



Cycling Skills for Children

Bicycling 123
Youth Cycling Clinic



"**Bicycling 123**" is a fairly new program that the League of American Bicyclists developed in coordination with the National Bicycle Dealers Association (NBDA), and released at the Interbike exposition in September, 2009. The program is designed to work in partnership between the League and local bike shops to provide basic handling and traffic skills instruction to children as well as new and returning adult riders.

The core of the Youth program is the **Cycling Skills for Children** clinic. This is a fairly straightforward class, suitable for children of nearly all ages, that focuses on bike handling and basic traffic skills, especially on the behaviors that most often get young cyclists hurt or into trouble. Cycling Skills Clinic is a bike rodeo format, but we still use a lot of the skills and methods taught in the League's more advanced traffic classes. A really neat feature is that the clinic is almost wholly hands-on with the bikes, outside, with a minimal amount of lining them up for a lecture. The kids really enjoy the skill drills, and it's been a good tool to help get parents involved and get them "on message" as well. Done right, this is a very high-energy, fun course for all participants.

"Bicycle Rodeos" have been a popular medium to deliver key teaching points in bike safety for some time now, since the publication of John Williams' and Dan Burden's handbook, *The Guide to Bicycle Rodeos*, (Outdoor Empire Publishing, Inc., Seattle, WA, (1987)) originally published by the Adventure Cycling Association. A key advantage of the bike rodeo format is that it allows you to deliver key teaching points to a large number of students in a relatively short time and allows for the use of a secure teaching environment such as a closed parking lot or gymnasium floor. However, bicycle rodeos have significant drawbacks in that they require a large number of volunteers to support the various teaching stations, the experience level of volunteer trainers is often inconsistent, the teaching stations often do not reflect traffic conditions that the students may face when riding on their own or with others, and that the students often are unable to translate the concepts learned on chalked lines in a parking lot to actual conditions on the streets or sidewalks.

The key feature of the Cycling Skills for Children clinic is that each station in the Clinic is aimed at a particular type of behavior which commonly cause child cyclists to get into crashes or collisions. For example, the leading causes of traffic deaths for young cyclists are 1) riding out of a driveway without looking or yielding to traffic on the street¹; 2) riding the wrong way, against the flow of traffic, 3) turning or swerving left without scanning behind for overtaking traffic, and 4) crashes at intersections due to disobeying traffic signals or failure to yield to crossing traffic. Additionally, the vast majority of children's non-fatal crashes arise from simply falling off the bike, or running into a road surface hazard or a fixed object. The Cycling Skills for Children Clinic addresses these issues by starting with a focus on a safe, functional bicycle and proper helmet wear, basic bicycle handling skills to reduce the chances of a fall or single-rider crash, by teaching correct traffic skills, specifically entering the roadway, where to ride, obedience to traffic signs and signals, and negotiating left and right turns as well as straight-through passage at intersection. Each skill is practiced a minimum of three successful repetitions in order to form good riding habits. Finally the Clinic allows practice under supervision in simulated traffic to allow the kids to integrate what they have learned at each station in the clinic.

¹ 35% of child cyclist fatalities occur at the end of their own driveways due to driveway rideouts.

Cycling Skills for Children:

While the clinic format is flexible in terms of the ages of the children attending as well as the time and space available, every clinic includes at least four (4) basic stations. The first three stations serve preliminary functions to welcome the students and their parents and to complete some preliminary safety checks before the students proceed to the riding portions of the clinic. Station A serves as an administrative station to welcome students and their parents, serve as a registration station where a roster is compiled and parents complete any necessary waivers taking part in the clinic.



Volunteers collect registration forms at a Cycling Skills Clinic in Bentonville, AR, in October 2009.

Station B focuses on checking and fitting bike helmets to the riders. If a helmet give-away is included as part of the clinic, then that takes place at this station. Students have the sizing and fit of their helmets checked and adjusted (if necessary), and are taught how to properly wear the helmet.



Fitting helmets at a March 2010 clinic for the Cub Scout Bicycling Belt Badge.



Checking helmet fit – square and level on the head, 2 fingers above the eyebrows, and the chin straps forming a “V” just under the ears.

Station C is focused on checking bicycles for proper function, fit, and safety features. Given that many kids’ bikes are haphazardly stored and maintained, this station can require some substantial manning requirements. It’s almost always a good idea to have a trained bike mechanic assisting with or supervising this station as well as to have a basic set of bike tools and spare parts (spare inner tubes, patches, air pump) to perform needed fixes to make the bikes

rideable. Bikes used in the Clinic should at least pass the “ABC Quick-Check” (ensuring that tires are properly inflated, brakes are serviceable, the drive train (chain, cranks, and cassette working properly), quick releases are engaged and secure) as well as a quick check to ensure the bike is fitted to the child’s size.



Bike safety checks at the 2009 Bentonville Bike Rodeo.



Adjusting bikes at a March 2010 clinic for the Cub Scout Bicycling Belt Badge.

Handling Skills

After passing through Station C, students go to the first riding course layout -- focused on bike handling and control -- where we teach them the power-pedal start, how to smoothly stop, and to ride a straight line for at least 100 feet with no more than 18" of wobble. The second course layout teaches them to weave and avoid a set of obstacles in a 4-foot wide bike lane.

The Handling Skills Course teaches and reinforces a number of critical bike handling skills; that the child is able to:

1. Mount the bicycle;
2. Start smoothly from a complete stop using the “power pedal start”;
3. Ride 100 feet in a straight line with no more than 18 inches of wobble or weaving;
4. Come to a controlled stop using the bike’s brakes
5. Ride 100 feet inside a 4-foot-wide lane, avoiding 3 to 4 obstacles (represented by bath mats or similar marking) in the last half of the course, and again come to a controlled stop;
6. Make a 90-degree left and right turn within a 4-foot-wide traffic lane, scanning behind for following traffic and use the appropriate hand signal for turning; and
7. Ride a figure-8 course within a 10-foot diameter circle and a 4-foot traffic lane, and yield right of way to other riders approaching from the right.

Station 1 and 2, (1) Straight-line riding and (2) the Avoidance Weave, are located together and usually combined as an out-and-back drill; the rider first rides the Straight Line course at number 1 to the end, then returns to the start point riding on Course No. 2.



This is the Handling Skills course laid out for the 2010 Bentonville Bike Rodeo. This layout requires an open, flat space approximately 120' long by 80' wide in order to place all the layouts together. From right to left, you can see the course for the 100' Straight Line Riding; the 4'-wide bike lane with the Avoidance Weave (both mats simulate the obstacles or road hazards); the Scan-Signal-Turn layout, and the Figure-8 course in the distance. For most bike rodeos aimed at younger students, or for a limited amount of time such as a 45-minute class period, this layout can accommodate a class of 30 to 40 students within the class period. Once the students have mastered this course, the additional layouts (Traffic Skills and Traffic Complexity) can be introduced in subsequent class periods.

A "Parking Lot" is established at the start of each course, and children line up here to take their turn riding through the various course layouts. Once they have completed one passage through the drill, the students return to the "parking lot" to await another turn at the drill. "Success" is measured by the student's ability to successfully complete the drill at least three (3) times. Once the student has completed one station, his or her scorecard is marked to that effect and the student moves to the parking lot set up for the following drill.



"Parking Lot" established to await your turn to ride the next drill. Here, the volunteer instructor is marking the rider's score card.



Riders start the handling skills course by demonstrating they can ride 100 feet in a straight line with no more than 18 inches of wobble, as demonstrated by their ability to stay within the lane lines, marked 18 inches apart. They start off with the "power pedal start," and finish by coming to a controlled stop at the end of the lane.



100 feet without wobbling can be a long way for young folks!

Once they have completed the first trip down the course, they return to the start point by riding a 4-foot-wide lane, approximately the same width as a sidewalk or bike lane. At the end of this lane are three to four obstacles which the riders must avoid.



Straight-line riding and avoidance weave course at the Bentonville Bike Rodeo (2009 at left, 2010 at right)

Next, they move to Station 3, Scan-Signal-Turn, where they learn to scan behind, make the proper turn signal, and then turn for both a left and right turn. Power-pedal starts and a smooth stop are also expected on this course.



In the Scan-Signal-Turn drill, riders go 50 feet in a straight line, then must scan behind for following traffic, signal their turn, and then make a 90 degree turn, first left, then right. The lane is 4 feet wide to encourage straight-line riding with a minimum of wobbling or weaving.



Signaling a right turn. Note: I teach this method to kids because this is an intuitive signal, and is more easily understood by our local motorists. While Arkansas law requires that all signals be given with the left hand, this fact is not stressed in drivers training these days. Pointing in the direction you intend to go is easier to teach, and is more readily understood by other drivers and cyclists.

Turning and Yielding: The fourth and last station in handling skills is a figure-8 diagram where they start putting things together while riding that course, and as you feed a few more riders into the figure 8, they learn about taking turns, and this concept called "right of way." This makes a good stopping point for smaller kids, or if you have only limited time. (You don't have to teach the whole course in a block, but can tailor it a good bit to your students' ages and needs.)

Each rider enters the figure-8 course and rides three complete laps, then returns to the parking lot for this drill. Once each rider has had a chance to ride the course solo, each starts the course again, this time with a second and third rider following them at a small interval. Now, each rider in the figure-8 must stop and yield to any rider approaching him on the right at the intersection in the center of the "8". Once each rider has had a chance to "yield" 2 or 3 times, he or she is told to exit the figure-8 and a new rider is sent in, there being 2-3 riders in the loop at any one time.



The Figure-8 drill gives the riders practice in turning and



And once another rider is added to the same layout, they

leaning the bike. The circles are 10 feet in diameter, requiring good balance and bike control to negotiate the turns.

learn to watch for other traffic and yield to the rider approaching from their right. This is the first concept of "right of way" and "sharing the road," which will be reinforced in the following skill drills.

Traffic Skills Course – Riding on the Street & Negotiating Intersections

The next step involves two additional layouts, and is focused on practicing what they learned in the handling part, and integrating that into traffic skills. We do that either by creating a short section of "street" that has a driveway, sidewalks, and a 4-way intersection with marked crosswalks and stop bars. Everything is drawn to actual scale, with 10-foot traffic lanes and 5-foot sidewalks. Here's where I make a split based on age: kids younger than 10 years old are taught to ride the sidewalks and cross the intersection pedestrian-style, walking their bikes through the crosswalk. Kids 10 and older are taught to ride the traffic lanes in the "street." The key point we drill here are Stop-at-the-Edge, riding on the right side of the street, obeying traffic signs, lane positioning, and turning right, left, and going straight through the intersection.

This layout also works well for the Safe Routes pedestrian skills practical exercise, if the school district should have liability concerns about using real streets.



For this drill, we use a flat parking lot approximately 120'x 80' wide, and we create a full scale simulated intersection with a 4-way stop, 5' sidewalks, and crosswalks. Students learn to enter the street from the driveway after checking for traffic, where to ride on the street so as to control the traffic lane, to obey stop signs, and to go straight through, turn left, and turn right at the intersection, and eventually re-enter the driveway. Children 10 years and older are taught to ride the street; those younger than 10 are taught to ride on the sidewalks, and to walk their bicycles across the crosswalk in order to cross the street. This same layout can be used to teach pedestrian crossing and street skills as well. With local police coordination, you can also block off an actual intersection to teach this session.



One group of riders (on right) yield to children making a pedestrian crossing via the crosswalk.

Volunteer riders cruise through the layout, adding a little realism by providing "traffic" for the students to interact with. Note the 10-foot (narrow) traffic lane, center-line striping, and the "sidewalk" striping.



(Speaking of real streets: A major problem with the traditional bike rodeo format is that kids don't translate well from chalk lines drawn in a parking lot to real pavement, sidewalks, and traffic signals. If you can negotiate to block off a real intersection to use for this drill, the kids will remember it a lot better.)

Again, each student should make three successful laps through the layout, doing a roadway entry, straight-through, right turn, and a left turn at the intersection, before proceeding to the next layout.

This layout tends to create some significant traffic jams if the majority of your students are very young (>10 years old), meaning that they are riding the "sidewalks" and making pedestrian crossings. For this reason I tend to focus heavily on the Handling Skills layout for the very young riders, and break them down into small, guided groups if we are going to send them through this course.

Traffic Complexity Course -- Riding Practice in Simulated Traffic



The Traffic Complexity layout allows students to practice riding in simulated traffic on an oval loop, where there is a driveway for entry into the course, a turnout to practice leaving and re-entering the roadway, an intersection for left turns, and scattered traffic signals and the occasional "pothole" to dodge. Students should ride at least three laps successfully, but are also allowed to keep riding should they wish in order to maintain a certain density of traffic for other riders.

Once students have mastered the Intersection layout, the Traffic Complexity Course gives them a chance to integrate and practice all the skills they learned in the first two courses in the Clinic.

The "Traffic Complexity" layout is an oval track, approximately 100 feet long with a 10-foot traffic lane, a driveway, a cross street, and a turnout, with the appropriate traffic signs. We start feeding riders into this layout and let them learn to "share the road" with other riders and actually interact with real traffic (e.g., each other). This station is designed so that the riders will have to make good decisions when faced with the complexity of the presence of other riders (drivers) on the road.

While negotiating this course, each rider will have to deal with the following situations on nearly every lap:

- Riding out from a driveway in mid-block;
- Making a right turn;
- Stopping at a stop sign;
- Scanning behind before moving, swerving, or turning left;
- Yielding to crossing traffic; and
- Avoiding road hazards that randomly appear in the traffic lane.

This is the last actual riding station, so we let them play in there until they've got the skills down pat, and until we need to clear folks out to make room for new riders.



In this station, the riders have a chance to practice all of the bike handling drills and basic intersection knowledge they learned in the first seven stations. It is designed so that a rider has to make good decisions while dealing with complexity. Volunteers watch for safe riding practices; if a student makes an egregious mistake there is a chance to take him (or her) off the course to a "hospital" station for a time-out, learning that mistakes in traffic can have consequences, before re-inserting them into the course to try again.



The turnout along one side of the course allows repeated practice in turning right into a driveway, and then re-entering the road at a Stop or Yield sign, forming good habits to avoid driveway rideouts. Students are randomly directed to take the turnout, while other "traffic" flows by.

Older children learn these lessons better when there is a consequence for making a mistake in traffic. If one of the riders doesn't scan or signal and turns or swerves in front of the volunteer or the other riders, you may choose to have them sit out a few rounds in the "H" hospital space. With

children in middle school or higher this becomes quite a game and you may want to have someone volunteer to be a “doctor” in the “hospital” to talk with the rider about the causes and results of bike crashes while the rider takes a “time out.”

Station D: Celebration



The annual Bentonville Bike Rodeo includes a certificate for those students completing all stations, and a parade around the town square.



Even the “Strider” and other running, or balance bikes are suitable for the Clinic, making this an appropriate class for children of almost any age where they can mount a bike.

Every child who participates in the Cycling Skills Clinic is a winner! Whatever you have to give out should be given to all riders. Make sure there is something for the parents as well. At a minimum each rider should get a certificate of participation with his/her name on it. This is a great chance to give your sponsors some recognition.

When each rider brings a completed report card they should get a certificate. Don't be too strict about having all the boxes checked on the report card. Use the name on the report card to complete the certificate and have someone in your organization sign and date it. If you have collected handouts and have bags, this is the time to give them out. Make a ceremony of the presentation of the certificate and the handouts. Get the parents involved and allow for photographs if the parents want them.

You should have someone taking photographs for publicity reasons. Make sure that you get photo releases if you intend to use the photo in a press release or future publications.

So that's what the Clinic looks like. We train to success, so that every student comes away a winner. Each student receives and carries a little report card through the whole clinic that gets checked and initialed at each station as either "Good Job!" or "Needs Work."

SAMPLE REPORT CARD		
Rider's Name _____		
Bike Handling	Great Job	Need Practice
Starting/Stopping/Straight Line	<input type="radio"/>	<input type="radio"/>
Dodging Hazards	<input type="radio"/>	<input type="radio"/>
Scanning, Signaling and Turning	<input type="radio"/>	<input type="radio"/>
Turning and Yielding	<input type="radio"/>	<input type="radio"/>
Advanced Skills	Great Job	Need Practice
Entering and Crossing the Road	<input type="radio"/>	<input type="radio"/>
Along the Road	<input type="radio"/>	<input type="radio"/>
Intersection	<input type="radio"/>	<input type="radio"/>
Thank you for riding in the _____ NAME		
_____ DATE Youth Skills class. This card will tell you		
those things you are can do well and those things you need		
to practice. Take it home and let an adult help you practice.		
		

Sample scorecard for the Cycling Skills Clinic. Note that there's no "pass" or "fail", simply if the child was able to successfully complete the drills, or if he or she needs a little more practice.

Course Setup

Logistically, you need three relatively flat paved areas about 120'x60', and several helpers (youth instructors) to man each of the various stations. I use one of those athletic field chalk line markers (acquired on eBay) and athletic field marking chalk. Alternatively you may use "pulverized lime" which you get at Home Depot or the farm co-op for about \$4.60 for a 40-pound bag. One problem with the pulverized lime is that it is often a "dirty" color which doesn't stand out well on the asphalt or parking lot pavement, and it is often damp, and does not flow well through the field marker. In a pinch, "Playground Sand" works well and flows better than damp lime.

We use the dry-line field marker instead of tennis balls or traffic cones because children need to see the solid lines in order to understand that they need to stay between them. Children perceive isolated markers like tennis ball halves and traffic cones as something to weave in and out of, or in between. Field marking chalk and pulverized lime have the advantage of high visibility against the parking lot, and the impermanence in that they are gone by the next rain, or blow away within the next few days. If you find yourself returning to the same parking lot time and again, you may wish to mark the corner dots of your parking lot layouts with an inconspicuous spot of paint in order to avoid having to measure off the distances every time. Once this guide points are established, all you have to do to set up a new course layout is to connect the dots with the chalk marker.

It takes about 2 bags (80 pounds) of chalk to lay out the entire course for both Handling Skills and the two Traffic Skills layouts if you're not real wasteful. Pulverized lime tends not to flow as easily (and easily dissolves if your parking lot surface is damp), and so takes a little more material to lay out the course.



The tools of the trade for setting up the riding layouts. In addition to the YI Instructor's Manual, you need a 100' steel tape measure to measure and lay out each station, sidewalk chalk for marking the corners of each layout, a dry-line athletic field marker for laying down the course lines, and a couple bags of athletic field marking chalk.



Marking the Course. It helps to have two people for this task. Use the steel tape to measure off the straight lines and mark the corners with sidewalk chalk, then one person helps mark the corners while the other lays down the chalk lines.

Who can teach? Basically, any LCI can teach the basic Cycling Skills Clinic, and this curriculum has been incorporated in the youth portion of the League's LCI training seminars since January 2009. "Master LCIs" can teach the Youth Instructor certification course to train and certify youth instructors to set up and teach the course on their own. Youth Instructors are taught the basics of how to fit helmets, and how & why they should be used, and to set up the Cycling Skills course and teach each station. They do not have to be active cyclists per se, but some familiarity with bikes will certainly help. YIs should be at least age 16; preferably older. Typically it's a 2 to 2.5-hour course for certification, with a little over an hour in the classroom, and another hour's practical exercise out in the parking lot working through each of the skills.

Youth Instructors who become League members (\$35/year) are eligible to purchase liability insurance through the League's insurance provider which covers them while they are teaching League material under the guidelines for their level of certification. (a bit cheaper than what they charge us LCIs, since the risk/exposure is a lot less... and our LCI insurance is pretty cheap, at \$25 per year.) YI's are authorized to teach only in a parking lot or a similar closed environment, like a blocked-off street. They may not take students out onto the open streets or roads; fully-qualified LCIs are trained to do that, but Youth and Skills Instructors are not.

Skills Instructors are people who have completed the Youth Instructor course, plus an extra two hours of training in teaching similar skills to adults. This program is aimed primarily at bike shop employees and volunteers in community education programs or advocacy groups. Their teaching focuses on the basic handling skills very much like those in the Traffic Skills 101 parking lot drills, basic helmet and bike fitting, and a simple "brown bag" commuter/utility riding course.

Both the YI and SI certification classes are taught by "Master LCIs," or LCI-M. Master LCIs are required to have at least two years' active experience teaching League classes to adults, and take an additional seminar in teaching both the Cycling Skills Clinic and the two instructor certification courses.

The main advantage of the Cycling Skills for Children clinic is that it's a nationally vetted and standardized course that focuses on key cycling and safety skills, it's adaptable to kids of all ages from the time they can balance on a bike until they're teen-agers, it's very portable, and can accommodate a large number of children in a limited amount of time... whereas courses like Safe Routes to School, Kids II, and Safe Routes for Kids are designed for ten class periods (or more)

over a couple weeks' time. At the Bentonville class in 2009, Preston and I with our Youth Instructor class students ran 87 kids through the full clinic in about 2 1/2 hours' time. In 2010, with additional help from the local LCIs and a larger class of Youth Instructors, we ran approximately 250 student through in a 3-hour period.

The course is modular, with the three separate parking lot layouts, Handling Skills, Intersection & Traffic Skills, and Traffic Complexity. For the younger riders, simply focusing on the four preparatory stations (A, B, C, and D) and the Handling Skills course provide a firm grounding in basic bike skills, and can be carried out for 30 to 40 students within a single 45 to 60-minute class period. Likewise, for older students, the Traffic Skills and Traffic Complexity courses can each be fitted into a following class period, or the whole clinic can be carried out within approximately 2 to 3 hours for a student to make it through all the stations.

The Youth Instructor program is a good and inexpensive way to quickly build a core of bike expertise and bike teachers in a school or school district, PTA, or community club, with the ability to take advantage of the LAB liability insurance program as well.

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