



SMART CYCLING



Bicycling Skills 123 Skills Instructor Manual

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INTRODUCTION



AGENDA FOR SKILLS INSTRUCTORS:

0:00 - 0:15	Introductions
0:15 - 0:30	Overview of classes and materials
0:30 - 1:00	Teaching children
1:00 - 2:00	Practice teaching: youth skills
2:00 - 2:30	Teaching adults: concepts and techniques
2:30 - 3:00	Practice teaching: Cycling Skills for Commuters
3:00 - 3:45	Practice teaching: Cycling Skills for Adults
3:45 - 4:00	Graduation

New cyclists or those coming back to cycling after years off the bike frequently are uncomfortable with basic bicycle handling skills like signaling, turning and stopping. Before they can feel comfortable riding on trails or in traffic they can benefit from practice on their bicycle in a relatively quiet setting, like a parking lot.

These basic handling drills are designed to allow a cyclist to feel more confident handling their bicycle.

and leaning the bicycle. We want cyclists to become comfortable leaning into a turn so they are competent to navigate in urban streets.

Use the “parking lot” for cyclists that are waiting their turn. If you use the parking lot as shown in the diagram, the waiting cyclists can observe the other cyclists and become familiar with the exercise. The “parking lot” should be set up in the center of the layout.

tandems and adult tricycles, but most of the discussion will refer to a common diamond-frame bicycle with derailleurs and hand brakes.

For beginners, do not raise the saddle to the normal riding position to begin. Allow the new or returning rider to have the saddle low enough so that it is comfortable for them to place their feet on the ground when coming to a stop. Raising the saddle and having the rider get off the saddle at a stop will come later.

Layout:

All of the drills use the same layout, an oval that is 120 feet long by 20 feet wide. In parking lot terms that is 12 or 13 spaces long by two spaces wide. The layout and position of the instructors for all of these drills are diagrammed on page 3. There are two reasons we use this layout.

1. Most states require signaling for 100 feet before a turn. We want cyclists to become familiar with visualizing that distance.
2. To make a U-turn in 20 feet requires practice counter-steering

Repetitions

All cyclists should be given a chance to do each exercise at least three times. One of our objectives is to help the riders succeed in enjoying the ride. Practicing these drills at least three times will provide most cyclists with obvious progress towards getting comfortable on their bicycle. Remind them they should continue to practice these skills on their own.

Bicycles

Any type of bicycle can be used in these drills, including recumbents,

Pedals

Flat pedals are best for these beginning exercises. New or returning cyclists may have difficulty with either toe clips or clipless pedals. Let them get used to the bike before introducing more advanced pedals.

If a bicycle has a backpedaling (coaster) brake, it may be easiest for the cyclist to switch feet on the pedals to restart in the “power pedal” position after stopping. Clipless pedals, or toe clips and straps, are not practical with coaster brakes.

SKILLS INSTRUCTOR - COURSE 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.

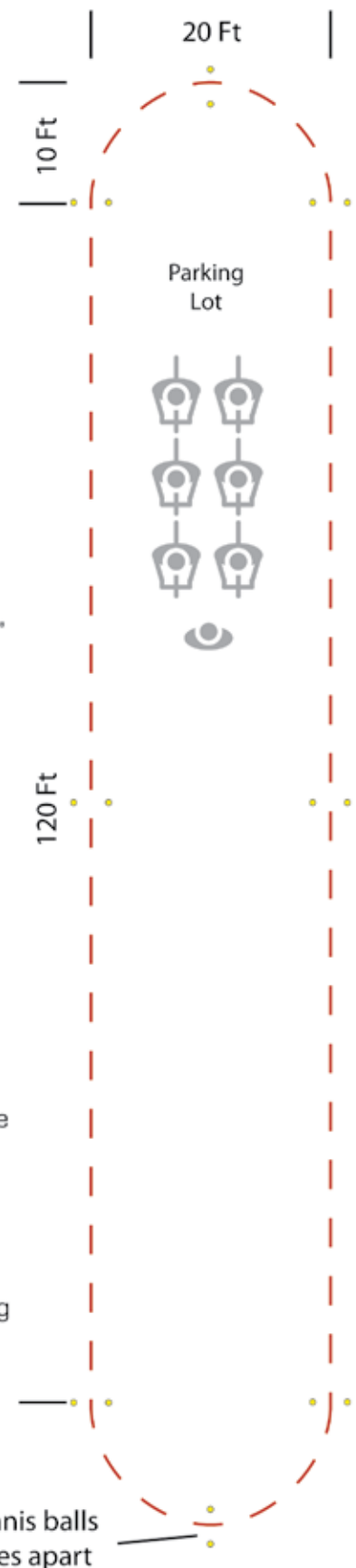
MOUNTING AND DISMOUNTING:

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-existent 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.



MOUNTING & DISMOUNTING

There are some options for riders who have difficulty mounting a bicycle by swinging a leg over the back of the saddle. Obviously a bicycle with a step-through frame or crank forward design is the first choice, but most people can learn to

mount a bicycle with a top tube by leaning it over.

Have the riders stand beside their bicycles. Give them the following instructions after demonstrating the motions:

Place the right hand on the saddle and reach across the bicycle with the

left hand to grab the right end of the handlebar. Lean the bike towards you until you can easily step over the frame and then start raising the bicycle and shifting your feet until you are astride the frame. You may have to make two steps to get all the way over the frame.

STARTING & STOPPING

Students will learn to:

- Start smoothly and with confidence
- Stop smoothly and quickly
- Shift gears in preparation for starting and stopping.

Why we do this drill:

Starting and stopping smoothly and without wobbling helps a cyclist maintain control in traffic and presents an appearance of competence to motorists. Using the bicycle's gearing effectively improves acceleration. The techniques used in this drill will help the cyclist start and get across intersections quickly and smoothly.

How we do this drill:

Starting Gear: Help the riders find a comfortable starting gear by first having them start in the highest gear then shifting to the lowest for the next start and finally shifting to somewhere in the middle to find a gear that allows them to push down and lift themselves onto the saddle.

Power Pedal Position: Show the proper starting position for the pedal. Allow the riders to use either foot but place that pedal at a position just past the top of the circle where all the weight can be used to step down and get started.

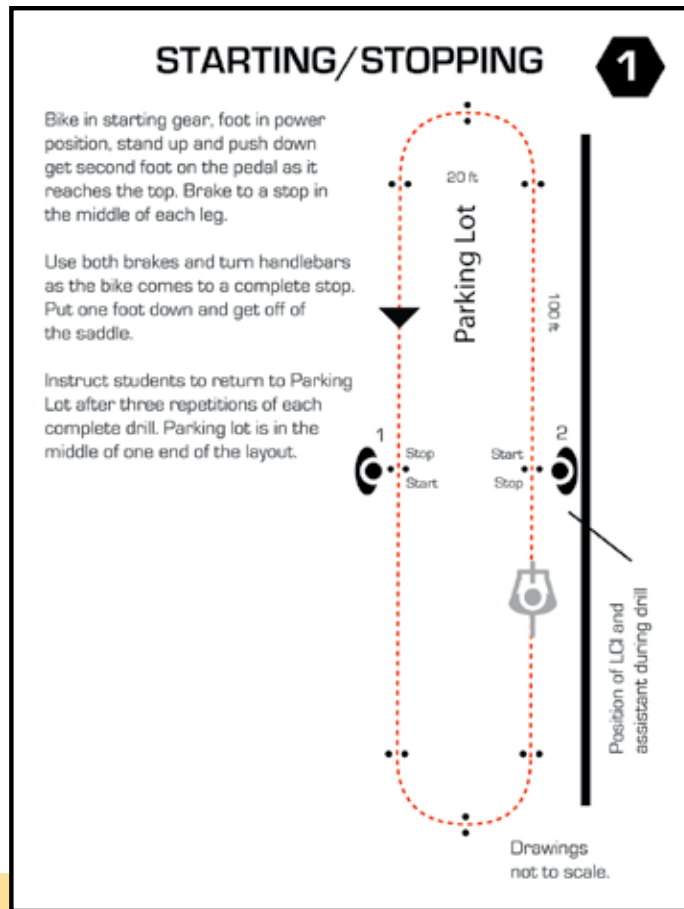


Leaning into the Turn: To make a smooth turn in a 20-foot space requires leaning the bicycle and the body. This may be one of the hardest lessons for a novice rider to learn, so be patient. Remind your students that they actually must counter-steer and lean into the turn before they can successfully turn in 20 feet. In the beginning students may try to steer in the direction that they wish to go and lean the wrong way.

Demonstrate the drill

The instructor should demonstrate this drill at slow speeds indicating the proper action for the items for which the students will be judged.

It may be helpful to demonstrate incorrect techniques and why they are inefficient and hazardous (cowboy mount/dismount, with the cyclist standing next to the bicycle when stopped; tricycle start/stop sitting on the saddle with both feet on the ground; scooter start, using one foot to push off instead of pedaling).



EXERCISE

Have the cyclists line up inside the oval in the “parking lot.” Each cyclist should start and stop twice on each loop of the oval. The next cyclist should not start until the first cyclist has turned at the end and is on the far side of the oval. You will normally be able to put three to four cyclists in the oval at the same time. The instructor should be looking for competence in the following items:

1. Cyclist standing over the bicycle ahead of the saddle, not on the saddle.
2. Pedal in power position: The pedal should be in the 2 o'clock position (viewed from the right side of the bike).
3. Power stroke: The pedal should be pushed down firmly as the cyclists rises onto the saddle.
4. Continuous rotation: The second foot should join the pedal as it reaches the top of the circle and continue with the pedal. Clicking into clip-in pedals or slipping the feet into toe clips should wait until the cyclist has gained momentum or cleared the intersection.
5. Leaning into the turn
6. Braking with both hands: Both hands should be used to brake the bicycle to a complete stop prior to placing a foot down. If the cyclist leaves the saddle to place a foot down before the bicycle has come to a complete stop the back tire is likely to lose traction and skid or lift off the ground.
7. Handlebar turn: As the bicycle comes to a complete stop, the handlebars should be turned slightly away from the foot that will be placed on the ground. This action will cause the bicycle to lean slightly to the side where the foot is to be on the ground.
8. Pedal repositioned: The cyclist should automatically reposition the pedal to the power position as soon as the stop is completed.



STRAIGHT LINE/ SHIFTING GEARS

The student will learn:

- How to ride in a straight line a comfortable distance from a curb or other line.
- How to focus far enough ahead to recognize important situations.
- What simple gear shifting feels like.

Students who are unable to demonstrate competence in this or later drills should not take part in a road ride until they do.

Why we do this drill:

Being able to ride a straight line while maintaining a comfortable

distance from the curb is critical to the practice of vehicular cycling; it provides a predictable motion, keeps the cyclist visible to motorists, and enhances the appearance of cycling competency.

How we do this drill:

Remind students to keep their eyes focused a “1,000 yards ahead” instead of on the ground just in front of the front wheel. Point out that a higher cadence provides the same power without strain — the leg is a pendulum when walking, with a natural cadence, but when pedaling it is the connecting rod in an engine and can easily go faster.

New or returning riders may have difficulty reaching for the shift lever or brake lever. Instruct students to minimize braking during this exercise, to avoid loss of control.

Demonstrate the drill:

Change the direction of rotation for this drill. Start out of the parking lot on the other side of the course. To demonstrate this drill, the instructor should ride slowly and smoothly down the course while maintaining a “head up” posture. The instructor should practice maintaining a proper cadence while shifting up and down.

EXERCISE

Have the students line up inside the oval in the “parking lot.” Each student should demonstrate the proper starting technique and move quickly and smoothly around the oval. The next student can start when the previous student nears the end of the oval. It is possible to get at least six cyclists in the oval at one time. Each student should be instructed to complete three loops of the oval and then return to the “parking lot”

The instructor will be looking for competence in the following items:

1. Starting technique from the first drill
2. Holding a straight line with a “head up” posture
3. Starting in a low gear and shifting up while accelerating.
4. Smooth cadence with even strokes; proper cadence once having accelerated
5. Shifting down before stopping — before braking, then after some practice, while braking.
6. Stopping technique from the first drill, including turning the handlebar.

A single-speed or fixed gear bicycle will not allow practice in shifting. If a student has one, make a teachable moment of showing standing for power when starting and choosing a drive ratio that provides a good cadence on level ground. You can demonstrate these points on a geared bike by not shifting.

STRAIGHT LINE/GEARS

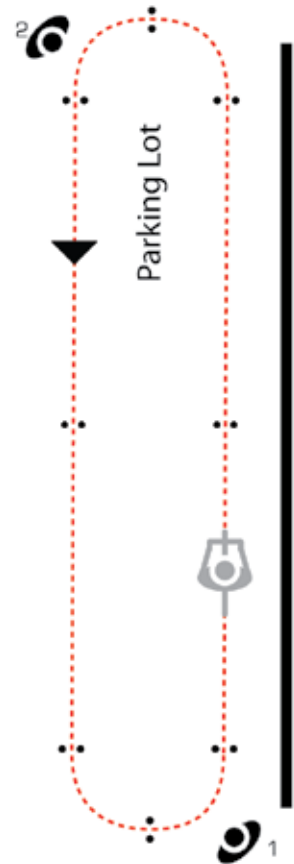
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Remind students that they should be looking long to stay in a straight line.

Have the group ride in a loop shifting up and down one or two gears each leg.

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

Each student should go through the entire loop three times and return to the parking lot.



SCAN DRILL

The student will learn to:

Turn and scan behind both to the left and to the right while maintaining a straight line of travel.

Why we do this drill:

Many crashes between cyclists and motorists, and between cyclists and other cyclists, are caused by a

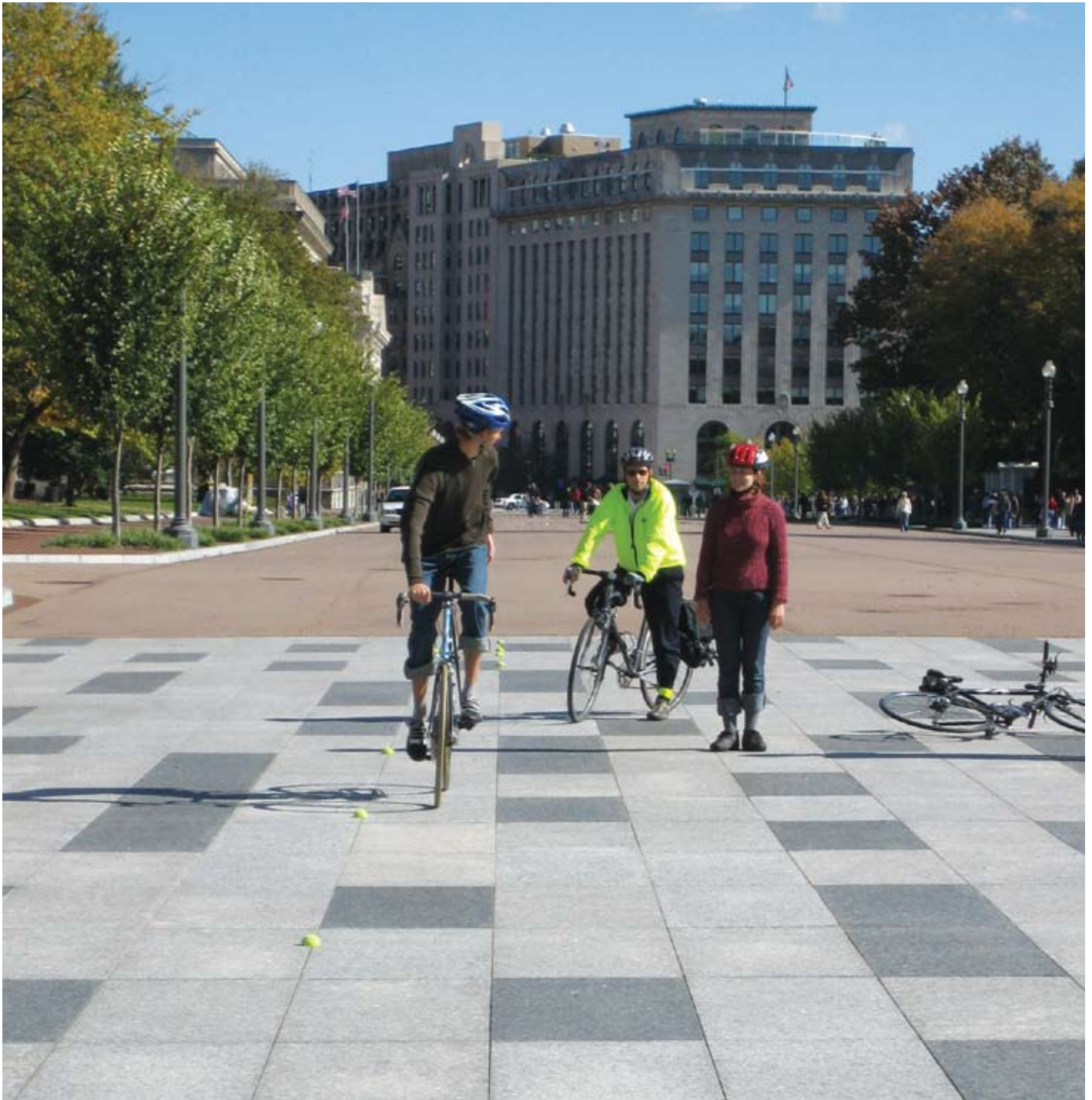
cyclist swerving or turning left without checking for traffic approaching from behind. The scan maneuver is the one of the most basic maneuvers available to cyclists to avoid crashes.

How we do this drill:

Use the following instructions while demonstrating the various

methods of turning to scan:

For many people simply turning the head to look over the shoulder will not be possible. Instead you should try to scan by tucking your chin into your shoulder and look past your shoulder. If that is uncomfortable for you or you feel you need to get a better look, remove your left hand from the

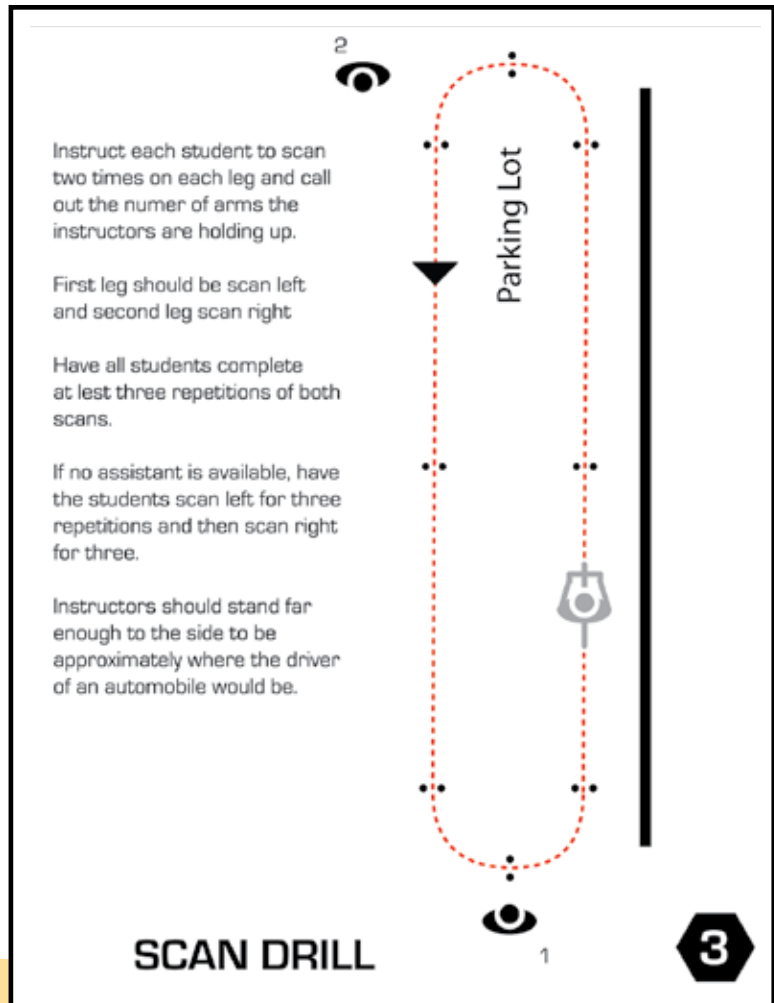


handlebars and placing it on the hip or the back of the saddle turn the upper body to look behind. This last position is a great way to get the attention of the following drivers.

Demonstrate the drill:

To demonstrate this drill, the instructor should begin by showing different methods of scanning. This should be done with the instructor on the ground facing away from the students and looking back so the students can visualize the amount of turn necessary to get both eyes looking back.

The instructor should then ride smoothly through the layout, demonstrating the proper head and body movements. The instructor should demonstrate at least two different ways of doing a proper scan. To be able to demonstrate this with competence it is beneficial for the instructor to practice the day before the class.



EXERCISE

The instructor should stand outside the end of the oval at the midpoint. Instruct the cyclists that they should ride the oval while scanning over the left shoulder three times and calling out how many hands the instructor has raised. After three times around, scanning over the left shoulder, the instructor should change the direction of travel around the course and have the students scan over the right shoulder three times.

The instructor should evaluate the cyclist on the following items:

1. Turning enough to identify the number of hands held up, generally that means that two eyes will be visible to the instructor.
2. Maintaining a straight line
3. If swerving, how well does the cyclist control and recover from the swerve?

BICYCLES: Any type of bicycle can be used in this drill including recumbents and tricycles, but the techniques can be very different. Many recumbent bicycles and tricycles do not allow the head to be turned far enough to look directly back. Students riding them must demonstrate competence through a combination of a scan using a rear-view mirror to look directly back, and a turn of the head to check to the side. The student may also lean forward from the waist and then attempt to scan by turning to look back.

SIGNALLING



The student will learn to:

- Recognize the hand signals that are lawful in the state
- Ride with one hand while signaling and turning properly.

Why we do this drill:

All states require use of signals for lane changes, turns and stopping. Some states allow the use of the right hand extended straight out to signal a right turn. Some states do not require signaling if removing the hands from the handlebars to signal would endanger the cyclist. Obviously, it is not desirable to make a hand signal when both hands must be on the handlebars for good steering control, or to use the handbrakes.

What is important is to obey the spirit of the law. Remember, the purpose of signaling is communication with other operators. For a cyclist, usually traveling slower than other

traffic, a turn signal is most important to indicate the desire to make a lane change and to obtain the cooperation of a motorist to allow the cyclist to merge or turn safely. The cyclist makes this signal before changing lanes or turning, but discontinues it when better control is needed during the maneuver itself. In close quarters, a cyclist can also signal with a turn of the head.

The most effective right-turn signal is made with the right hand. Motor vehicles have had turn signals since the 1950s; many motorists do not understand the antiquated hand-over-head right turn signal. A stop signal is most useful to indicate to a following motorist that it is unsafe to pass. A stop signal can also be effectively employed with the right hand if the motorist is behind the cyclist on the right (for example, if the cyclist is waiting near the center of the street to turn left).

How we do this drill:

The instructor should stand in front of the students facing away and have them mimic the proper signals. Explain that each rider should scan early, signal and get both hands back on the handlebars before the center markers. Then scan again before making the turn.

Demonstrate the drill:

To demonstrate this drill, the instructor should ride slowly and smoothly through the layout, displaying the proper scanning maneuver, then the proper hand signal for a count of two, and then placing both hands on the handlebars near the middle of the oval. A second scan can be made before the turn.

EXERCISE

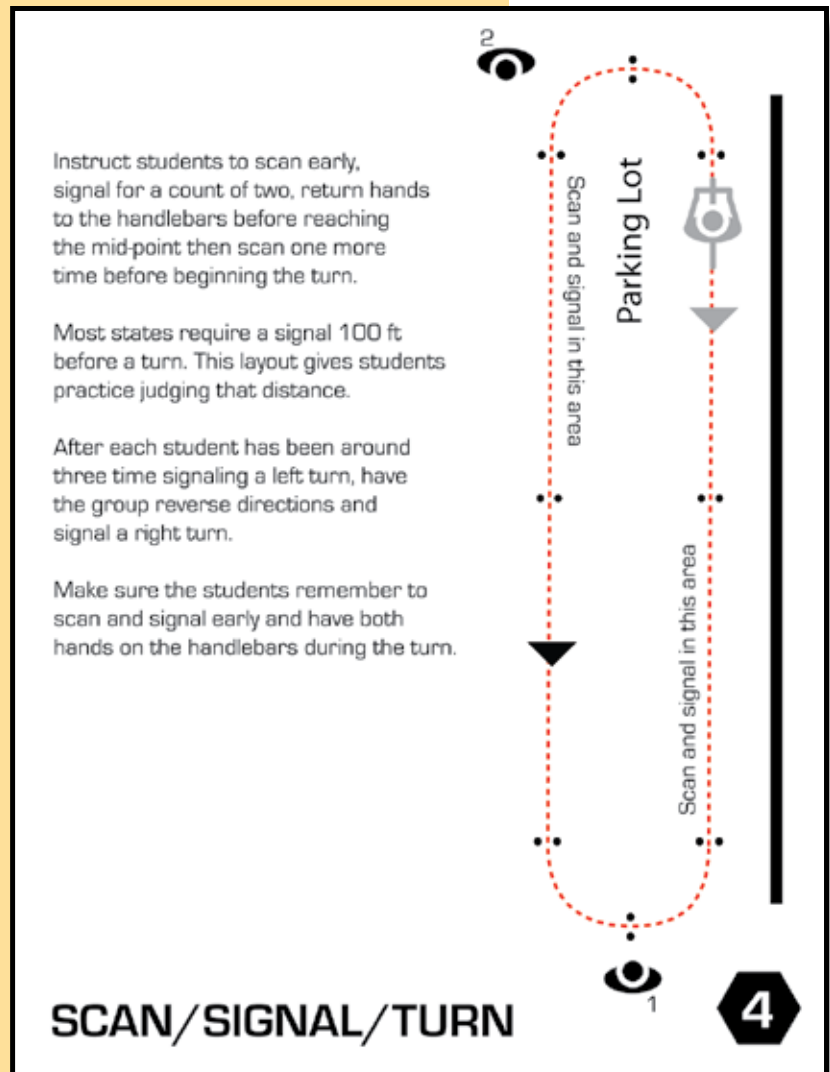
Practicing a proper start, each student should ride into the oval and demonstrate the proper handling skill to scan, then signal, while riding with one hand on the handlebar.

The instructor should give the following directions: Riding through the oval, you should scan early, signal for a count of two and put your hand back on the handlebars before you reach the mid-point. You should scan one more time before you reach the turn but do not take your hand off the handlebars to signal a second time. Do not signal during the turn.

After each cyclist has been around the oval three times, have them stop in the parking lot. Then reverse the direction of travel and practice scanning, signaling and turning the other way.

The instructor will be looking for competence in the following items:

- Starting technique from the first drill
- Holding a straight line at a comfortable distance from the curb while scanning as described in the Scan Drill
- Beginning the signal early enough and holding the signal for a full count of two
- Returning the signaling hand to the handlebar with sufficient time to make the turn
- Making a smooth turn
- Stopping technique as described in the first drill.



CONCLUSION

Review

Review all of the steps leading up to the final exercise. Begin with mounting and dismounting, starting and stopping, finding the proper starting gear, riding in a straight line, shifting, scanning and finally signaling a turn. Help the students recognize how much progress they have made and ask them how they feel on the bike.

Have each student provide one thing they would “take away” from this series of exercises.

Practice

The instructor should remind each rider that the short amount of time they have spent riding and practicing these drills has only been a start to enjoying their bicycle. Encourage them to practice the drills in a parking lot near their home.

Remind them of the additional programs available to learn more about riding in traffic and bicycle maintenance that are available at the shop and through the League Cycling Instructors at the shop or in the community.

Graduation

Present each rider with a simple certificate of completion and possibly a one-time discount coupon from your store for accessories.



LEAGUE OF AMERICAN BICYCLISTS

1612 K Street NW Suite 800 Washington DC 20006

ph: 202-822-1333 fax: 202-822-1334 e-mail: bikeleague@bikeleague.org www.bikeleague.org

Special thanks to the National Bicycle Dealers Association for making this possible, and to the shops that hosted three pilot programs: Mike and Claudia Nix at Liberty Bicycles in Asheville, N.C.; Hill Abell at the Bicycle Sport Shop in Austin, Texas and Mary Cash at Cooper's Bicycle Center in Stillwater, Okla.

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