A program of the American Bicycling Education Association

CyclingSavvy
EMPOWERMENT FOR UNLIMITED TRAVEL

Essentials Short Course

CyclingSavvy offers the Essentials Short Course, including illustrative videos, for free on line.
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Pre-ride ABCs

CyclingSavvy
EMPOWERMENT FOR UNLIMITED TRAVEL
Essentials Short Course 1A

Before you ride, it's a good idea to look a few things over. This easy-to-remember formula — the ABC Quick Check— was created by Gene Miller, a Police Cycling Instructor and founder of the International Police Mountain Bike Association (IPMBA). It's been used in cycling courses ever since.

A is for Air

Bike tires lose air over time. The higher the pressure, the more often they need to be pumped. Temperature swings can also cause tires to deflate.

A pinch check with your fingers will tell you if the tire is getting dangerously soft. A soft tire is vulnerable to pinch flats. It can also roll off the rim in a sharp turn and cause you to crash.

For a high-pressure tire, a pinch check may not detect pressures 30 to 40 lbs below the recommended PSI. Sub-optimal tire pressure isn't dangerous, but it can be a drag.

Find the recommended PSI stamped on the tire's sidewall.

There are two types of valves for bike tubes: Presta (left) and Schrader (right). Presta valves are typically found on tubes for higher pressure tires. They require a compatible pump, or an adapter.

B is for Brakes

Before you start, it's a good idea to make sure you can stop!

Keep an eye on your brake pads. They wear down over time. For rim pads, once the little grooves are gone, they need to be replaced. Disc brakes are a little more work to inspect. Here's a good video for that.

As a general rule, it's best to have the width of two fingers between the handlebar and the brake lever when it's pulled as far as it will go. When that distance becomes less, you can make some minor adjustments with the barrel adjuster on the brake lever. If the lever is closing all the way to the handlebar, you'll need to adjust the cable at the caliper. Or replace the pads, if they're worn down.

It's also a good idea to make sure the brakes are not rubbing. Spin each wheel to make sure there's no drag. Nothing kills the joy of a bike ride like a dragging brake!

C is for Chain, Chainrings, Cassette, and Cranks

Keeping an eye on chain wear can save you a lot of money. Your chain rivets will wear over time, causing the chain to elongate. A worn chain will wear the teeth of your chain rings and cassette cogs.

The key to extending the life of your chain rings and cassette is replacing your chain before it can stress those teeth. You can purchase a cheap tool for measuring chain wear at your local bike shop, or you can use the ruler method (12 links = 12 inches. At 12 1/16," replace the chain; at 12 1/8," replace the chainrings and cassette as well.)

Pre-ride ABCs

Check your crank to make sure it's tight. Grip the crank arm and pull perpendicular to the frame. If there's play in it, it needs to be tightened.

"Quick" is for Quick Releases

Know where all your quick releases are and check to make sure they're closed. Quick releases can be found on wheels, brakes, seat posts, and the joints of folding bikes.

It's important to properly close quick releases. It's especially important that the skewer release on your wheels are closed properly. With the lever open, tighten the nut opposite the lever until it is just snug. Then push the lever closed with the palm of your hand. It should be slightly difficult and leave a dent on your palm.

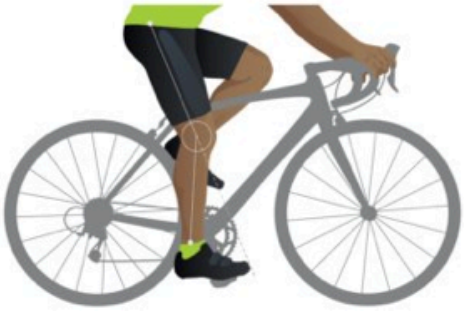
Check is a quick overall test...

…to ensure all accessories are attached properly and that your brakes and gears are functioning before you head out on your ride.

If you have panniers, baskets, or other accessories mounted to the bike, the drop test is a good way to make sure you don't end up having a yard sale after the first bump you hit. Pick the bike up a few inches, then drop it. The jarring bound will dislodge anything that wasn't secured properly. Before you leave the neighborhood, run through the gears and test the brakes.

Starting and Stopping

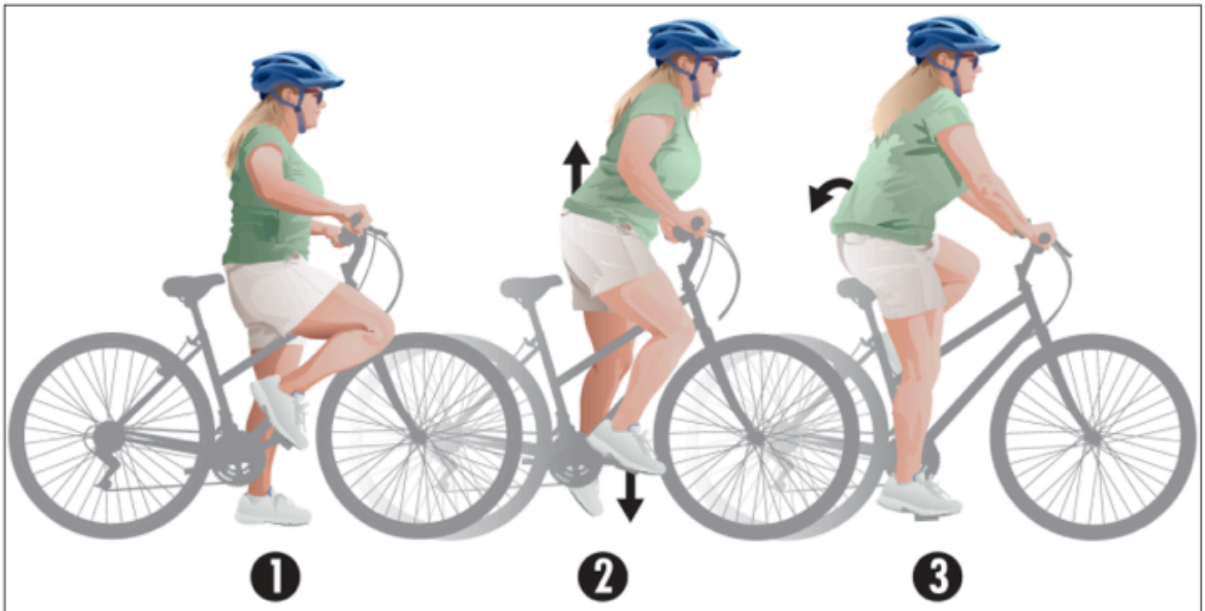
Adjusting your saddle height



For an efficient ride, when your pedal is at its farthest position from your saddle, your knee should be bent only slightly. For a bike with normal upright geometry, this position is the bottom of the pedal stroke.

If your bike is a recumbent or has a pedal-forward geometry (like a Townie), you'll be able to sit on the saddle with a foot flat on the ground. The foot on the pedal will be angled forward, but the knee bend will be the same.

Getting onto the saddle



1) Pull the pedal up to the 2 o'clock position. If using plain pedals so you aren't clipped in, place your foot under the pedal to pull it up. 2) Use the pedal like a step to lift your body up as the bike begins to move forward. 3) Sit down on the saddle and place your other foot on the opposite pedal to continue pedaling.

When you get onto your bicycle, first stand over the frame in front of the saddle. Hold the brake levers so the bike won't roll. A steady bike lets you get into position to mount.

Now, using either foot, gently pull the crank upward until the pedal is at the 2 o'clock, or power-pedal, position.

If your bicycle has a coaster brake, put down one foot and lift the rear wheel so you can turn the pedals forward with the other foot, or roll backwards to position the pedals. Then place your foot on the forward pedal.

Once your foot is on the pedal in the power-pedal position, you're ready to get moving. Let go of the brake levers and push down on the pedal. The first pedal stroke starts the bicycle moving and lifts you up to the saddle. When the opposite pedal comes up to the top position, put your foot onto it for the second pedal stroke.

Starting and Stopping

Stopping gracefully

Before you stop, shift down to an easy starting gear. On most bicycles, the gears shift only while you're still turning the pedals: planning ahead pays off. Keep the pedals turning without force until you're done shifting.

As you stop, stand on one pedal and lift yourself off the saddle. Place the other foot on the ground as you come to a stop. Then pull that pedal back up to the power-pedal position.

It's best to keep only one foot on the ground when you stop. The other foot waits on its pedal in the 2 o'clock position, ready for a quick start.

Sidewalk Rules

Legality

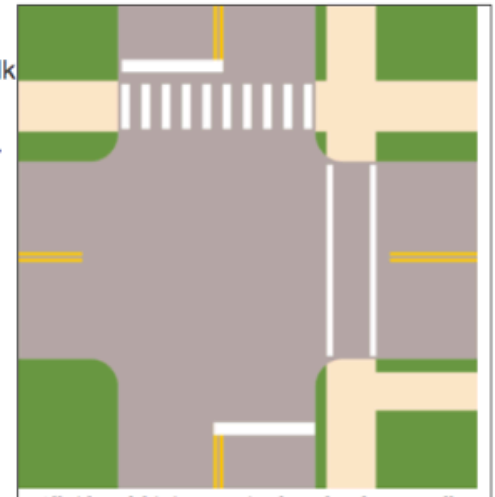
When choosing the sidewalk, the first consideration is legality. Many cities prohibit sidewalk cycling in their central business districts. This is to protect pedestrians. If it's not legal to operate on the sidewalk, you might find yourself without legal or civil recourse if you're involved in a crash.

Pedestrian Rules

When you ride on the road, you have the rights and duties of a vehicle driver. When you ride on the sidewalk, you have the rights and duties of a pedestrian. You're also required to yield to actual pedestrians. It's legal to ride in either direction: with traffic or facing traffic. But if you run into an obstruction or closure and have to enter the road, it's much more problematic to be facing traffic.

Crosswalks

Legal crosswalks exist at all sides of an intersection, whether marked or not. A crosswalk is defined as the extension of a sidewalk through the intersection. A sidewalk is the public right-of-way next to the road. It can be paved or unpaved. Pedestrians may not enter a crosswalk if it's unsafe to do so — if traffic is too close to yield. Once a pedestrian legally enters a crosswalk, drivers must yield.



All sides of this intersection have legal crosswalks.

Following Traffic Signals

At a signalized intersection, pedestrians must follow pedestrian signals if they are present. If the pedestrian signal indicates "Don't Walk," you may not legally enter the crosswalk, even if the traffic signal in your direction is green. If there is no pedestrian signal, then you follow the traffic signal in your direction. Use caution entering the crosswalk if you approach an intersection after the light has been green for awhile.

Delay

An inconvenient constraint of operating in pedestrian space is reduced signal timing at intersections. You are only legally allowed to enter a signalized crosswalk during the walk phase. You're not allowed to enter it once the clock starts counting down. That basically means you have to already be at the intersection, since the walk phase is only a fraction of the green time for the road at most crossings.

Sidewalk Rules

Actual Pedestrians

Pedestrians are the intended users of sidewalks. This is their space. When you encounter a pedestrian, slow down and be courteous. If the sidewalk is narrow, take a driveway or curb cut to enter the road. Of course, if you're riding facing traffic, this isn't such a good option. Many pedestrians will step out of the way. Some, like wheelchair users, cannot.

To learn more about the rules that govern pedestrians, see When Bicyclists are not Drivers in CyclingSavvy Basics.

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Fall Hazards

Hazards

Some sidewalks are so littered by obstructions and crash hazards they are barely suitable for pedestrians. Some common issues:

- Sidewalk upheavals
- Guy wires
- Poles
- Paper boxes
- Holes for tree plantings
- Low-hanging tree limbs
- Sight obstructions (we'll talk more about this in the next topic)
- Sidewalks end without warning
- Lack of curb cuts at intersections
- The edge of the sidewalk itself

Catching an edge

If you must leave the sidewalk pavement to get around a hazard or pass a pedestrian, be aware that the lip of the pavement can cause you to crash when you return to the sidewalk. Turn your wheel as perpendicular as possible to get back onto the sidewalk, or wait for a driveway.

Cars Crossing Your Path

Conflicts with cars are predictable

Cars must cross a crosswalk or sidewalk at every intersection and driveway. Drivers are required to yield to pedestrians.

As a bicyclist on the sidewalk, you're legally a pedestrian. If you are crossing a street on a crosswalk, you must slow or stop before entering the crosswalk so drivers have time to see you and let you cross.

Unless you have a "don't walk" signal or a red light, drivers are required to yield to you. However, you may only enter the crosswalk if it's safe to do so.

Driveways vs. Streets

Pedestrians are not required to stop before crossing a driveway. The sidewalk extends through a driveway. Drivers are required to yield before crossing the sidewalk. Most motorists don't know this. We'll talk more about the safety issues of that in the third topic of this lesson.

Visibility

Sight obstructions are a serious problem for cyclists on the sidewalk. Bushes, poles, buildings, parked cars, etc., can hide bicyclists from view. Be aware of these obstructions whenever you're approaching a place where vehicles can turn across your path.

In addition to fixed objects, you can be hidden from left-turning drivers by moving cars, passing on the road.

Relevance

Drivers focus their attention on conflicting traffic that is most relevant to them. This is almost always going to be other vehicle traffic in the road. Many drivers forget to check the sidewalk, and if they do, it's often only immediately near the intersection.

Cars Crossing Your Path

Expectation & Human Factors

Bicyclists travel three to four times as fast as pedestrians. You can easily close the distance to the intersection between the time a driver checks the sidewalk and when he crosses it.

The more factors a driver has to pay attention to, the more likely he or she will be to miss an approaching bicyclist.

On roads with more lanes of traffic, this becomes more of a problem. In addition, the speed of motorists turning off the road, or accelerating to turn onto the road can make a crash deadly.

Take control

Your best defense is to be aware of your visibility, as well as the limitations and failings of others. **Before crossing any intersection or driveway, scan in all directions.** If there are a lot of intersections and driveways, this can become tiresome. It might be better to drive your bike on the road, or find another route.

To learn more about common crashes and how to prevent them, see Reducing Risk: Sidewalk & Sidepath Operation in CyclingSavvy Basics. For a more in depth look at Sidepaths and Cycletracks, see Understanding the Bikeway in the Mastery Course.

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Road Safety

For the most part, it's safer and more efficient to ride on the road.

In a system designed to benefit vehicle traffic, it's advantageous to have the rights and duties of a driver. You have much more flexibility and less delay when you operate as a part of traffic.

There are a few things you need to do to make road cycling safer and more enjoyable. We'll cover these in the next two topics, and in the next lesson.

Getting Space (The CliffsNotes)

The single biggest complaint we hear from bicyclists is that motorists pass them too closely.

If you've been on social media for awhile, you've probably seen admonitions to "Give 3 feet" of passing clearance. Or maybe you've seen a story about a cyclist who has strapped a horizontal appendage to his bike to encourage motorists to move over.

What if I told you...

...you can get *way* more than 3 feet of passing clearance, almost universally, without laws, signs, pool noodles, or fist-shaking?

You need do only one thing: Ride far enough into the lane so that it's clear to motorists that they need to use the other lane to pass.

See, motorists pass too close not because they're mean, but because they have really poor spatial judgement.

If you hug the edge, they think they can fit in the lane with you.

It's that simple.

Intersection Safety Essentials

Contrary to popular belief, the majority of bike vs. car crashes come from in front of the bicyclist. Just like with motor vehicle crashes, most happen at intersections or driveways.

In fact, these are the same three crash types we talked about for sidewalk cycling. The difference is, when you ride on the road, you have a much more efficient means of defense.

Right Hook

A motorist passes and turns right in front of a cyclist. This can happen to a cyclist riding on the edge of a narrow or wide lane, or in a bike lane. The easier it is for a motorist to pass prior to the intersection, the more risk there is for this crash.

This is primarily a problem of relevance. Because it's too easy to pass, the motorist doesn't process the whole situation. He may underestimate the speed of the cyclist, forget he has to slow before turning, or he may just be completely checked out and not even notice the cyclist.

Discourage this behavior by making yourself relevant. Ride far enough into the lane that a motorist would need to change lanes to pass.

This will cause them to pause and think about the distance they'd need to pass and get back into the lane before the turn. Almost all motorists will simply wait behind you until you clear the turn.

Very rarely, a motorist will try to pass anyway and turn right from the left lane. In this case, your position still gives you plenty of room for an evasive maneuver.

Road Safety
Intersection Safety Essentials

Left Cross

A motorist turns left into, or front of, the cyclist. There are two reasons this happens.

One is because the cyclist is irrelevant to the motorist, or the motorist underestimates the cyclist's speed.

The other reason is that passing cars hide the cyclist from view of the motorist. This can happen on a multilane road or any time the cyclist is operating alongside a line of traffic (wide lane or bike lane).

Discourage this by riding farther left. A leftward position indicates higher speed, and allows you to better focus on the oncoming traffic lane.

Learn to recognize the conditions that create a moving screen. Know where the potential conflicts are, and make sure you establish a vantage from which to see them.

Do not blindly enter an intersection if you're not able to see the oncoming lanes.

Drive Out

A motorist pulls out from side street into the cyclist's path. Just like with sidewalks, this is often exacerbated by sight obstructions (hedges, poles, utility boxes, etc.) on the side of the road.

Motorists are more likely to see cyclists in the traffic lane, because that's where they're looking. Scan for sight obstructions and move left for better vantage.

If you can't see traffic approaching from a side street, those drivers can't see you. Move left until you are in each other's line of sight.

Notice a theme?

Yeah, most of the problems cyclists face are caused by trying to stay on the right edge. You don't have to do that! The law doesn't require it. Contrary to many fears, most motorists respond well to an assertive, visible, communicative and cooperative cyclist.

Knowledge That Could Save You

Now that you've completed the other course modules, you understand common crash types and how to avoid them.

However, there are **three high-risk situations** of which every cyclist needs to be aware.

These three factors produce repeated tragedies. All are conditions that YOU can completely avoid — and not be a victim of — once you're aware of them.

Help Us Spread The Word

It's our goal at CyclingSavvy to get this knowledge to ***every bicyclist on the planet***.

No one should die because they didn't know something that would have saved them.

The Door Zone

First of all, let's be clear.

It is a violation of the law to open a car door into traffic — whether that's car traffic or bike traffic.

Now let's be real.

People screw up. They're distracted, they forget to look. The more space they have between their parked car and the line of motor traffic, the less likely they are to be vigilant about looking before swinging that door open.

So the sad fact is, bike lanes in the door zone give people a place to open their doors without fear of a car hitting it. Additionally, drivers aren't the only occupants who open car doors.

Doorings account for around a quarter of serious crashes in major cities. Clearly, relying on car occupants to prevent doorings isn't working out for a lot of cyclists.

Knowledge That Could Save You

Trucks and Buses

Cyclists hit by turning trucks is a repeating tragedy. Sometimes these crashes are caused by the truck driver passing a cyclist prior to turning right, but they're also caused by the cyclist passing the truck on the right.

In both cases, the cyclist has the power to avoid the crash.

First, understand the vehicle and driver

Trucks have large blind spots

All vehicles have blind spots. The larger the vehicle, the larger the blind spot. Big rigs have areas large enough for a car to be invisible to the truck driver. As the cab is turned, the area normally visible in the mirror shrinks as it turns toward the trailer. Once a truck driver initiates a right turn, he can no longer see the area to the right of his truck.

Large vehicles make wide turns and offtrack

The longer the vehicle, the more it's going to off-track. That means the back wheels cut the corner while the front wheels swing wide.

The driver of a long vehicle has to move left before turning right. She has to concentrate on the oncoming lane of the street she's turning onto, because she may need to drive into it, too. She has to make sure her rear wheels don't offtrack over the curb and hit a pedestrian. She has to watch for pedestrians legally entering the crosswalk.

On top of all that, by moving left, she's opened an invitation for impatient drivers to try to pass on her right.

Knowledge That Could Save You

Trucks and Buses

Truck and bus drivers have a high workload

Navigating city streets can be stressful for any driver, but imagine trying to pilot a massive vehicle through congested traffic, around tight turns, while avoiding pedestrians and bicyclists.

Then add a lane between your vehicle and the curb, carrying relatively tiny vehicles right through your blind spot. A driver may be able to rely on extra mirrors or side cameras, if the truck is equipped with them, but that's just one more thing in an already taxing workload.

Just stay out of the danger zone!

- If you see a stopped truck ahead, do not pass it on the right. Do not pull up next to a truck at a red light.
- If a truck passes you and slows, brake until you are behind it. Never linger beside a truck.
- Keep in mind the moving screen we discussed in previous lessons. Large vehicles can hide you from left-turning drivers. So, when you're hanging back, make sure you can see and be seen.

Knowledge That Could Save You

The Low Sun

You would think

People should stop driving if they can't see. They don't.

One of the greatest fears cyclists have is being hit from behind. This fear looms large, though it's a rare type of crash. It just tends to make the news more often than other crash types.

The most common factor in daytime rear-end crashes is sun blindness. We have no control over whether a motorist chooses to drive blind, but we can avoid the risk.

If the sun is ahead of you

When the sun is low in front of you, it's probably blinding you, too. Consider that motorists have additional windshield glare on top of the bright sun itself. They're probably having an even harder time seeing.

Avoid riding into blinding sun. Sometimes it's only a matter of 10 to 15 minutes to wait out the sunset, or until the sun is higher in the morning.

If you have a particular problem area on your route, see if you can find alternate roads to avoid it. Perhaps you could ride north/south a little longer before turning east in the morning, or choose a road with buildings or trees that block the low sun.

If the sun is directly behind you

Use a high-powered (800-1000 lumen) headlight. Flash mode might be useful in these conditions. Slow as you approach intersections, and keep your eye on cars that could pull out or turn left. Be prepared to take evasive action. Riding farther out into the lane makes you more visible, too.