting Organized
In advance: The program coordinator or lead instructor will do a site visit, preview the blacktop and design the course.

Day of the rodeo:
1. Inspect the bicycles (check for air and mechanical issues)
2. Prep the helmets (organize by size)
3. Get tools ready for seat adjustments and possible pedal removal (though it's much preferable to use SRTS balance bikes rather than removing kids' pedals)

Supplies:
Rodeo Kit (see list of contents in previous section of this manual)
Traffic signs; large cones; crosswalk mat
Bike fleet and helmets (new and loaners), including balance bikes of appropriate sizes
Bike workstand, toolkit and extra pump

Human Resources:
You will need four to five instructors/volunteers for the course. Key positions for observation and feedback are: the start (Power Start), the Crazy 8/intersection, the RR crossing, the stop box (Quick Stop) and the snail race. Scanning and signaling in the straight-away can use an instructor to hold up hands and test the kids. Instructors can move about and try to watch two stations. You will also need one or two instructors/ volunteers for the balance-bike riders.

The Skills – The skills that the children will be working on include:

Power Start (proper starting)
Stopping and Quick Stop
Obeying traffic signs/crosswalks (yielding to pedestrians)
Straight-line riding
Weaving (control)
Rock Dodge
Yielding and right-of-way
Sidewalks and driveways
Intersections
Riding on the right
RR crossings
Turning
Scanning and signaling
Balance (snail race)
Communication – calling your stop

See Appendix 2 for sample bike rodeo diagrams.

TEACHING POINTS

At each section of the rodeo, these are the key points you can address with the students:

1. ***The Power Start*** – One foot on pedal with pedal position up (at 10:00 or 2:00 if the crank arms were a clock), opposite foot flat on ground, butt off seat, push off strong with both feet, stand up and then sit down. The point of the Power Start is to give you a powerful start when entering an intersection so you can get through quickly. Butt off seat is a more steady waiting position. You can talk to kids about standing over their top tube.

2. ***Stopping/Quick Stop*** – For most kids, just using their brakes instead of their feet is a huge improvement! You can explain how the hand brakes work: squeeze both equally and gradually; right is the rear brake ("right is rear").

   In the stop box, tell them you want them to do three things when stopping: (1) Call it out in advance (yell, "Stopping!"), (2) foot down and (3) look LRLB before going.

   The Quick Stop is for more advanced riders and those kids who like to skid out. The goal of a quick stop is to *not* skid out while stopping in a defined area. Explain that they should move their butt back (extend their arms), stay low and apply both brakes, all at the same time. And see if they can do it within the stop box.

3. ***Straight-line Riding*** – If a child is having trouble, remind them to look up and ahead. Tell them to use their tummy muscle and that speed helps.

4. ***Crazy 8/Intersection*** – This part of the rodeo course is great for learning about yielding when entering a roundabout and for practicing right-of-way (first come, first served) at an intersection. An alternative to the Crazy 8 is a true intersection (see Appendix 2).

5. ***Signaling*** – Remind kids that they need to signal before — in advance of — the turn. And have their hands back on the handlebars before turning.

6. ***Sidewalks and Driveways*** – At the end of a sidewalk or driveway, you need to stop (foot down!), look both ways, and *slowly* enter the street — inch out while looking LRLB.

7. ***RR Tracks*** – A RR crossing is a good place to learn about crossing cracks or tracks at a perpendicular angle.

8. ***Traffic Signs*** – You can be strict about these. If a student disregards one, ask them to go back and do it again!

BALANCE-BIKE RIDER ZONE

At every bike rodeo, you will want a balance-bike rider (learn-to-ride) zone, blocked off by cones. Have the balance bikes on hand, a pedal wrench and wrenches for removing training wheels, and copies of "Riding without Training Wheels" to give to parents/guardians. You will need at least one instructor in the zone to teach the learners. See "Riding Without Training Wheels" handout and Appendix 4 for more information.

Some children become very attached to their training wheels. The first obstacle in teaching these children how to ride will be getting them to agree to take off the training wheels. You can say, "I bet you I can teach you how to ride a bike today. But first we have to take the training wheels off. Should we try it?"

OFF-ROAD SKILLS COURSE

At a Family Bike Rodeo, you might consider setting up an additional course, such as an off-road skills course for the more advanced riders. Components could include: riding through sand and grass, switchbacks, small ramps over logs, and a "speed loop" where you can time them. The SRTS program has wooden ramps that can be used as well, for practicing balance. For the very energetic riders, this course will help them burn off some steam!

Word of caution: Be sure to check for goatheads in the grassy areas before setting up an off-road course. If goatheads are prevalent, then it is not worth doing because of the flat tires that will ensue.

BUILDING A BIKE-HANDLING SKILLS COURSE – MIDDLE SCHOOL

A middle-school skills course pulls from the elementary bike rodeo but does not involve as many components, since much of their learning can happen on the road. You can set up the Smart Cycling oval (see Appendix 3 for information) or a mini course of the following: straight-line riding, start line and stop box, and weave course.

The skills to focus on for this age group are: the Power Start, proper stopping and the Quick Stop, straight-line riding, weaving, scanning, signaling and turning, and the Rock Dodge. The same teaching points mentioned for elementary-aged kids apply to middle school. You will be surprised by how many children in this age group still lack basic bike-handling skills, such as riding straight and steady or knowing how to brake effectively.

APPENDICES

APPENDIX 1: GENERAL INFORMATION

DISCIPLINE

Ask the PE teacher to help you with classroom management. This allows you to focus on teaching. You can also ask him/her what the school's method is for getting students to be quiet or pay attention (some schools have a clapping pattern or a special saying).

While talking to the students, you can also ask them how their teacher gets their attention.

A good technique that you can use while talking is to walk toward the child who is not paying attention. S/he will notice you, and you can smile at the student and keep on talking.

Your co-instructors can help as well. While you are talking, they can be helping get the students to pay attention by moving around the room, sitting next to children or touching them on the shoulder.

Also, if you are losing their attention, this could be your cue that it is time for a physical activity.

When outside, you can say, "If you can hear me, tap on your helmet," or "If you can hear me, stand on one leg." Gradually, the kids start to hear you and do what you asked.

HELMETS

When having the conversation about helmets, make sure you have a strong statement with which to leave the students about wearing helmets. As instructors, we should have the last word in this discussion.

For example, if you ask the students, "What are some reasons that you might *not* wear a helmet?," you need to end this conversation with a firm statement about why you want them to *always wear one*. You could respond by saying, "Wearing a helmet is like wearing a seat belt. You are going to wear a seat belt every time you are in a car for your whole life and you might never get into a car accident. At the end of your life, are you going to say, 'Gee, why did I bother to wear a seat belt?' No, you are going to be glad you were prepared to save your life if you got in a crash."

You could ask the whole class to take a pledge that they will wear a helmet. Ask the class to repeat after you, "I pledge to always wear a helmet when bicycling, rollerblading, riding a scooter or skateboarding."

Also, point out (and model) that a serious cyclist like you always wears a helmet. We can model an ease and comfort with wearing a helmet and of how to wear one properly.

Children assume that once they learn how to ride a bicycle that they will not fall off and hit their heads. Unfortunately, adults who don't wear helmets reinforce this opinion! Tell them, "I want you to wear a helmet every time you ride a bicycle even if you think you are never going to fall off and hit your head."

Do some online research to learn more about helmet safety, brain function and brain injury. Start with www.helmets.org for some good materials. Also refer to "Helping Your Child Be a Safe Bicyclist" among SRTS handouts.

PHYSICAL ACTIVITIES – ELEMENTARY SCHOOL

Because this is a PE class, we want to make sure that the students get to move as much as possible. Physical activity is interspersed throughout the class time in the lesson plans.

Following are some ideas for physical activity. First consult with the PE teacher to learn what s/he normally uses to warm up in the classes. We can modify their activities to make them bike- and ped-related, for example, tag becomes "pedal tag."

Colorado triathlon
Pedal tag
"Red Light/Yellow Light/Green Light"
Running laps
Crab walk (instead of walking, as a way to get somewhere)
Balancing positions (eyes open, eyes closed, yoga airplane)
Simon says (for K-1, focus on right and left)
"Dart out" ball game (K-1)

DEVELOPMENTAL STAGES – ELEMENTARY AGES

Understanding each developmental stage can help you in working with kids and in formulating your argument for wearing helmets.

Kindergartners *(5- to 6-year-olds*): While children of this age are gaining more control of themselves physically and emotionally, kindergarten is all about practice, mastery of skills, and learning the rules and how to follow directions. They are eager but also easily distracted. In school, they are learning to sit still and follow simple directions.

Helmets: Allowing them to "practice" wearing a helmet will get them excited.

First- and second-graders *(7- to 8-year-olds):* These students are entering the stage of developmental integration, allowing them to accomplish increasingly complex tasks. They have a better understanding of cause and effect. This age group can be rule-oriented and driven by the need to do things right (very law-abiding).

Helmets: Stating that it is a rule should influence them. Appeal to cause and effect: if you hit your head, you could get a brain injury.

Third-graders *(8- to 9-year-olds):* This age group begins to focus on their sense of independence and making their own decisions. They are also more focused on what others think, and forming moral opinions of what is right and wrong. They might like becoming a "know-it-all."

Helmets: Stating that it is a rule should influence them. Focus on information that allows them to be experts on helmets and brain injury.

Fourth- and fifth-graders *(10- to 11-year-olds):* This age group will often be attentive learners and eager to participate. Peer pressure and being accepted are becoming important.

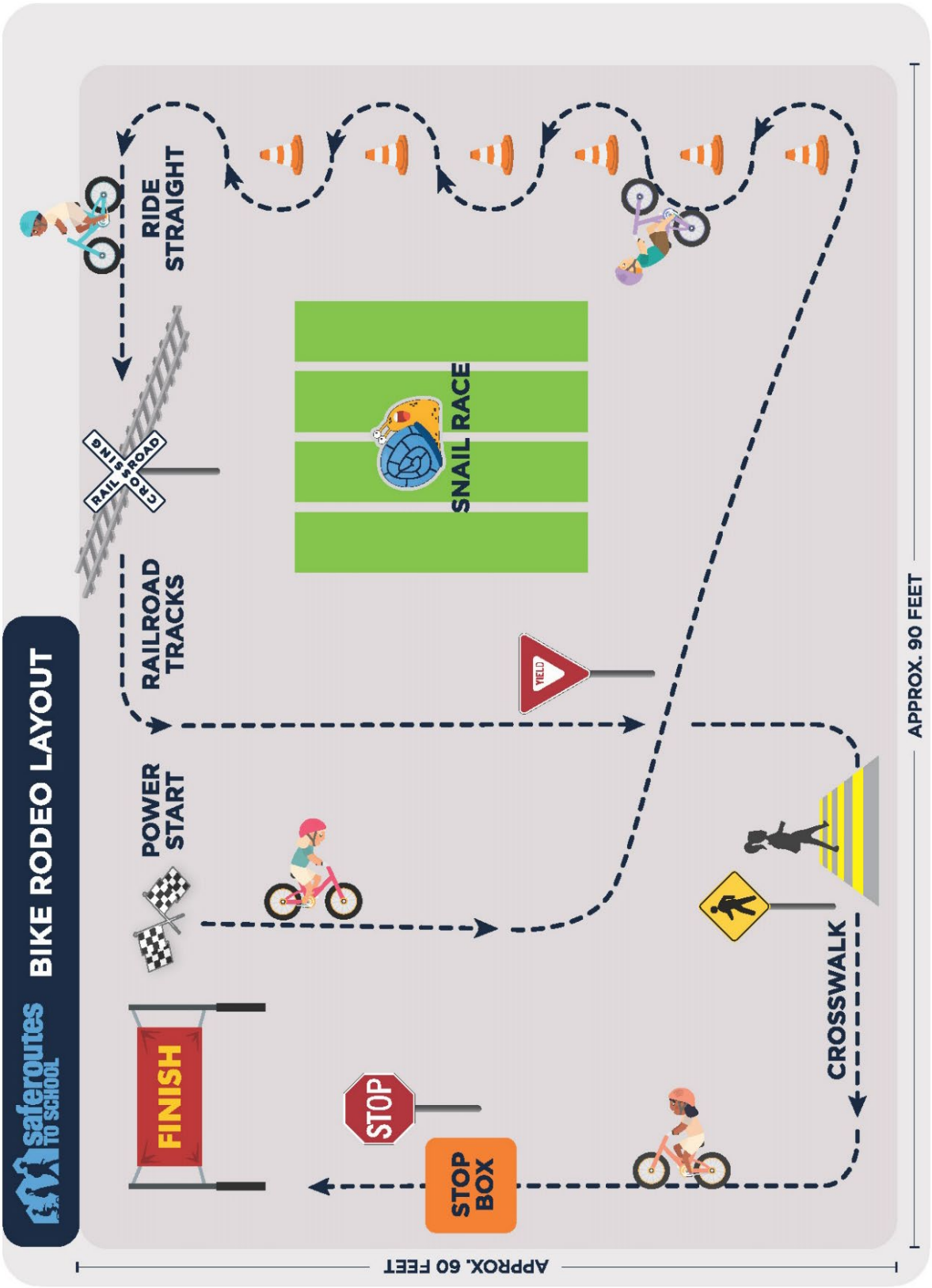
Helmets: With fifth-graders, this is our chance to send them away to middle school with a commitment to wearing a helmet, when it might be perceived as not cool.

You can appeal to their growing sense of reason with a good argument. You can acknowledge that, yes, helmets are a little goofy-looking, but it is a good choice to make for your health.

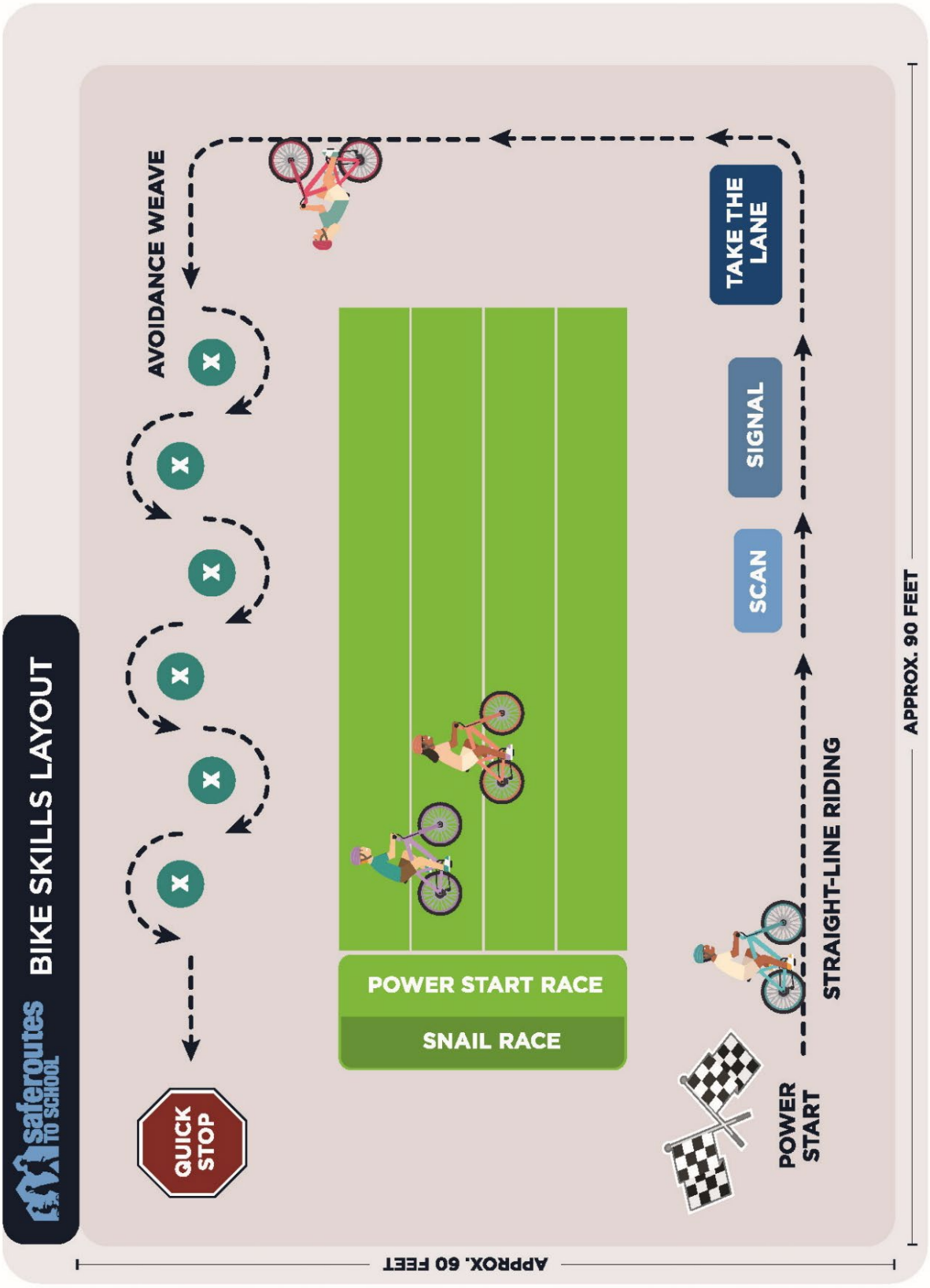
This age group should be influenced by positive modeling from professional athletes. List the pro athletes that you know of and the sports that they are participating in (football, hockey, skate-boarding, BMX, ski racing, etc.) and note that they all wear helmets. Point out that they do this because they are smart and know that they would not be able to do their sport any more if they got a head injury. The SRTS program has large laminated photos of some of these athletes.

APPENDIX 2: BIKE RODEO SAMPLE LAYOUT — ELEMENTARY SCHOOL

OPTIONAL BIKE RODEO LAYOUT: INTERSECTION WITH YIELD



APPENDIX 3: SAMPLE BIKE SKILLS COURSE — MIDDLE/HIGH SCHOOL



Bike Skills Based on League of American Bicyclists' Smart Cycling Curriculum

Drill Layout

SET UP:

The Cycling Skills/Adult drills are designed to allow a neophyte cyclist to practice basic bike handling drills in a non-threatening environment.

The layout is 120 x 20 feet. It is this size for a reason and you should be hesitant to change it. Most states require turn signals beginning at 100 feet before a turn. This layout allows riders to visualize that distance and practice scanning, signaling and turning in that distance.

The 20 foot width is designed to give cyclists a chance to practice turning in tight conditions. It makes them comfortable leaning their bike to turn which gives them better control.

RIDER CONTROL:

Have riders line up two by two straddling their bicycles in the "Parking Lot."

Instruct them not to go until they are clear what the exercise looks like and you touch their handlebars.

Instruct them that they are to return to the parking lot each time they complete three repetitions of the exercise.

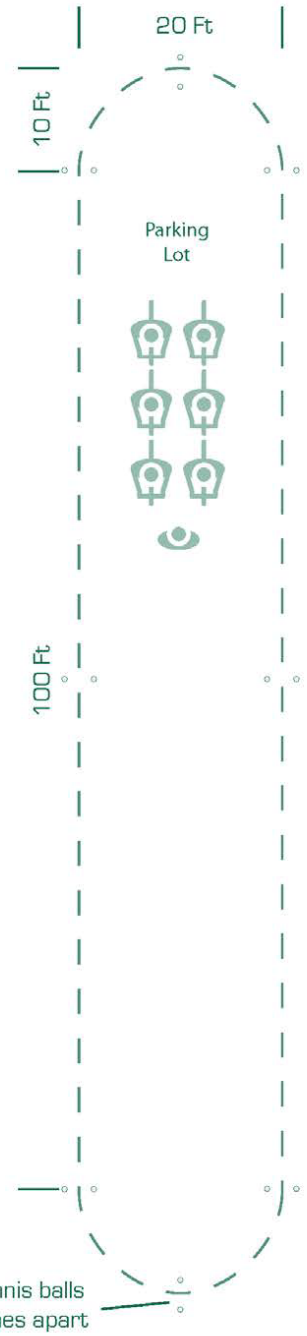
MOUNTING AND DISMOUNTING:

Many riders will be uncomfortable mounting by throwing a leg over the seat. There are numerous other ways to mount and dismount a bicycle, even one with a top bar.

If someone has a problem mounting or dismounting it is always appropriate to suggest a bicycle with a low step through height. Many cruiser, comfort or town bikes have low or non-existant top bars.

The easiest way to mount a standard frame bicycle is to reach across and grab the far handlebar, and with the other hand on the seat, lean the bike towards you. You can either step directly over the top bar or swing your leg in an arc behind the seat.

Dismounting involves a similar movement.



STARTING STOPPING

1

Starting: Have students begin by standing over the bicycle with both feet on the ground.

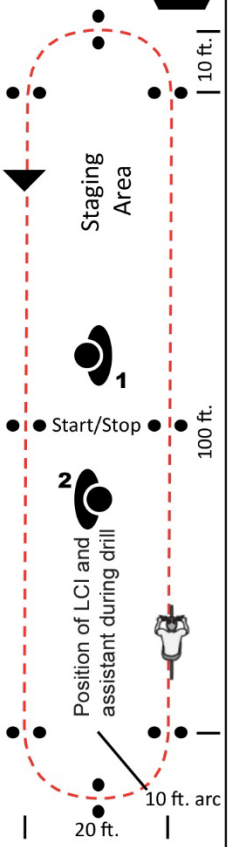
With the bike in starting gear, foot in power pedal position, stand up and push down. Get second foot on the pedal as it reaches the top. Keep the pedals turning and increase speed to a comfortable pace.

Stopping: Have riders brake to a stop in the middle of each leg, using both brakes and turning handlebars away from the dismount side as the bike comes to a complete stop and they get off of the saddle and put one foot down.

Instruct students to return to the staging area after three repetitions of each complete drill. The staging area is in the middle of one end of the layout.

Option: Have riders find "starting gear" by making three starts in different gears.

Tennis balls: 18 inches apart.



STRAIGHT LINE/ SHIFTING

2

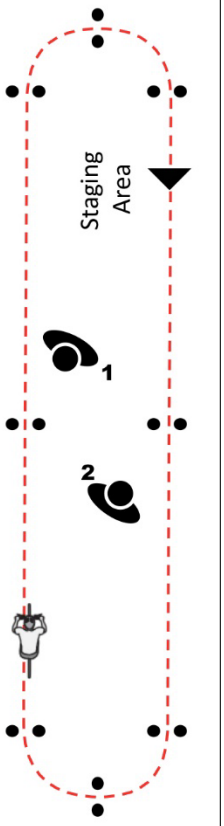
Setup:
Use the same oval course as Starting/ Stopping.

Have the group ride the course in the opposite direction from the last drill, shifting into a higher gear for the straightaways and a lower gear around the curves.

Instructor and assistant should be encouraging students to lean the bicycle to complete the turn within the 20-foot curve.

Each student should go through the entire loop three times and return to the staging area.

Remind students that they need to look beyond the oval to stay in a straight line.



SCANNING

3

Setup: Use the same course as Starting/ Stopping or Straight Line/Shifting.

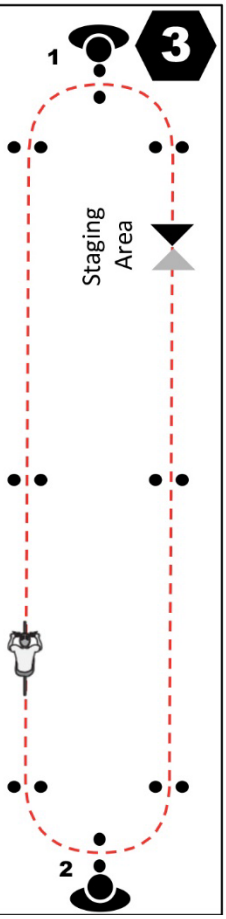
Instruct each student to scan twice on each leg and call out the number of arms the instructor is holding up (zero, one or two).

Go around three times, counterclockwise, scanning to the left, and return to the staging area. Then go around three times, clockwise, scanning to the right.

Have all students complete at least three repetitions to each side.

If no assistant is available, perform the scans on just one leg of the course and reverse the flow after all have completed at least three scans to one side.

Instructors should stand approximately where the driver of an overtaking automobile would be (indicated on the diagram).



SCAN, SIGNAL, TURN

4

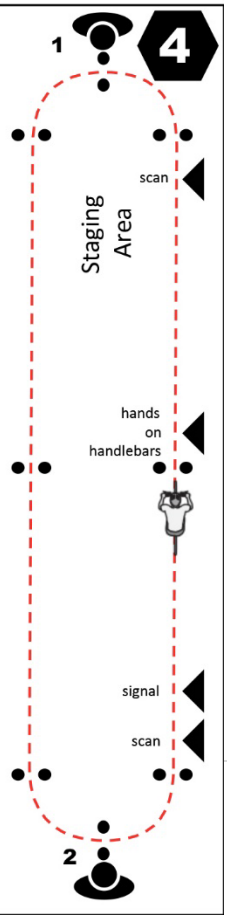
Setup: Use the same course as Starting/ Stopping or Straight Line/Shifting.

Instruct students to scan early, signal for a count of two, return hands to the handlebars upon reaching the mid-point then scan one more time before beginning the turn.

Most states require a signal 100 ft. before a turn. This layout gives students practice judging that distance.

After each student has been around three times signaling a left turn, and is back at the staging area, have the group reverse directions and scan and signal a right turn.

Make sure the students remember to scan and signal early and have both hands on the handlebars during the turn.



QUICK STOP

5

Setup: Balls are placed in pairs, 18 inches apart and spaced 4 ft, 2 ft, and 4 ft apart along the chute as shown.

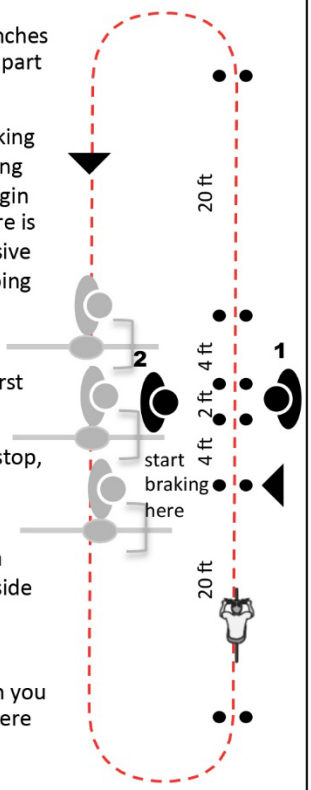
Riders will make three different braking passes through the chute, maintaining the same speed for each and will begin braking at the first pair of balls. There is no target stop line, but each successive pass should result in a shorter stopping distance.

Instruct students to begin braking when the front wheel reaches the first pair of balls.

Have students come to a complete stop, with one foot flat on the ground.

Instructor stands in a position to support the riders as they come to a stop. Assistant stands on the other side for the same reason.

For more advanced riders:
Instruct them to begin braking when you give a signal while they are somewhere within the chute.



ROCK DODGE

6

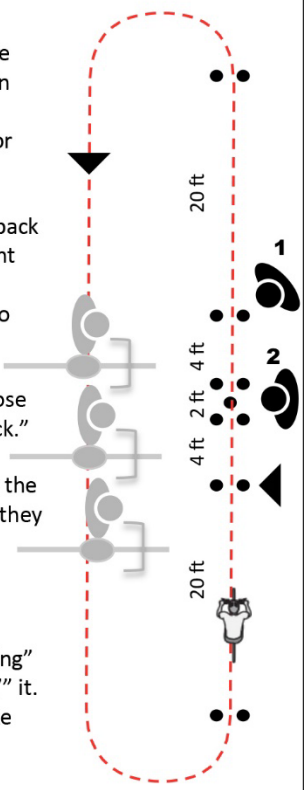
Setup: Using the same layout as the Quick Stop, turn a ½ tennis ball inside out to make the "rock" and place it in the very center as shown. Mark the positions of all the balls with chalk for quick replacement.

We teach turning left first and then back to the right. If done properly the front wheel should pass to the left of the "rock" and the rear wheel will pass to the right.

Remind students that they will not lose points if the back wheel hits the "rock."

Instructor stands in a position to see the front wheel. Assistant stands where they can replace the "rock" quickly. Have extra rocks on hand.

Start with balls 18 inches apart and reduce the width if riders are "steering" around the rock instead of "dodging'" it. Announce that you are going to make the "dodge" action easier.



AVOIDANCE WEAVE

7

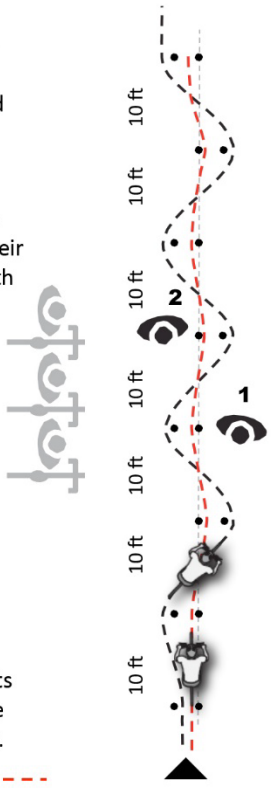
Setup: Place 8 balls on a straight line 9-10 feet apart. Place a second ball 18 inches to the side of each ball, alternating sides except for the second ball (see diagram).

Remind students that the first few passes will be made by going between the pairs of balls, which means that their tires need only move laterally the width of a tennis ball.

The second set of three passes will require riding around the outermost ball of each pair. The tires must now travel 3 feet laterally for every 10 feet along the length of the course.

Instructor stands in a position to give encouragement and remind riders to look up, turn early and lean their bicycles.

This is a fun exercise and most students will want to continue riding it, so make sure you maintain your time discipline.

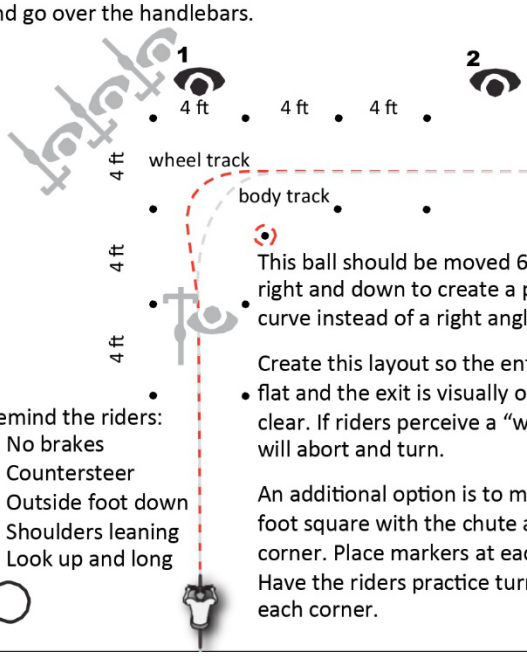


QUICK TURN

8

Point out to students that this is the space that they would have if they were sharing a wide lane or riding in a bike lane. Have them begin the countersteer at the second set of balls.

Most riders fall by straightening up before they have completed the turn. A few riders may jerk the handlebars back too sharply and go over the handlebars.



This ball should be moved 6 inches right and down to create a perceived curve instead of a right angle.

Create this layout so the entrance is flat and the exit is visually open and clear. If riders perceive a "wall" they will abort and turn.

An additional option is to make a 36 foot square with the chute as one corner. Place markers at each corner. Have the riders practice turning at each corner.

Remind the riders:
1. No brakes
2. Countersteer
3. Outside foot down
4. Shoulders leaning
5. Look up and long

APPENDIX 4: TEACHING KIDS HOW TO RIDE

LEARN TO RIDE

The following information provides guidance for teaching a rider how to ride a bike from the ground up. The first part is focused on balance-bike riding, and the second section is an introduction to pedal-bike riding. This is not an exhaustive list of skills needed to ride a bike, but it does provide a stable foundation from which to teach. For more information, see the handout titled "Teaching Your Child to Be a Safe Bicyclist" (available in English and Spanish).

Considerations before starting: Have a skill progression in mind. People will learn at very different paces, and it is important to have a skill ready for riders who are progressing more quickly, or for the ones who are not getting it right away.

Note: *An alternative to the following lessons is a five-minute method that can be used for very motived kids. It is explained in a short video on the SRTS website (fcgov.com/saferoutes).*

Balance-bike riding:

1. **Setup:**
    a. Get riders on balance bikes, or remove the pedals from their own bikes for familiarity and enthusiasm.
    b. Lower the seats so that their feet are flat on the ground and knees slightly bent.
    c. Make sure helmets are on properly.
2. **Introduction:**
    a. If bikes have hand brakes, check for understanding of how to use them.
    b. Have students sit on a balance bike and let go of handlebars (hands in the air) so they experience balance.
    c. Put the group in a line and talk about keeping their heads up, looking forward, and find something in the distance to walk toward.
3. **Skill Progression:**
    a. Begin to walk at a relaxed pace on the balance bike, making sure they stay seated on the saddle.
    b. Depending on the size of the group, and the space available, you can walk backward and have the group of kids follow while focusing on your chest. *Continue to remind them to keep their heads up.*
    c. Increase speed of walking, or introduce "step, step, glide."
    d. As the riders get more comfortable, challenge them to push five times then pick up their feet.

e. Once they can coast, have them roll with feet pulled into the midline of the bike. (This gets them used to balancing with feet at the pedals.)
f. If they are coasting for at least 10 seconds (have them practice counting the seconds while they coast, until they reach 10):
    i. Have them glide and turn with feet still up.
    ii. Then glide and use brakes.
g. If you have a slight hill, have the kids start at the top and use gravity to coast to a spot and make a turn around it. This skill also helps to reinforce the use of brakes to come to a stop after the turn.
h. If they are getting these skills comfortably, put them on a pedal bike. Have them do a Power Start and bring the second foot up to the pedal.

Note: Continue to remind them about looking up.

Stay at any one of these skills if the rider is not ready to progress onto the next. Be patient and congratulate them on everything they do. This can be a frustrating experience, so positive reinforcement is key.

Key tips if they are struggling:

1. If they have a hard time staying seated, suggest they use two feet at a time to push. Introduce this to everyone to increase their speed.
2. Have them keep one foot at the middle of the bike and push off one foot.
3. Hold something in the air for them to look at if they are not focusing on you. A teddy bear could be used, for example.
4. Count out loud for them and really guide them on when to step and when to pick their feet up.

Games:

1. Walk backward in front of a rider and tell him or her to try to catch you. The instructor can move while the rider's feet are on the ground, and must stand still when the rider is gliding.

2. If there are several kids, you can introduce a race. This can help them focus on something else if they are struggling with the pushing/balance.

3. Distance challenge. Push for a specified distance and pick feet up for a certain amount of time. (For example, push for half the length of a basketball court on the playground, and see how far they can roll without putting feet on the ground.)

4. Introduce cones for them to weave around; make a short course so they can practice turning. Keep it interesting and reasonably challenging for them.

5. Play "Red Light, Green Light."

Pedal-bike riding:

1. **Setup:**
    a. Fit the riders with bikes on which they can comfortably reach the hand brakes (if equipped) and firmly plant their feet on the ground.
    b. At first, the seat can be in a lower setting to facilitate the progression to pedaling.
    c. Get the riders to a space that has enough room for them to ride in a straight line for at least 10 seconds.
2. **Introduction:**
    a. Review with the riders the types of brakes that the bikes have (coaster, hand, or both).
    b. Two options for getting the riders pedaling are:
        i. Have the riders push as if they were on balance bikes. When at speed, have them bring their feet to the pedals and start rotating the pedals.
        ii. Introduce the Power Start. One foot in a high forward position, and the other on the ground. They give one big push, and, once moving they bring the second foot to the pedal.
3. **Skill Progression:**
    a. Have the rider practice starting and pedaling.
    b. Make sure they can stop themselves with the brakes (not their feet).
    c. Ride in a circle one direction.
    d. After a few laps, change direction.
    e. Incorporate a weave with cones to develop the turning skills and balance.
    f. If the bikes have gears, introduce shifting. Teach upshifting while picking up speed and downshifting before stopping.

APPENDIX 5: TEACHING BIKE MAINTENANCE

Bicycle Repair/Maintenance

This is a work-in-progress version of a potential curriculum or curricula for teaching repair skills to youth — going far beyond just fixing flats and lubricating chains. Eventually there would likely need to be many versions of this or some sort of mix-and-match system, depending on how much time and how many days you have. This version of lessons is a sample of what we used in fall 2021 at middle schools — for short 40-minute periods. They can easily be used for 50- to 60-minute periods without modification.

The first days are necessary to build a foundation. Latter days will be clearly interchangeable based on whatever the instructor wants to use. *This version of the curriculum is written as an outline or cue sheet.* The actual content and instructional creativity are left up to the instructor. Future versions of these lessons will increase the variety and ability to mix and match based on the time available.

Middle School, 3 x 40- to 60-minute periods

Day 1

Objectives

- Respecting each other
- Respecting the tools and bicycle
- Begin to learn the names of all the objects on the bicycle and bicycle repair world
- Learn tool names of everything included in the basic class toolbox
- Learn to use the various tools in the basic toolbox
- Workstation inventory and teardown (to be done at all future days)

- Introductions
- The Plan for the 3 days, same equipment each day
- Rules – respecting the tools, person working, being a helper

Equipment (5 minutes)

Introduction to the workstation — tools in a box, repair stand, bike

Cleanup summary — inventory back into box, hand cleaner

Tools/Toolbox

- Enumerate inventory
- Metric vs. non-metric
- Tools which do the same jobs

    - adjustable and box
    - types of hex wrenches
- Inventory list, please use it
- Non-use of gloves

Repair Stand

- Why we use the stand, which way to *face the bike*
- Lifting strategies (solo and in pairs)
- Closing the clamp (twisting, camming)
- Rotation of the head (after loading bike)
- Height adjustment
- 2 or 3 types: cam head vs. spin only
- Where to clamp on the bike frame/seatpost

Quick Vocabulary (5 minutes or less)

- Seatpost
- Quick release
- "Drive side," "Drivetrain"
- Crank

Day 1 Tasks/Exercises

- Load bike into stand
- Unload and flip around the bike
- Rotate bicycle in stand
- Remove front wheel
- Remove rear wheel
    - Observe chain routing beforehand
    - Shift to small gear beforehand
    - Open brake beforehand
- Remove tube/tire, reinstall
    - Skip adding air
- Reinstall wheels
    - Reattach brake
    - Check wheels/brakes for proper operation
- Take bike off the stand, reinflate tires

End of Day 1

Extra exercises

- Observe cabling for brakes and shifting
    - Details of the routing (cable guides, bending)
- Practice pedaling and shifting on stand
    - Safety of hands!!
- Pull on cables manually to see operation

- Vocabulary of cabling and tools involved (prep for Days 2 and 3)
- Remove old chains, rechain

Day 2

Objectives

- Learn good vocabulary in the tube/tire/wheel area of a bicycle
- Experience the assembly and disassembly of a traditional tube/tire
- Develop knowledge of reading tires and tubes, and selecting replacements
- Learn to remove and install wheels onto bicycle (especially the rear)

Vocabulary

- Wheel, tube, tire, spoke, nipples, rim tape
- Bead, knobby, slick, sidewall
- Valve types (2)
- Tube vs. tubeless
- Dropout, quick release, bolt-on, cam, chainstay

Tube/tire "market" exercise

- Rotate groups through the exercise throughout period
- Students are given a tire and need to select a proper tube as a replacement
- Supplies used can be empty tube boxes or simply a selection of tubes

Tube Patching (students work together or solo)

- Locate puncture in tube
- Mark location (optional)
- Scuff location
- Apply vulcanizing fluid
- (WAIT)
- Apply patch
- (Critique / test results)

Tire/Tube Change

- Remove wheel from bicycle
- Examine tire for damage/cause
- Use tire levers to remove tube and tire
- Examine tire for cause of flat
- Reinstall and reinflate
- (Discuss use of pumps)
- (Try different pump types) (Mention CO_2, etc.)

Optional:

- Examine hub and spokes for problems while wheel is off
- Repetition of install/remove wheels
- Installing rear wheels with horizontal dropouts
- Rear wheels with coaster brake

Day 3 – Cables Intro

Objectives:

- Fundamentals of cabled controls (brake and shift)
- New vocabulary
- Basic evaluation of brake and shifting function
- *Minor* adjustment methods for brake and shift

Vocabulary

- Cable
- Housing
- Barrel Adjuster
- Anchor bolt
- Noodle

Other types of non-cabled controls:

- Wireless shifting
- Hydraulic brakes (why fluid?)

Brakes

How to Evaluate / How They Work

- Length of pull on lever
- Spring return (why does it return?)
- Following the cables/housing
- Pull the brake level and watch at pad/wheel interface:
    - Watch where the pad lands on the rim (both sides)
    - How much space when not pulling lever?
    - How does everything move as you pull and release

Manipulation Exercises

- Disconnect brake, test the movement by hand
- Reattach brake noodle
- Experiment by adjusting lever's barrel adjuster
    - Unscrew adjuster, observe, spin wheel

Shifting

How to Evaluate / How It Works

- Follow the cables/housing, see all places it runs
- Where does the housing exist, where is it bare cable?
- Pedal the drivetrain, manipulate the shifters
- Does it shift well, does the chain shift with low effort
- How does the shifter "feel"?
- Feel cable tension in high gear vs. low gear

Manipulation Exercises

- Locate barrel adjusters (how many are there?)
- If poor shifting, try to fix by adjusting cable tension on adjusters
- Readjust to be out of tune, then ask someone else to fix it
- (repeat)

Instructor Visits Each Station

- Which barrel adjusters found?
- Turning barrel adjusters has what result for (shifting, brakes)?
    - Makes brake/derailleur move in which direction?
    - Cable gets more/less taught?
- Adding lube to improve cable glide
- Cleaning of shifter for better performance
- Replacing a brake cable

APPENDIX 6: BIKE-CHECK REPORT CARD

This handout can be sent home in advance of program to help ensure that bikes are checked.

ABC Quick Check Report

Student name: _____

Please check your bike with your parent:

- *If the item looks okay, put a ✓ under "Works great!"*
- *If something needs adjustment or repair, put a ✓ under "Needs help."*
- *Explain what repair is needed under "Explanation."*

Return completed form to your teacher.

	Works great!	***Needs help***	***Explanation***
"A" is for air			
"B" is for brakes			
"C" is for chain/crankset/cassette			
"Q" is for quick release			
"Check" is for checking the whole bike			
Anything else?			

APPENDIX 7: LEGAL OR NOT

Legal or Not Cheat Sheet

Note: This information also appears on the back of the "Legal or Not" posters, which are part of 15-poster set used in middle schools and high schools.

Posters 9 and 10 (of 15). Not Legal. Always ride WITH traffic, not against it, even in a designated bike lane or on sidewalks. (Yes, it is legal to ride on sidewalks unless it is designated a dismount zone.)
66% (in FoCo and nationwide) of all bike-car collisions result from cyclists riding the wrong way/going against the normal flow of traffic even on the sidewalk.
Also…her helmet is not fitted properly and would not protect her forehead in a crash. Make sure your helmet fits right!

Poster 11 (of 15). Legal. You may ride two abreast in a designated bicycle lane. These "sharrows" designate the lane for cyclists as well as motor vehicles. Courtesy would warrant that the cyclists ride single file to allow for motorists to pass, especially if the cyclists are moseying. Sometimes it's more important to be courteous to generate good will toward cyclists than to be legal and righteous.

Poster 12 (of 15). It is **legal** to take the lane in a roundabout. You may also ride on the sidewalk (except in dismount zones). The perception of two or three people riding side by side in a roundabout may be that the cyclists are being obnoxious, but it is actually safer and quicker. Safer because cars won't even consider trying to pass and quicker because two or three cyclists riding single file just take longer to get through the roundabout.

Poster 13 (of 15). Legal. You may ride two abreast if you are not impeding the normal flow of traffic. HOWEVER – the perception to motorists can be a negative one. It is just plain courteous to single up if possible and let vehicles pass easily.

Poster 14 (of 15). Legal for the cyclists. They are riding as far to the right as they feel safe. You may not see it well in the photo, but there is gravel/debris on the roadway, and cyclists are not expected to ride through hazards. HOWEVER – the motorist's perception may be that the cyclists are hogging the road and should ALWAYS use the shoulder. That's why we are here today — to help everyone learn the proper rules.

NOT Legal for the car. Motor vehicles must allow at least 3 feet between the vehicle and the bicycle (from bike's handlebar to the vehicle's side mirror) to avoid blowing the bicyclist off the road. This is a safety issue first and foremost. Cyclists can be pulled into the slipstream of a truck very easily, or the cyclist (or motorist for that matter) may swerve to miss something, which could cause a collision.

Poster 15 (of 15). The cyclists **ARE legal** because they are riding single file and as far to the right as they feel is safe. Cyclists determine how far to the right they will ride and still feel safe. It is a very vague definition, but it's all we've got.

The trucks are **also legal** crossing the double yellow line in order to pass the cyclists safely. Motor vehicles must allow at least 3 feet between their vehicle and the cyclist.

APPENDIX 8: TRANSFORT BUS BIKE RACK DETAILED INSTRUCTIONS

Introduction

Transfort is a department of the City of Fort Collins, so you could say that the city runs the buses. FLEX is also operated by Transfort but is a regional collaboration.

The racks we are learning about are not necessarily specific to Transfort — you will find them all over the nation.

Ask students...

- Do they know what buses run near this school/location?
- How much does the bus cost?
- Where do you find bus info (Transfort app or phone # on sign)
- Can you take your bike with you?

Vehicles on Transfort

You can take human- and electric-powered bicycles on Transfort, subject to some of the restrictions we will mention. Combustion-engine (gas) bikes and devices are not allowed.

Skateboards (same rules about power type) are allowed but must be kept with you, either held or under your seat, not blocking walkways/passengers.

Scooters (same power rules) are allowed, with the same restrictions. They must be folded and stay folded on board.

Non-folding scooters are not allowed. SPIN (bike/scooter share program) scooters are not allowed.

Space for bikes is limited, as follows. It is first-come, first-served, so if there is no space, then you cannot bring your bike.

- Most buses – 3 bikes using the tray on the FRONT of the bus
- MAX buses may *instead* have 4 inside racks, 2 on the floor, 2 hanging

Specifics

Any of these items must be either human-powered or electric, no combustion-type engines allowed. Bicycles must weigh less than 55 pounds, which may exclude many e-bikes. SPIN bikes are not allowed. Only two-wheeled bikes are accommodated.

Accessories which may block the driver's view or be ejected or otherwise hazardous must be removed upon stowing a bike.

Cue/Clue Sheet for Teaching...

- Where's the closest route? How much does it cost?
- Can you take your skateboard/bike?
- Can you get to Boulder or Denver by bus?

Bike Rules

- 55 pounds or less
- Electric- or human-powered, no combustion engines

- First-come, first served basis *only*
- Discuss MAX configuration

Using the Tray Rack – All transit buses have 3-tray rack

- Start with rack in stowed position
- Demonstrate once
- Follow instruction 1…as labeled on the rack
- Reminder – plan where you stand before lowering it
- Good lifting – use fork and seat tube
- Fill the tray closest to the window first
- Loading usually done by lift and drop, but can be "rolled" into tray
- Always put the rack up (stow) if you are the last person

Limitations

- Long-wheelbase bikes may not fit – trail bikes, downhill, very large sizes
- Fatter tire (Plus and Fat) won't fit either

Increasing difficulty

- Have students use a blocked inner tray for either load or remove

Using the Hanging Bike Rack

Emphasize how cramped and stressful it will be. Teach and practice two-step process:

1. Rolling slowly to pop up into wheelie and controlling bike movement with rear brake
2. Use knee/thigh on seat to lift most of the weight; must be balanced well enough to "wag" the front wheel to hook the hook

Additional Skills

If you need to consume more time, consider teaching these skills, perhaps give the students a choice:

- Leaning a bike against a wall
- Which side of the bike to lay on the ground
- Part name vocabulary
- Bustang and FLEX if not discussed already