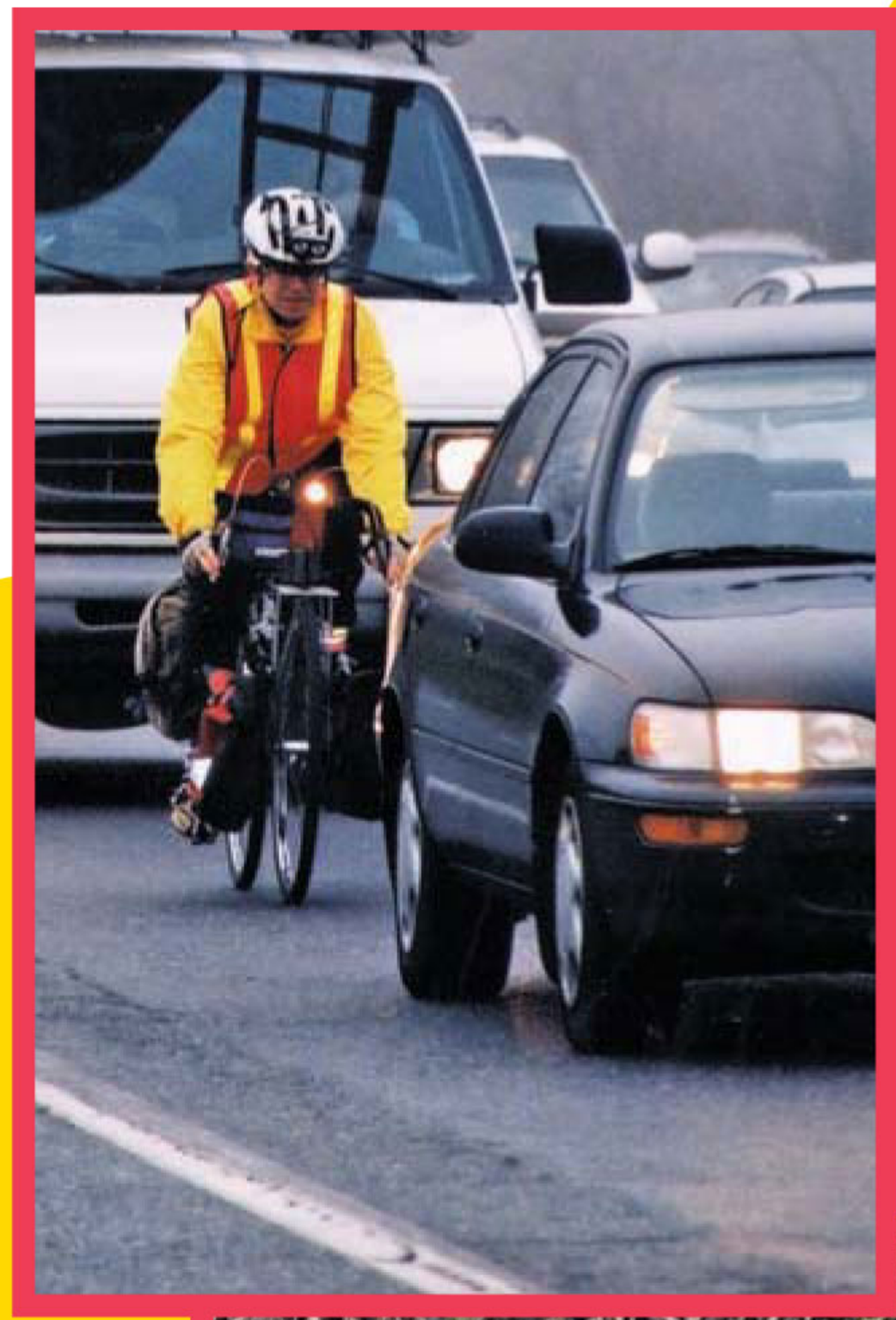
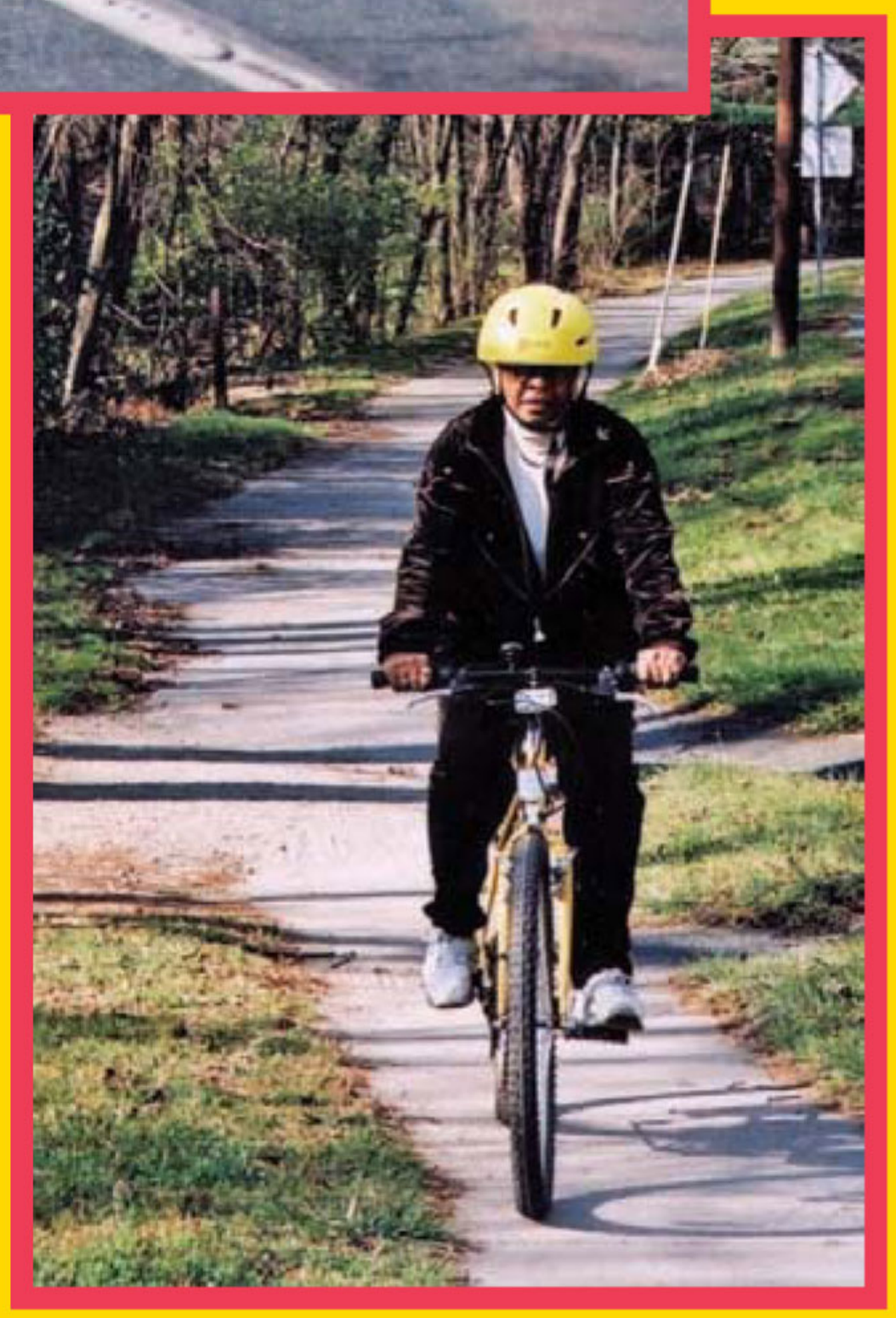
Maryland Department of Transportation

SAFE BICYCLING IN MARYLAND





FREE BOOKLET!

What Equipment Do You Need? *Chapter 1, page 4*

How to Maintain Your Bike? *Chapter 2, page 5*

How to Lock Your Bike? *Chapter 3, page 7*

Why Do You Need a Helmet? *Chapter 4, page 9*

What are the Traffic Rules for Cyclists? *Chapter 5, page 11*

Where on the Street Should You Ride? *Chapter 6, page 15*

How to Handle Dog Attacks? *Chapter 7, page 23*

How to Ride on Trails? *Chapter 8, page 26*

How to Dress for Cold & Rain? *Chapter 9, page 31*

How to Use This Booklet

How should you use this booklet? First, look at the subjects listed on the front cover. You'll see what page to turn to for that information.

If you want other information about how to bike safely in Maryland, read the Table of Contents. There, we've listed everything this booklet covers. If you can't find what you want, check the list of bicyclists' resources on the inside back cover.

This booklet is intended for bicyclists above 12 years of age. Parents and teachers can use the booklet to teach younger cyclists how to bike safely.

Cover photos

Robert McCutcheon commutes by bicycle on State highways between Takoma Park and Laurel daily. Carolyn Wainwright enjoys an occasional recreational bicycle ride along the Sligo Creek Trail in Montgomery County.

Photo on right

Helmet, bright safety vest, lights and panniers are part of Robert McCutcheon's bicycle commuting gear.

MESSAGE FROM MDOT

The Maryland Department of Transportation (MDOT) supports and promotes bicycling as a transportation mode for Maryland residents and visitors. It provides a low-cost, enjoyable way to travel that is healthy for both the bicycle operator and for our quality of life.

Because of the benefits of bicycling, numerous private organizations and government agencies are working hard to provide bicycling facilities that all citizens can enjoy. As with other forms of transportation, bicycling requires responsibility. That's why MDOT has developed this booklet on bicycle safety.

If you observe traffic laws and use correct cycling skills, you can avoid crashes and injury. Please use this booklet to learn the skills and resources that will help you ride safely.

TABLE OF CONTENTS

Message from MDOT.....inside front cover
How to Use This Booklet .....inside front cover

1: Fitting & Equipping Your Bike

How to Get a Good Fit 2
Frame Size 2
Seat Height 2
Basic Equipment.....4

2: Quick Maintenance Checks.....5

3: Where to Park Your Bike

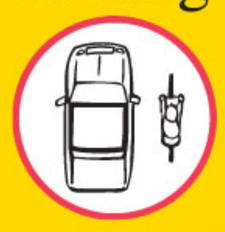
Parking and Locking Basics 6
What Hardware Should You Use? 6
How to Lock Up 7
Where to Park 7
Cutting Your Theft Losses 8

4: All About Bike Helmets

Why Should You Wear a Helmet?.....9
Basic Helmet Types 9
What to Look for in Helmets.....9
Comfort and Cost 10
Why Kids Need Helmets 10

5: Traffic Basics

Riding Predictably 11
Traffic Rules for Cyclists 11
How to Learn Traffic Skills.....12
Communicating.....13
Picking Your Route 14



6: Lane Positions, Turning, & Passing

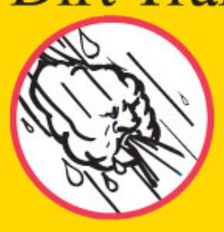
Basic Lane Positions.....15
Intersections and Turns 17
Turning Left from a Left-Turn Lane 18
Turning Left with No Left-Turn Lane 19
The Box Left Turn 19
Stops and Turns on Red 20
Three-Way Intersection.....20
Passing 20
Squeezing between Cars 21
Passing Buses.....21

7: Trouble Situations

Emergency Moves.....22
How to Fall 22
Dogs 23
Pedestrians 23
Railroads 23
Assault 24
Conflicts with Motorists 24
What to Do after a Traffic Collision 25

8: Off-Street Bicycling

The Basics of Using Paths.....26
Dirt Trail Bicycling.....27



9: Riding at Night & in Bad Weather

How to Be Seen at Night.....29
Riding at Night 30
Riding in Rain and Snow.....30
Dressing for Cold and Wet Weather.....31
Equipping You and Your Bike for Rain and Snow.....32

Bicyclists' Resources

.....inside back cover

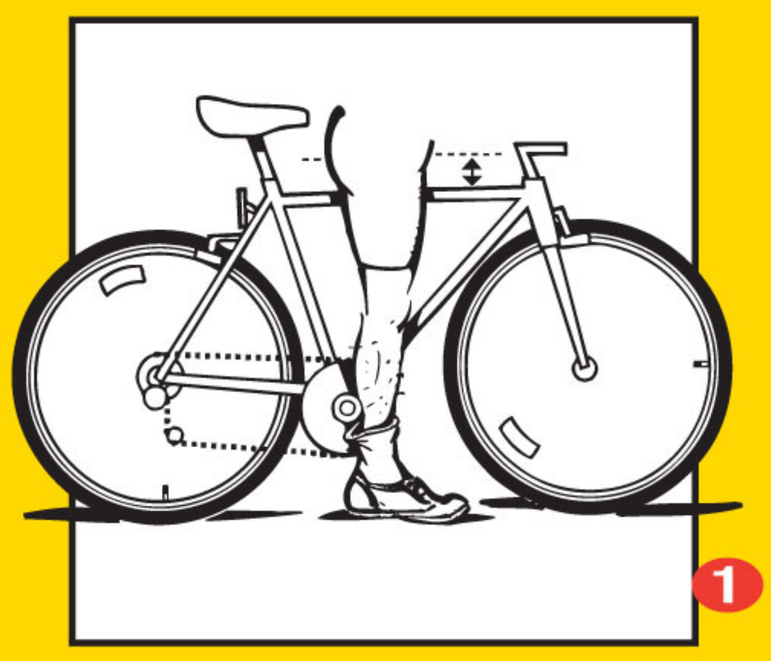
Motorists' Advisory

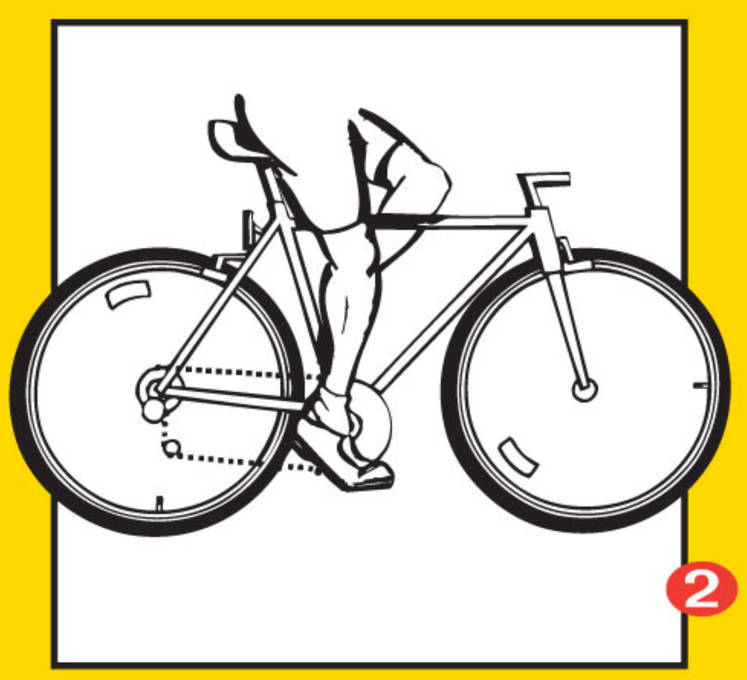
.....back cover

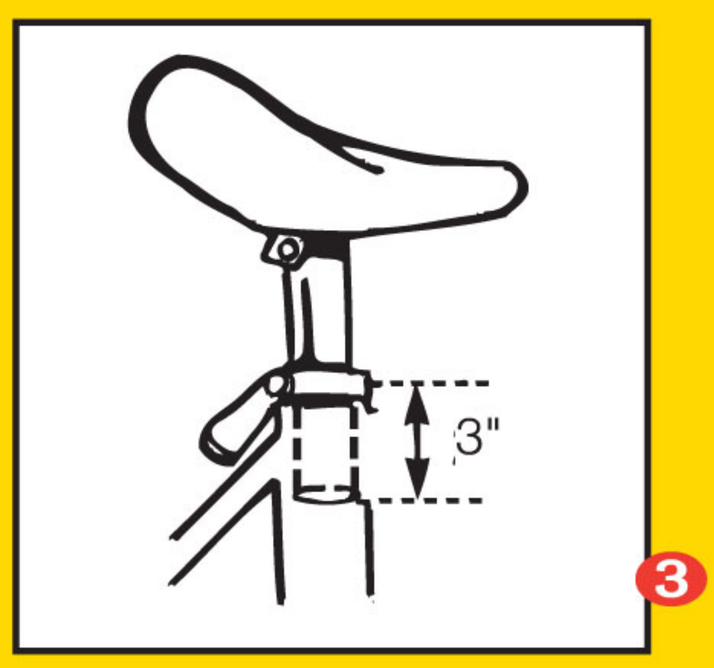
1: FITTING & EQUIPPING YOUR BIKE

HOW TO GET A GOOD FIT

Your bike's most important safety feature is ***you***. If you're not comfortable, you're more likely to ride badly and hit something. Getting exactly the right fit depends on many things—including your height, weight, and riding style. You should contact your neighborhood bicycle store to help you find the right fit. Consider these points.


1


2



3

Frame Size: If your bike's frame is too tall, too short, or too long, it's very hard to adjust other things to make you comfortable—so you may need a new bike.

To Check the Height: On a men's bike, stand with the bike between your legs, just in front of the seat. Measure the space between you and the top tube. 1 For road or street riding, a one-inch to three-inch space is safest. (Off-road riding might require a bigger space.) For women's frames, ask your bicycle store's staff to size you.

Frame Length: If, when you ride, you feel overly stretched or have pain in your neck, shoulders, or back, your frame might be too long. Try moving the seat and handlebars closer together (see page 3). Also, some people—including many women—have torsos shorter than what most bikes are made for. If you're one of them, look into a shorter handlebar stem extension, a taller stem, different handlebars, or a custom bike made for people with smaller torsos.

Seat Height: A seat that's too low will strain your knees, while a seat that's too high will make it hard for you to pedal and to put your foot onto the ground. Here are some ways to get the right seat height for most riding:

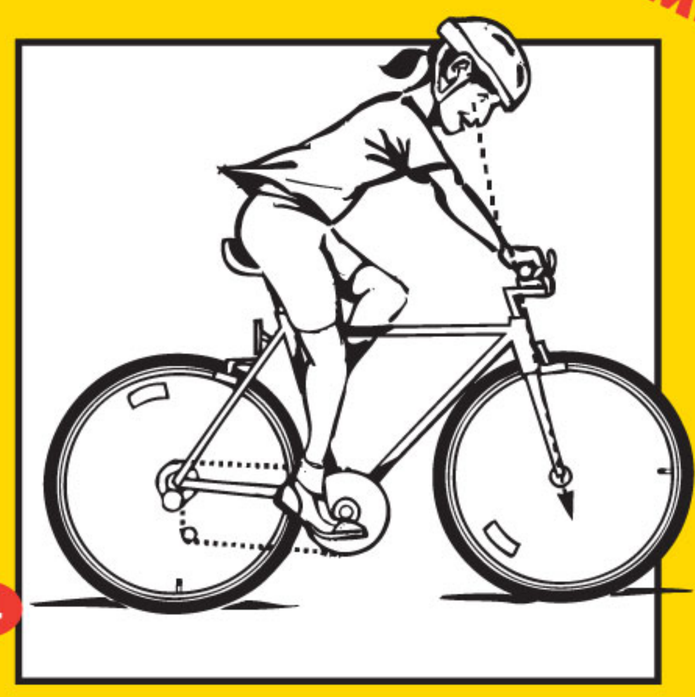
- Sit on your bike and push one pedal all the way down. 2 Put the ball of your foot on the pedal. If your seat's high enough, your knee should be slightly bent.
- If your hips rock from side to side when you pedal, your seat's too high.
- Don't raise your seat so high that less than three inches of your seat post extends into the frame. 3 (Most seat posts have a mark showing how high you can raise them.) If your seat post is a foot long but still too short, look into a new bicycle.

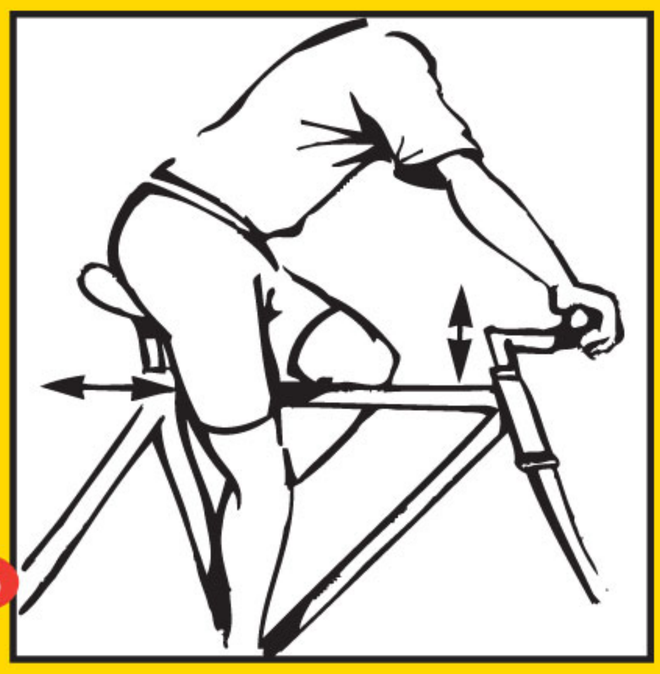
Handlebars: After you've set your seat height, set your handlebars so you feel comfortable. Some things to guide you:

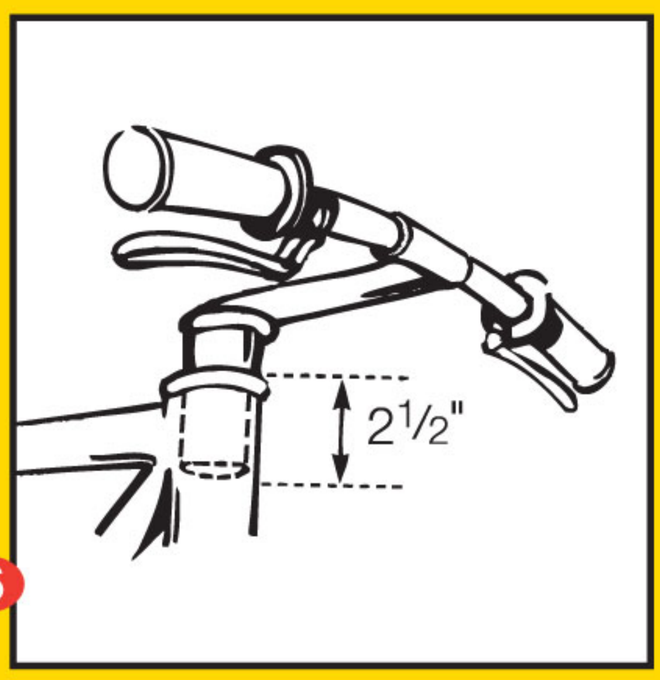
- Start by raising or lowering your handlebars so they block your view of the front axle when you're sitting on your bike with your hands on the handlebars. 4 In this position, your elbows should be slightly bent (not locked).
- Lower-back pain often means the handlebars are too far away, while upper-arm or shoulder fatigue often means the handlebars are too close to you. Try raising or lowering the handlebars, or moving your seat forward or backward. 5 You can also change to a shorter or longer handlebar stem.
- Don't raise your handlebars so high that less than two and a half inches of your handlebar stem extends into the frame. 6 (Most stems have a mark showing how high you can raise them.) If you have to raise your handlebars higher than the safe limit, get a longer stem or stem extender.
- Rotate your handlebars so that they put even pressure across the palms of your hands without bending your wrists in a strange way. 7

Seat Tilt: Last, adjust your seat tilt for comfort: Many cyclists keep their seats level. Many women, however, tilt them nose-down, and many men tilt them nose-up. Try different angles until you find a comfortable one.

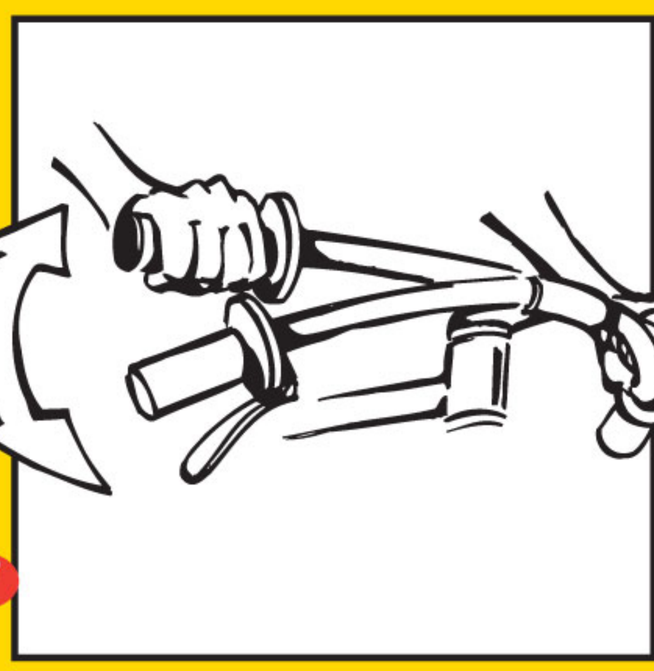
Saddle Soreness: If you haven't bicycled in a while, expect to be sore at first; chafing or soreness should get better with time. If it doesn't, the first thing to check is the seat adjustment; see "Seat Tilt" above, and "Seat Height" on page 2. If adjustment doesn't help, try alternatives: a gel-filled saddle or saddle pad; a wider or differently shaped saddle; one with springs; or one made specifically for women. Many bicycle stores will exchange saddles if they're not damaged, so try alternatives until you're comfortable. Also, many cyclists like padded and/or seamless shorts for long rides.


4


5



6


7

FOR MORE INFORMATION

For help on making sure your bike fits:
Read *Urban Bikers Tricks & Tips* by Dave Glowacz. Available at book stores, on-line at www.askmrbike.com, or by calling 800/888-4741.

1

2

3

BASIC EQUIPMENT

Experienced cyclists have a few simple ideas about equipment that make biking a lot safer—and easier. Here's what they recommend.

Helmet: A must for cycling! See page 9 for details.

Flat Fixer: **To prevent flats:** 1 Keep your tires at maximum air pressure; they lose a little air every day. Skinnier tires lose air more quickly. Many cyclists use puncture-proof tire liners, Kevlar-belted tires, thorn-resistant tubes, or tube sealants. Heavy-set or rough-surface riders should try wider tires. **To fix flats:** Always carry a spare inner tube or a patch kit, and tools to get your tube out. Use tire levers (best) or a screwdriver (not as good); a wrench if you don't have quick-release hubs; an old sock or rag to cover your hand when you grab your chain; and a hand pump or a quarter to pay for a gas-station pump. (Beware: high-pressure pumps can explode your tire!)

Carrying Rack: Make your bike carry your things! 2 Use bungee cords to tie things to your carrying rack. Attach a milk crate as a carrying case. If you carry things often you should invest in panniers, or the many varieties of bike bags available.

Instead of a rear rack or front basket, you can use a backpack. However, a backpack can strain your shoulders and make balancing harder. Remember carrying stuff in your hand is unsafe and illegal in Maryland.

Toe Clips: Toe clips and clipless pedals can give your pedaling more power. But if they are not adjusted correctly, your shoes may become locked into position so you can't put a foot down when you need to stop or if you lose your balance. When using toe clips or clipless pedals, make sure you can get your feet out of them fast.

Ankle Strap: Getting your pants caught in your chain can make you lose control and ruin your pants. 3 If your bike doesn't have a chain guard, use a clip or Velcro strap around your pants cuff to keep it from hitting your chain and frame.

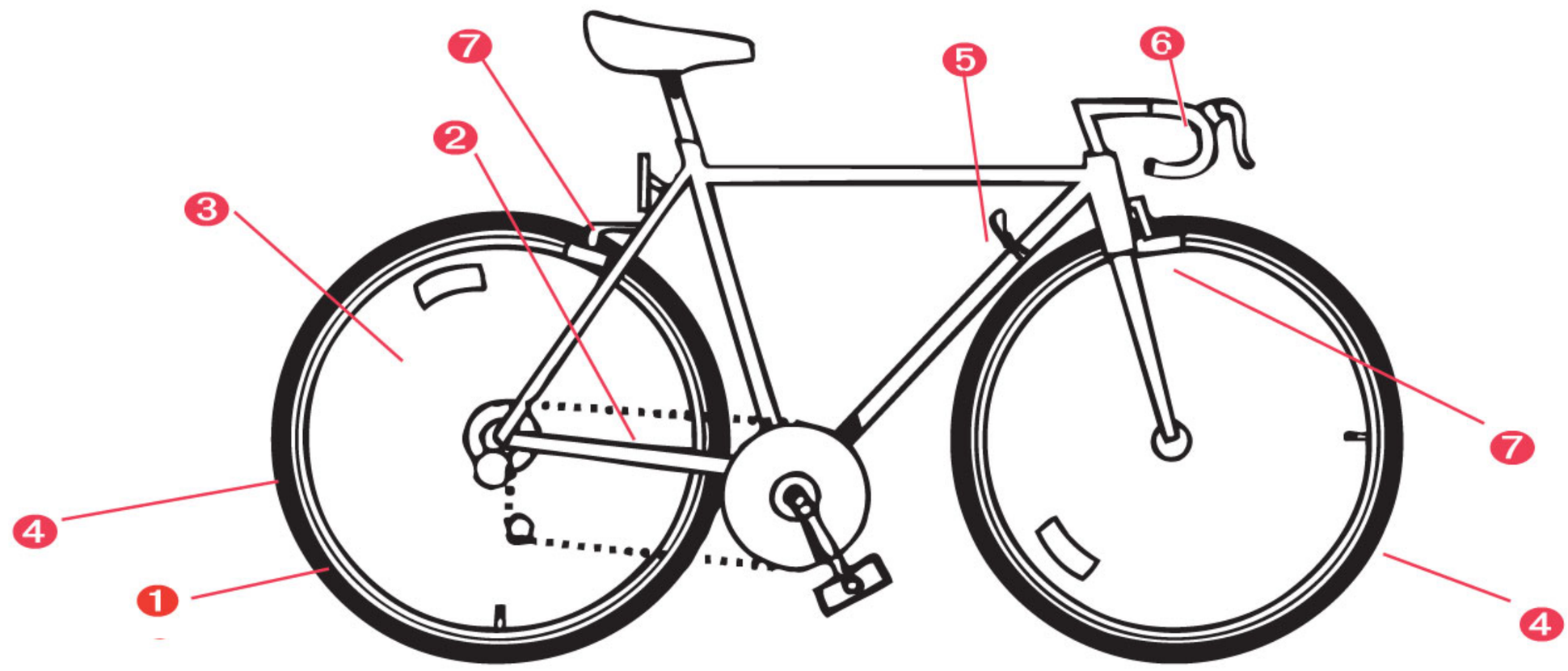
Sunglasses or Goggles: To protect your eyes from bugs and airborne debris, wear sunglasses or clear goggles, especially with contact lenses. Wrap-around glasses are best. If your glasses steam up in cold weather, apply an anti-fogger. (Some cyclists use a light coating of gel toothpaste.)

Night and Foul Weather Gear: If you ride at night or in bad weather you are required to have lights, reflectors, and more. See pages 29-32 for details.

Bell: A person may operate a bicycle equipped with a bell or other device capable of giving an audible signal.

2: QUICK MAINTENANCE CHECKS

Safety starts with your bike. Whether you use your bike a lot or you're dusting off an old bike, this page gives you a few simple things to check for a safe ride. While these checks help you find problems, we don't have room to tell you how to fix them all. If you need help, go to your owner's manual, a maintenance book, or a bike shop.



1 Air: Tires lose a little air every day. If your gauge says a tire is more than five pounds under the needed pressure (printed on the side of the tire), add air. No gauge? Push each tire hard against a curb. If you can flatten it, add air.

2 Chain: A dry chain can skip, lock up, or break suddenly. If your chain squeaks or hangs up, lubricate it. Oil will do, but it attracts dirt; a greaseless chain lubricant is best. To lubricate:

a. Grab the bottom of the chain loosely with a lint-free rag. With the other hand turn the pedals backward, sliding the chain through the rag. Pedal the chain around twice to remove grime.

b. With one hand squeeze or spray lubricant onto the chain, and with the other hand pedal the chain backward so it goes completely around once (twice if really rusty).

c. Repeat step (a) to get the excess lubricant off the chain. Extra lube can attract dirt.

3 Wheel Spin: Lift each wheel up and give it a slow spin. (Spin the back wheel forward so the pedals don't move.) Check that it doesn't rub against the brake pads, frame, or something else. If the wheel doesn't spin freely but it's not rubbing, the problem might be inside the axle.

4 Tires: Turn each wheel very slowly and look for big cuts, bulges, bubbles, or places you can see the inner casing. If you spot any, replace the tire. Remove glass or other debris. If the valve stem doesn't point straight at the middle of the wheel, the rim might cut it; let the air out and straighten the valve.

5 Shifting: Try all of your gears, shifting each gear lever from high to low. You have a problem if the lever sticks, you can't shift to all gears, the chain rubs the derailleur, or the chain jumps off the gears. These are usually caused by worn or dirty cables, or a derailleur that needs cleaning or adjustment.

6 Handlebars: Hold the front tire between your legs and try to turn the handlebars. If they're loose, tighten the stem bolt.

7 Brakes: You should have your brakes adjusted or replaced if you have any of these problems: (a) when you apply the brake on each wheel, one or both brake pads don't touch the rim; (b) you can squeeze your brake lever all the way to the handlebars; (c) on each wheel, the brake can't stop the tire from moving on dry, clean pavement.

Loose Parts: Pick up the bike and shake it hard. Check and fix anything that rattles.

SOME GOOD BOOKS ON BIKE REPAIR

Anybody's Bike Book, *by Tom Cuthbertson*

Bicycling Magazine's Basic Maintenance and Repair, *by the Editors of* Bicycling *magazine*

On the Road Guide to Bicycle Maintenance, *by Eugene A. Sloane*

Roadside Bicycle Repairs, *by Rob Van der Plas*

Check each time you ride!

3: WHERE TO PARK YOUR BIKE

1

2

3

4

PARKING & LOCKING BASICS

The first rule: always lock it. Never, never leave your bike unlocked even if you're leaving it for only half a minute. A thief can grab your bike in seconds. Some parking basics:

Security: Lock your bike to something that's permanent and not easy for a thief to take. Lock to a bicycle rack, a parking meter, a metal fence post, or a large tree. Don't lock to another bike, a door handle, or small tree. And if you keep your bike in a garage, basement, or on a porch, lock it.

Visibility: Park in open areas where many people pass by and your bicycle can be seen easily. 1 Thieves usually don't like an audience.

Keep It Close By: Put your bike where you can get to it fast. 2 Thieves like to steal bikes whose owners are far away.

WHAT LOCKING HARDWARE SHOULD YOU USE?

U Locks: Some U locks are stronger than others; make sure you buy a strong steel-alloy lock. 3 If the manufacturer offers a warranty or insurance, register the lock and write down the lock's serial number and when you bought it. For added protection, get one or more U-lock cuffs; they can keep thieves from using a lever to pry open your lock. One drawback to U locks: you can't lock up to thick objects such as street lights; for these, carry a thick cable.

Padlocks & Chains: The thicker, the better; chain links and lock clasps should be at least 3/8 of an inch thick. Look for locks and chains that are case-hardened—a process that makes them harder to cut.

Cables: Some cables are actually harder to cut than chains, because they don't snap and thieves can't pry them open. 4 Use a cable at least 3/8 of an inch thick with a lock as thick, or thicker.

Ugly Bikes: In busy commercial areas, where thieves have lots of bikes to choose from, your bike is less likely to be stolen if it looks old or just ugly.

HOW TO LOCK UP

A thief with enough time and the right tools can break any lock. But you can discourage many thieves if you follow these tips about locking your bike:

Lock the Whole Bike: You should put your chain, cable, or U locks through your frame and both wheels—taking the front wheel off if you have a quick-release hub. 5 Never lock through your wheel without locking the frame, because thieves can remove your wheel and steal the rest of the bike.

Cross Locking: A good way to foil thieves is to use more than one kind of lock. 6 For example, put a U lock through your frame and rear tire, and put a cable or chain through your frame and front tire.

Placing the Lock: Thieves may break a lock by putting it against a wall or sidewalk and smashing it with a hammer. If you use a padlock, try to put it where it's not close to the ground or against a wall or another solid surface—leaving little or no slack in your cable or chain. When using a U lock, leave little or no space in the lock's middle to prevent prying.

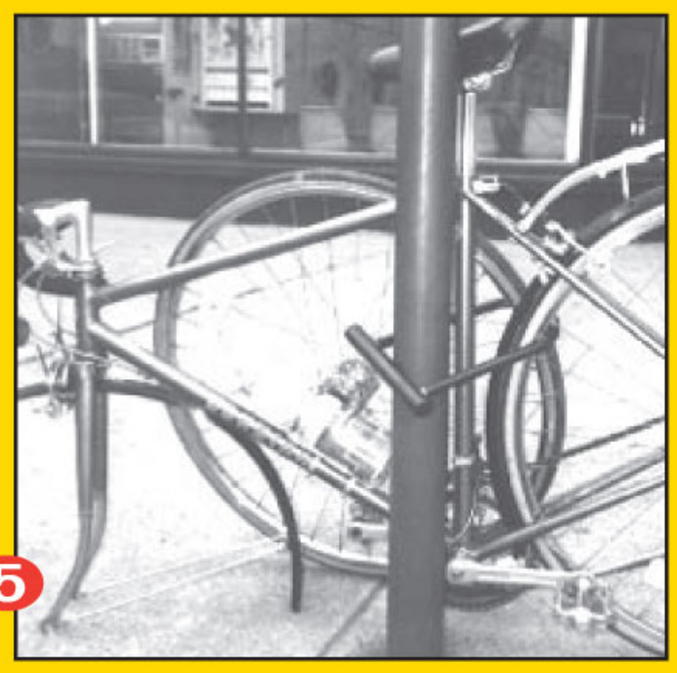
Removable Items: When you leave your bike, remove any parts you can't lock and a thief could steal easily: a quick-release seat, horn, bike bag, pump, cycle computer, or lights. If removing quick-release parts is a hassle, replace them with permanent ones.

WHERE TO PARK

Parking Meters: Lock your bike to a parking meter if you're using a U lock. 5 Never lock to a meter with only a chain or cable—a thief will slide your bike over the top.

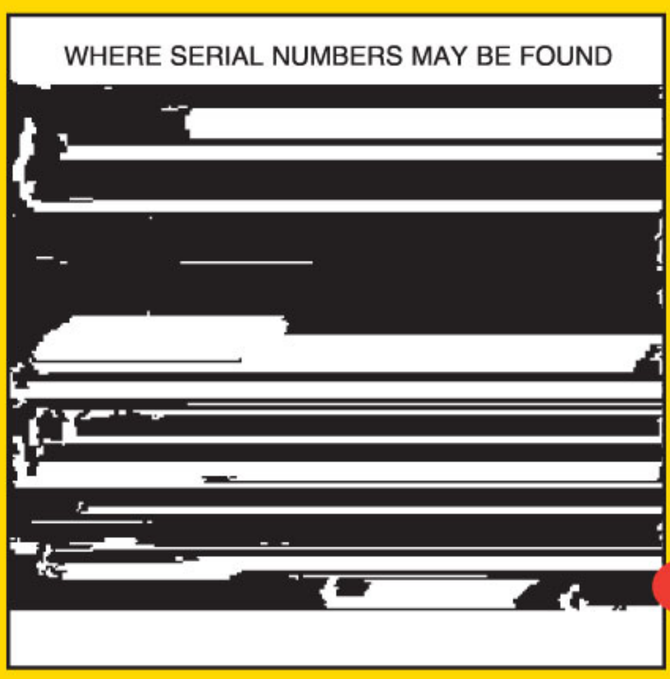
Bike Racks: Look for thick, immovable bicycle racks installed outside of many buildings. Some building owners and local governments have provided ribbon-shaped racks 7 and inverted-U-shaped racks, 6 which are very secure places to park your bike.

Sign Poles: Sign poles aren't the best places to lock your bike. Before locking to a pole, check whether you can pull it out of the ground. Also check how easily a thief could remove the sign and slide your bike over the top of the pole.


5

6

7



1

2

3

Parking Lots: Some public parking lots will let you park your bike for a small fee. If you forget your lock, look for an attended parking lot.

Indoors: A good way to avoid theft: park your bike indoors. Some stores and buildings allow bikes inside, if only for a short time. When parking indoors, lock your bike securely.

Where not to park: A person can not secure a bicycle to a fire hydrant, police or fire call box, traffic control device, any device located in a bus or taxi loading zone, any device within 25 feet of any intersection, or any device that would result in the obstruction or impedance of vehicular or pedestrian traffic. [ANNOTATED CODE OF MARYLAND SECTION 21-1208].

CUTTING YOUR THEFT LOSSES

What's the first thing to do when you get a new bike? Write down the serial number and register your bike with the local police. (Look for the serial number stamped on your bike's head tube, seat post tube, under the crank, or on the frame's rear wheel mount.) 1 Police across Maryland recover lots of bikes each year, but can't return most because they're not registered. If your local police do not have a registration program, keep a copy of your serial number in a safe place.

Identifying Marks: You can discourage thieves by engraving your name in an obvious place on your bike frame. 2 Or put a card with your name and phone number inside the handlebar tube—so if you find your stolen bike at an auction, junk shop, or flea market, you can prove it's yours.

If Your Bike Is Stolen: First, find your bike's serial number if you have it. Then call your local police and tell them where your bike was stolen. Try to get a police report number that you can use for an insurance claim. Also find out how police will contact you if they find your bike.

Looking for Your Bike: Sometimes you can find your bicycle at places like pawn shops, auctions, or resale shops that might deal in stolen merchandise. 3 But if you find your stolen bike among other property that someone is selling, remember that they won't just give it to you; you must prove that it is yours. Keep your serial number or use identifying marks as described above.

Call your local police to learn whether they auction off recovered, unclaimed property.

4: ALL ABOUT BIKE HELMETS

WHY SHOULD YOU WEAR A HELMET?

Safety: About 1,000 American bicyclists die in crashes each year—and around three-fourths die from head injuries. Hundreds more suffer permanent brain damage. Many of these are experienced, careful riders—maybe just like you. **Most of these head injuries can be prevented with bike helmets.**

It's the law: Maryland law requires all persons under the age of 16 to wear a bicycle safety helmet when riding a bicycle on public property. Please note that some local jurisdictions have extended age limits to 18 and one jurisdiction covers all ages. Check with your local police department to verify local helmet laws.

BASIC HELMET TYPES

The two basic kinds of helmets are hard shell 4 and soft shell. 5 Hard-shell helmets have a thin plastic surface, while soft-shell helmets have only the soft (usually white) foam surface. Hard shells can be safer on the street: When the shell hits rough pavement it'll skid, rather than catch on something and possibly injure your neck.

Also, a hard shell keeps the helmet's core—the soft foam part—from getting scratched and nicked. So if you do buy a soft-shell helmet, get a cloth or nylon cover that stretches over the whole helmet. Make sure the cover is stretched tight so it'll slide if you fall.

If you have a crash and your helmet takes an impact, replace it right away. An impact usually damages a helmet's foam core, meaning it won't protect you again. You should also replace your helmet at least every five years, because its foam core becomes brittle.

WHAT TO LOOK FOR IN HELMETS

Rating: Look at the inside of the helmet. It should have one of these: a compliance label from the U.S. Consumer Products Safety Commission (CPSC); a green or blue Snell sticker, meaning the helmet passed the Snell Foundation's tests for safety 6 or an F1447 certification label by the American Society for Testing and Materials (ASTM). 7

4

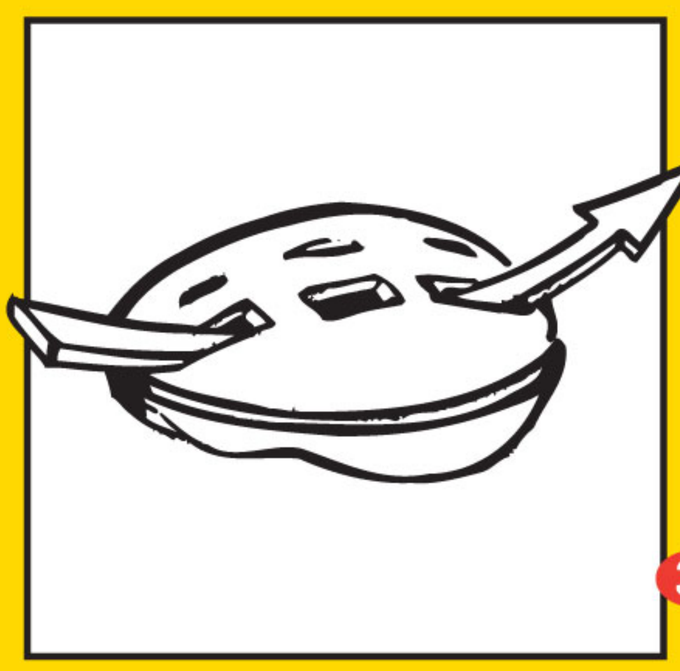
5

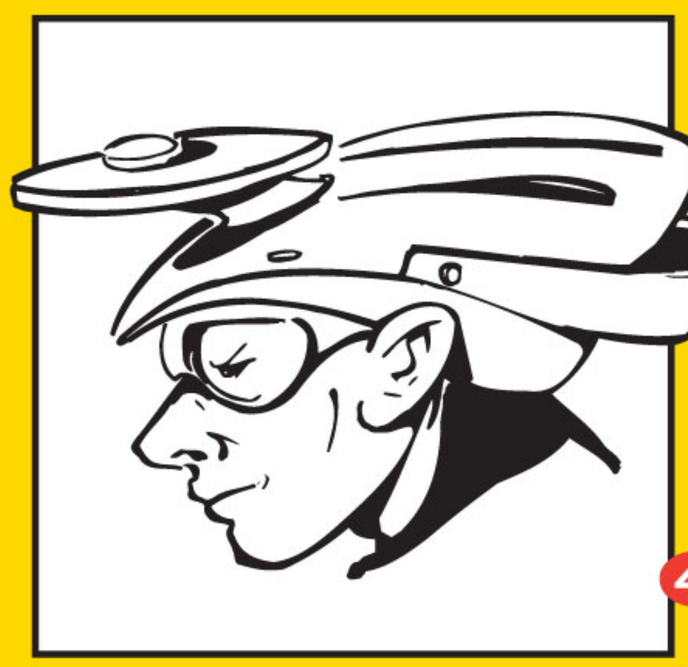
6

7

1

2


3


4

Fit: You must have a good fit. A snug fit means that if your head hits more than once, the helmet stays in place. Most brands of adult helmets come in two or three sizes, and you make them fit by adjusting the chin strap and putting foam pads around the inside.

Don't wear your helmet tilted back. It won't protect your skull in a frontal impact.

1 **Right** 2 **Wrong**

How To Check For A Good Fit

a. The helmet sits level on your head.

b. You can't easily shift the helmet to the front, back, or sides of your head.

c. With the strap tight, you can't possibly get the helmet off.

If not, adjust the straps, put in bigger pads, or try another size.

COMFORT AND COST

Cost: You can get a good Snell- or ASTM-rated bike helmet for about $30. Hard shells cost a little more than soft. More costly helmets usually aren't much safer, but have better ventilation, weigh less, and look cool. If you order a helmet from a catalog, first find someone who has it so you can try it on.

Ventilation: A helmet's ventilation depends on front-to-back air flow. 3 Good air flow comes from long, wide air vents, and air passages (or troughs) between the vents. (Bald, light-skinned cyclists beware: big vents can cause weird tan lines!)

Weight: Cheaper helmets usually aren't much heavier than expensive ones—and most cyclists notice no difference. If you think you need an ultra-light helmet, test-ride a regular one to make sure.

Look: You can pay lots for style. But even a low-cost helmet can look cool with an elastic helmet cover. And don't be fooled: No matter how aerodynamic a helmet looks, it won't help you go faster unless you are moving at warp speed. 4

WHY KIDS NEED HELMETS

Kids need helmets as much as adults do. Kids generally are not as careful, they do not know how to protect themselves, and when riding in a child seat they are especially vulnerable. Make sure kids wear their helmets snugly—and set an example by wearing yours!

5: TRAFFIC BASICS

RIDING PREDICTABLY

On the street, most motorists follow traffic rules. Traffic flows smoothly because drivers can predict what other drivers will do. A collision usually happens only when someone does something abnormal.

When you ride in traffic, you can maneuver better than the cars around you. You might be tempted to ignore traffic rules—but don't! **This is how most bicyclists get into crashes.** When you break traffic laws you put yourself in danger. Motorists and other cyclists won't know what you'll do next, making it harder to avoid you and prevent a crash. But if you *act like a vehicle*—signaling turns, turning from the correct lanes, and stopping at red lights—*drivers can predict what you will do.*

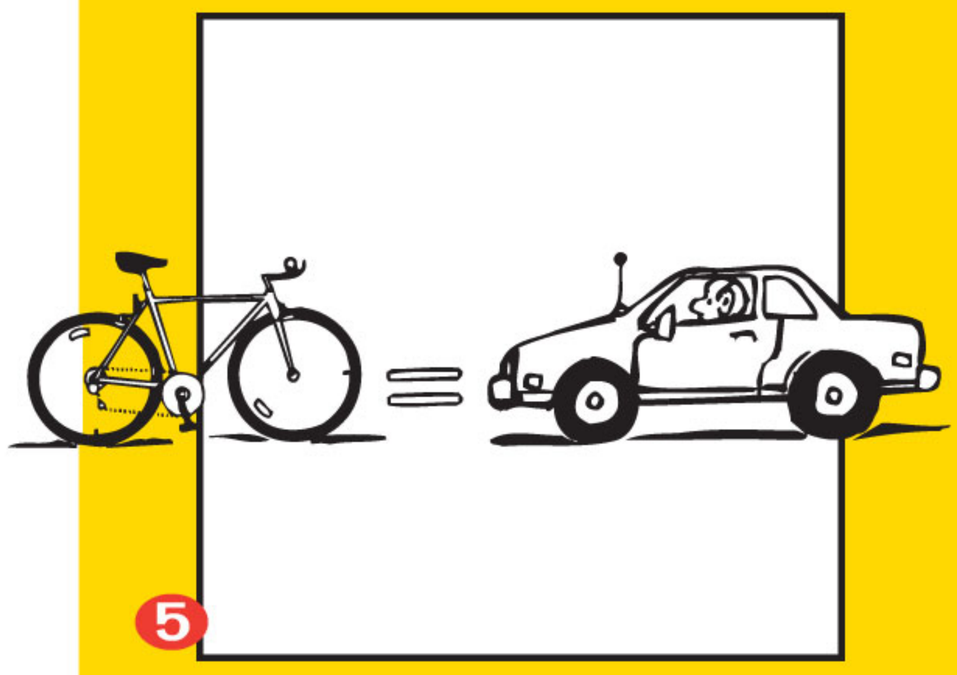
Being predictable is the key to safe bicycling in traffic. And if you follow traffic rules, motorists will come to respect bicyclists as drivers of vehicles—which is how Maryland law says bicyclists should act. 5 (See the back cover for details.)

Here are the basic rules for riding predictably:

Get Wise: Know the traffic rules you should follow and when others should yield to you.
See "Traffic Rules for Cyclists," below.

Be Confident: Learn riding skills so you don't hesitate in traffic, and always be courteous.
See "How to Learn Traffic Skills," page 12.

Communicate: Make eye contact, signal your moves, and wave when someone yields.
See "Communicating," page 13.



5

6

TRAFFIC RULES FOR CYCLISTS

You probably know that a red octagon means "stop." 6 But Maryland requires you, as a bicyclist, to know and obey **all** of the state's traffic signals and pavement markings. To learn these, read the *Maryland Driver's Handbook*, a free booklet from the Maryland Department of Transportation's Motor Vehicle Administration. Get a copy at any MVA full service or express office. For further information call 1-800-950-1MVA (1682) or from out-of-state call 1-301-729-4550.

Right of Way: "Right of way" means permission to go ahead of somebody else. As a bicyclist, you must give right-of-way in the same situations that motorists do. If you don't know when to yield to pedestrians and other vehicles, read the *Maryland Driver's Handbook*.

1

2

3

4

Sidewalks & Pedestrians: As a general rule sidewalks are not suitable places to ride bicycles as sidewalks are designed to accommodate the slower speeds of pedestrians instead of the faster speeds at which bicyclists ride. However, Maryland law states that, *"When permitted by local ordinance, a person may ride a bicycle . . . on a sidewalk."* [SECTION 21-1103 (B) (2)]. Check your local ordinances. If you ride on a sidewalk, yield to pedestrians; where there are lots of people, walk your bike. 1 Pedestrians do not like to be surprised by bicyclists passing them from behind, so it is a good idea to provide an audible warning of your approach. For example, call out, "Passing on your left." When approaching corners, alleys, and driveways, slow down and make noise.

Roads to Avoid: Bikes are banned on some Maryland roads; typically interstate highways, freeways, and toll roads. They are also prohibited from the travel lanes of any roadway where the posted speed limit is over 50 mph; however, riding on the shoulders of these roadways is acceptable. 2 Also, it's illegal to ride the wrong way on a one-way street.

What Police Will Do: 3 If you break a traffic law, an officer can stop and ticket you. If you don't have I.D. or bond money, you can end up in a police station, calling someone to post your bond.

What can you do when police stop you for the wrong reason? If gentle persuasion does not work, plead your case in court. Bring this book, along with copies of local and state traffic laws, to prove your point.

HOW TO LEARN TRAFFIC SKILLS

With practice, every adult can bicycle comfortably in traffic. Start honing your skills in quiet parking lots, on side streets, trails, or on farm roads. 4 Then practice on major streets early on Saturday and Sunday mornings. Below, we've listed a few skills that will help you ride in traffic safely.

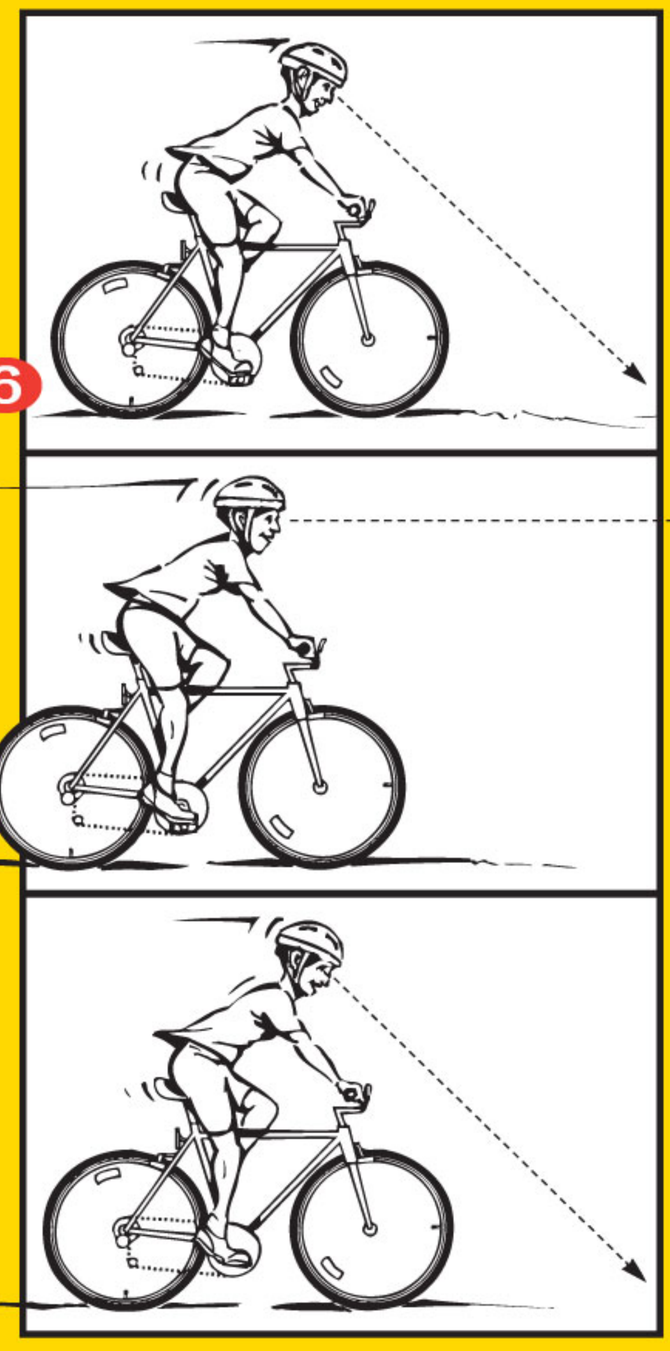
Look Behind You! To bike in traffic you must know how to look back over your shoulder while riding. This simple act helps you move left or right quickly to avoid hazards, change lanes, or make a turn. And looking over your shoulder helps drivers pay attention to you. Even if you have a mirror, you should always turn your head to look before you move left or right just as you'd do in a car.

How to Practice Looking Back: Here's how to learn to look back without swerving or slowing down:

a. Find a parking lot or wide, quiet street with some kind of lane stripe.
b. Ride along the lane stripe in a straight line.
c. Keeping your left shoulder steady, turn your head down and around to the left. Try to keep your arms steady so your bike moves straight. Then turn your head forward.
d. Turn your head back again, but this time pick out something to look at. 5 Try to keep moving straight. Then turn your head forward.
e. If you can't turn your head without turning your handlebars, it should help to drop your left hand to your thigh while you turn your head.
f. Next, practice turning your head right. Then practice turning your head while moving faster.

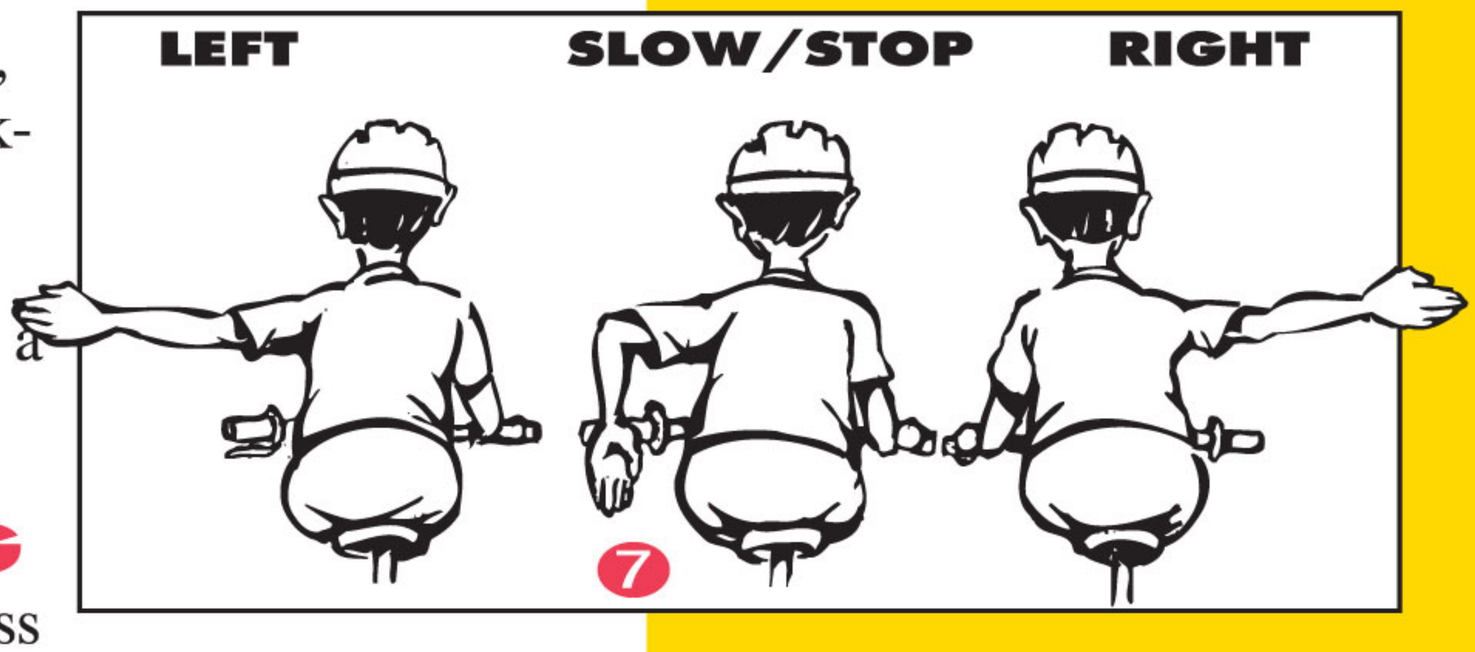
5

Where to Look: As you ride you have to avoid two kinds of things: hazards on the ground right in front of you, and cars and pedestrians ahead and on either side. You should always know how both the ground and the traffic around you look. To do this, get into the habit of looking first at the ground 20 to 30 feet in front of you, then up at traffic, then back down at the ground. 6 At first this will seem hard—maybe even strange—but with practice you'll do it without thinking.


6

Ready for a Brake: Always keep your hands near or over your brake levers—so you can stop fast in a pinch. When you brake, squeeze the front and back brakes at the same time. (To learn more, see "The Quick Slow-Down" on page 22.)

Shifting Gears: If your bicycle has a gear system, know how to shift without looking down. Always pedal when shifting, no matter how slowly. Learn shifting from a friend or a bike shop.

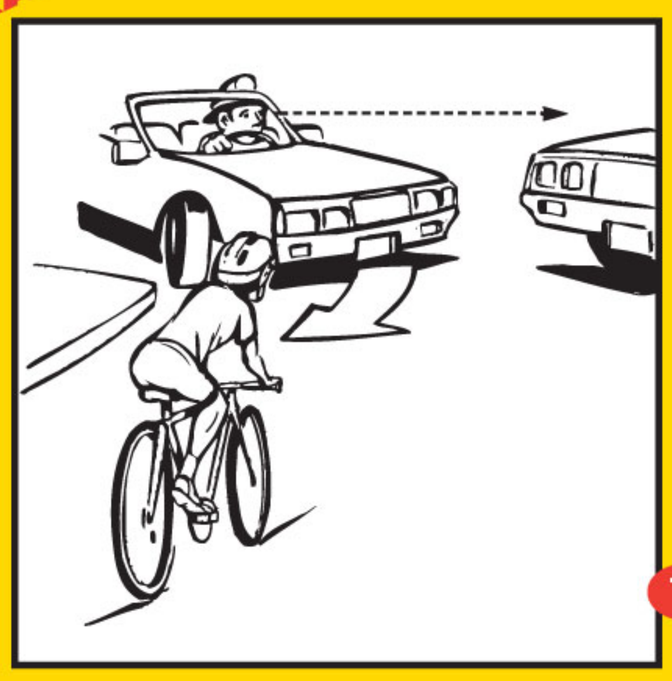


7

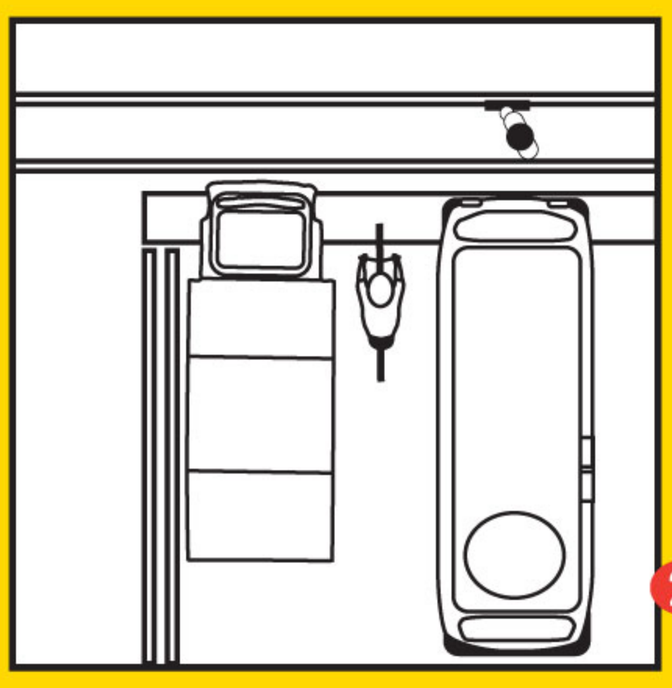
COMMUNICATING

Bikes are slower, quieter, and less visible than most other vehicles. So you should make drivers notice you, and try to communicate with them. And because a lot of bicyclists don't follow traffic laws, drivers don't always know what you'll do, even if you think it's obvious. Here are some ways to communicate:

Use Hand Signals: Whenever you change lanes or turn, signal with your arm. 7 If you're about to move in an unexpected way—like around a bunch of glass—point to the part of the road you're moving to. Also signal when slowing down—you don't have brake

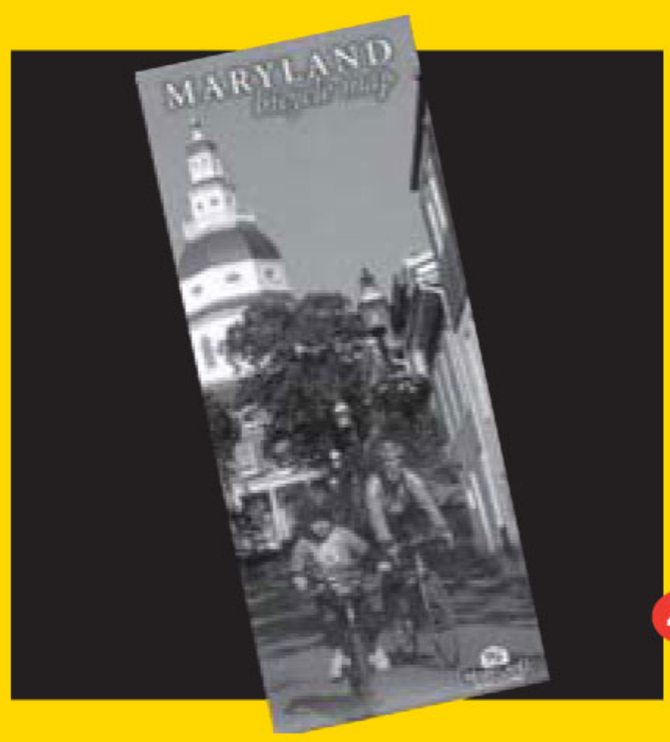


1



2

3



4

lights! The law says you must signal 100 feet before making a turn, so you might have to signal while shifting and braking—but don't do it if you'll lose control. You can yell your intentions, but remember that noisy traffic might prevent others from hearing you.

Yielding: When you are waiting for a car to pass you before you cross an intersection or change lanes, the driver might not realize that you are yielding. Wave at the driver to go ahead. Also, when drivers correctly yield the right of way, it is a good idea to thank them by waving or nodding.

Pretend You're Invisible: In some situations—like a car turning in front of you—it is a good idea to pretend the driver does not see you. Know in advance how you will avoid that driver. Can you stop in time? If not, slow down or plan how you'd steer out of the way.

How to decide whether a driver sees you:

- ▶ Watch for the car to move slower than it would if you were not there.
- ▶ Look at where the driver's eyes are. 1 If they are not looking at you, slow down and be ready to get out of the way.

Make Noise: Just as a car honks its horn when it comes out of an alley, you should make noise when you emerge from places where people can not see you—for example, when you emerge from between two vehicles to get into an intersection. 2 Use a horn or bell, or yell if you have to.

Headphones: Do not wear them. Maryland state law prohibits a person from wearing any type of headset or earplugs that cover both ears when riding on a roadway.

PICKING YOUR ROUTE

3 Before you ride, decide which streets and trails to take to your destination. Think about road construction and areas that have bad pavement. If a road has lots of traffic or lacks wide shoulders, consider taking a different route–even if it is a less direct one.

If your area has a map of bicycling routes, use it to pick your route. But remember:

- ▶ Maps do not tell you where crime might be a problem. Before you bicycle in an unfamiliar place, talk to someone who knows the area.
- ▶ Some maps show streets designated for cycling, but these streets still might have rough spots.

4 To get a copy of the Maryland Department of Transportation's bicycle map, see "Bicyclists' Resources" at the back of this booklet.

6: LANE POSITIONS, TURNING, & PASSING

BASIC LANE POSITIONS

Traffic law says that slower vehicles should stay to the right. But where exactly should bicycles ride? Here are some basics.

Never Ride Against Traffic: If you feel safer riding against traffic because you can see cars coming, you are wrong: **Twenty percent of all car-bike collisions result from cyclists going the wrong way.** Drivers moving down a street—and drivers turning onto the street—do not look for vehicles coming at them in their lane. And if they hit you, it will be much harder head-on than from behind.

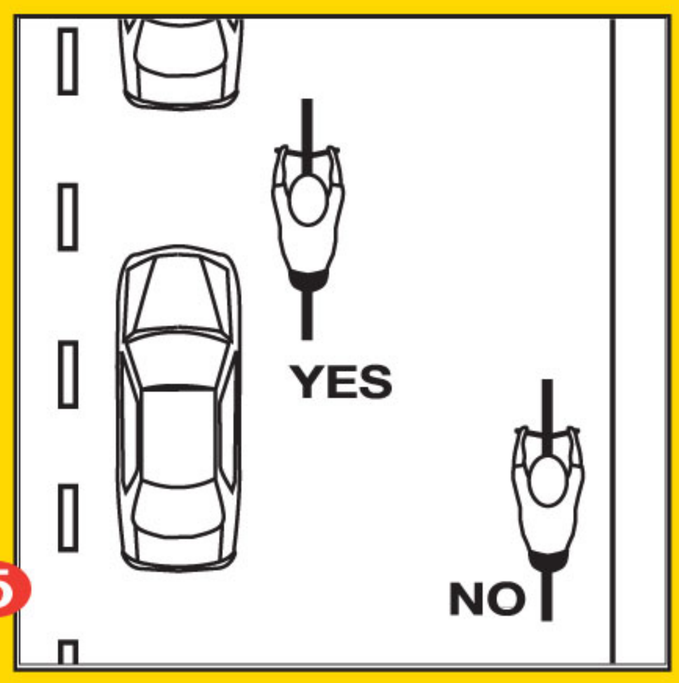
When to Stay Right: Stay right if you are moving slow compared to traffic, but remember: the farther from the curb you ride, the better motorists can see you—whether they are in your lane, oncoming, or on cross streets. 5 Riding farther from the curb keeps cars from passing you on the left and then turning right immediately in front of you—and gives you more room to avoid car doors, debris, and potholes.

When to Ride In the Middle: 6 It is safest to ride in the middle of the lane when: (a) You are moving at the speed of traffic; (b) the lane is too small for cars to pass you safely; (c) you are avoiding potholes or the doors of parked cars. If you are riding in the middle and traffic starts to move faster than you can, move toward the curb if there is room. Some special cases:

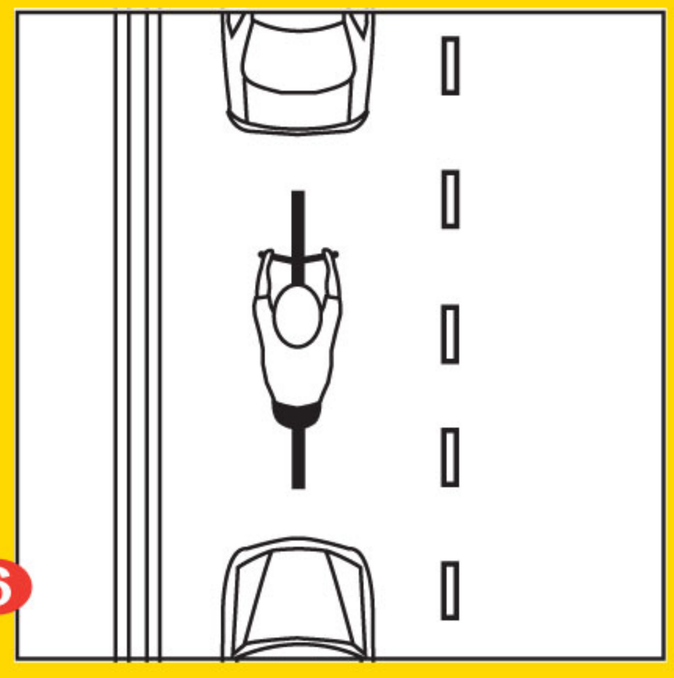
▶Bike Lanes: You can ride in the middle of marked bike lanes. 7 But when you find parked or moving vehicles in these lanes, follow the lane practices described above.

▶Dangerous Areas: If you come to a dangerous area—such as a bend in the road that you can't see beyond—ride in the middle of the lane to be more visible.

▶Underpasses: Ride in the middle on roads where they pass under other roads or train tracks, where there's no shoulder. 8 If you approach an underpass while riding on the right side of the road, always check traffic behind you before moving into the middle of the lane. Also, motorists behind you might get impatient, so communicate with them by using the "slow" arm signal (see page 13).

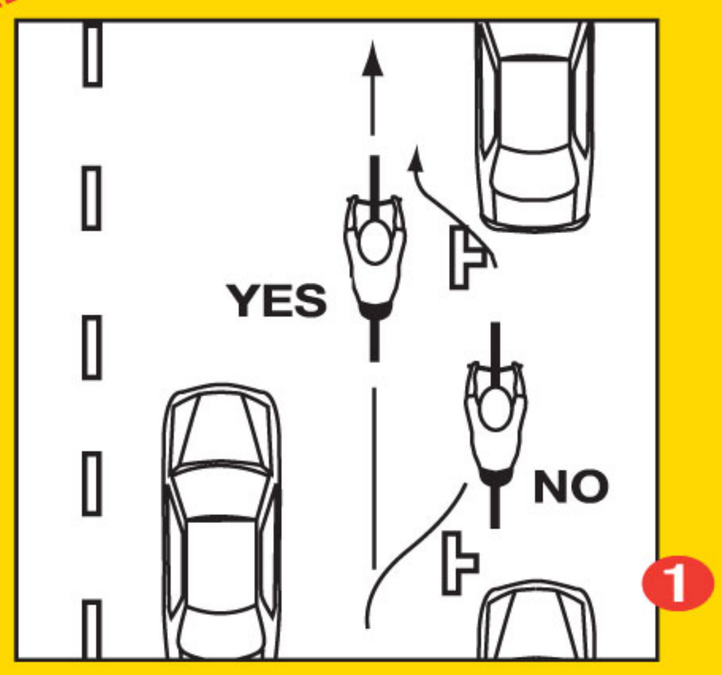


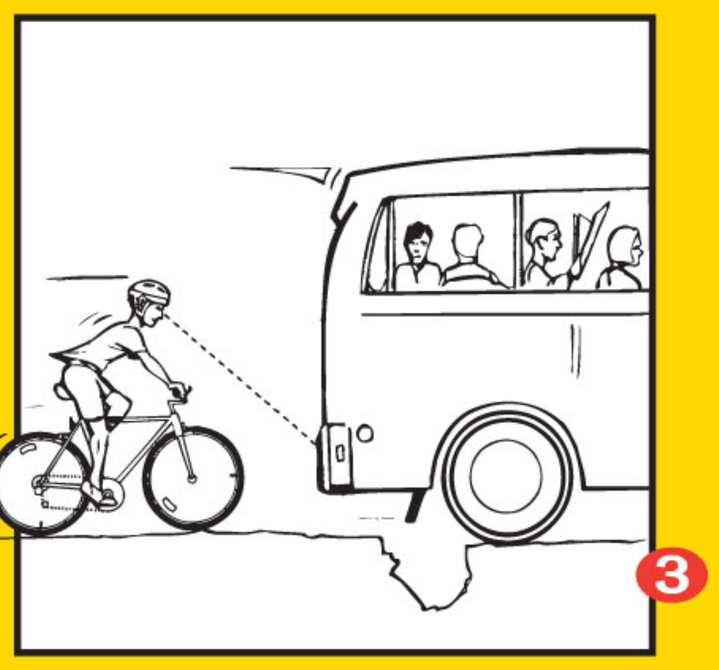
5

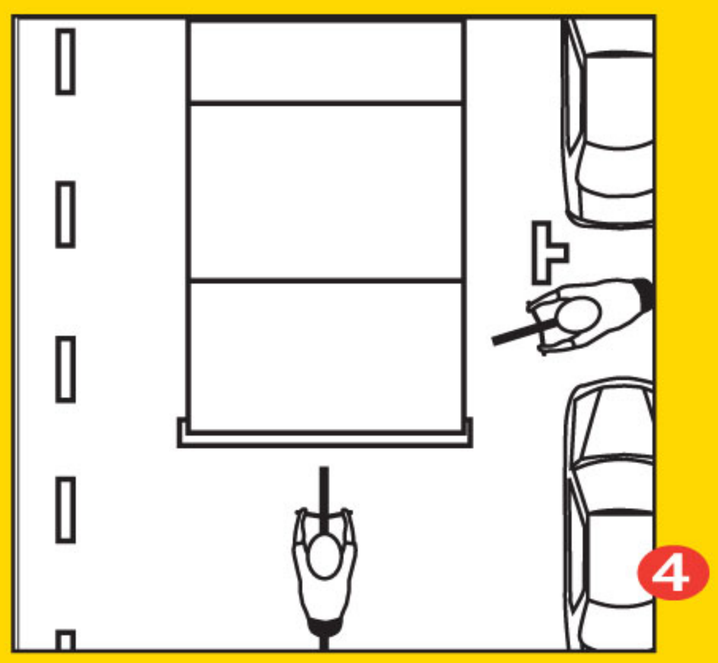

6

7

8







Parked Cars: Don't weave in and out of parked cars, because you will confuse drivers; ride in a straight line. 1 Ride at least four feet away so you do not get hit if someone opens their door. And if a car door starts to open into you, yell and brake; swerve out of the way only if you have enough room.

Riding with Others: A few things about riding with others:

- ▶Maryland law says that each person operating a bicycle on a roadway may ride two abreast only if the flow of traffic is unimpeded.
- ▶When another cyclist turns or changes lanes, do not assume it is safe for you to do the same. Always look behind you before you make a move.
- ▶When you are with a group stopped at a light, line up single file so you do not block or slow other vehicles.

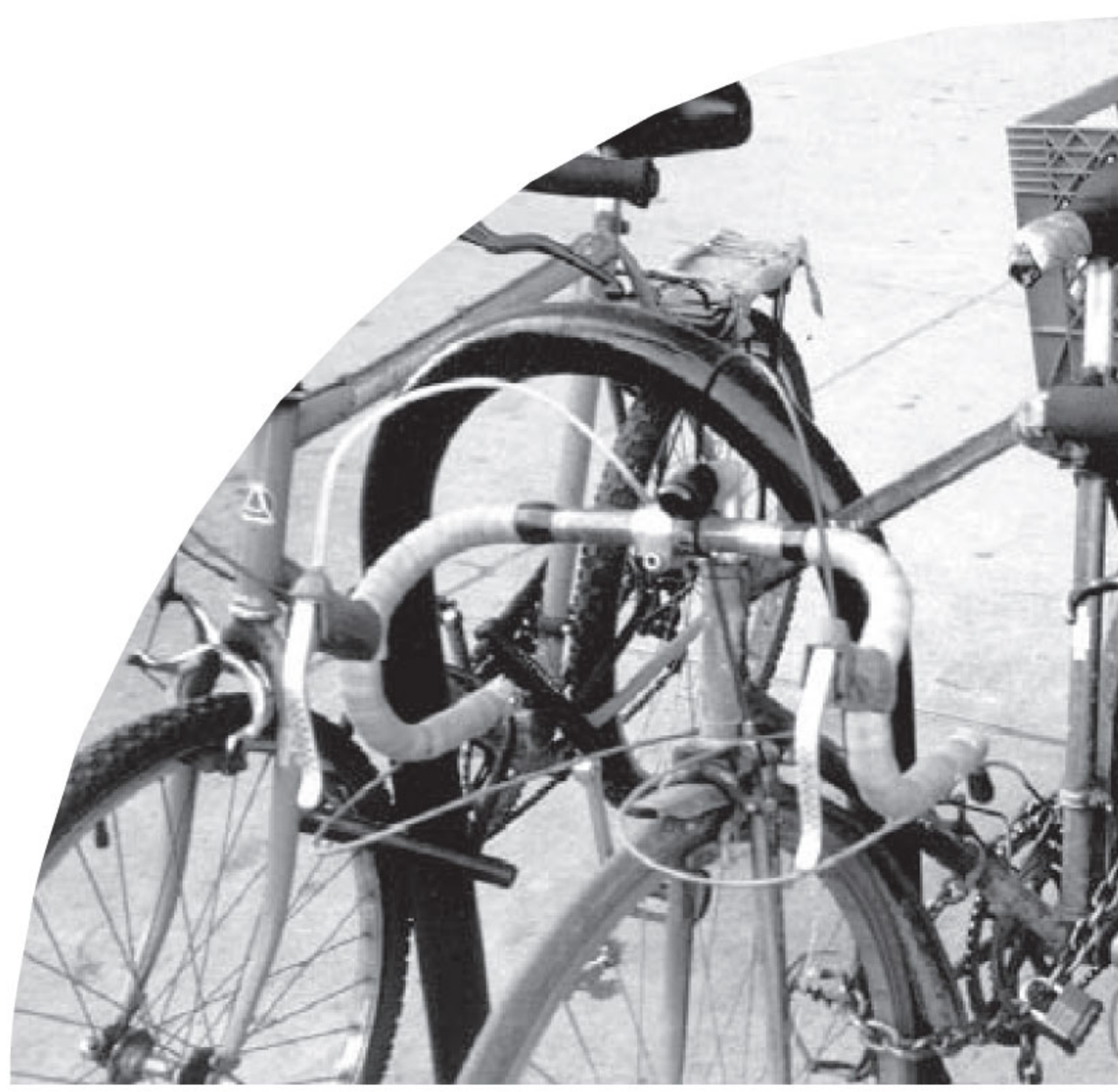
Blind Spots: To be safe, know where a driver's blind spots are—and stay out of them! 2

Do not follow a vehicle so closely that you can't see potholes or other pavement problems until you are on top of them. 3

If you are following a large vehicle—like a van, truck, or bus—don't follow so closely that it blocks your field of vision. 4

When you go over a hill, motorists behind you can't see you. Stay on the shoulder to the far right. If there is no shoulder, consider walking your bike until you've gotten well past the top of the hill.

Big vehicles coming at you can hide other cars behind them. Slow down or do not proceed until they get out of your line of sight. 5 (page 17)



INTERSECTIONS AND TURNS

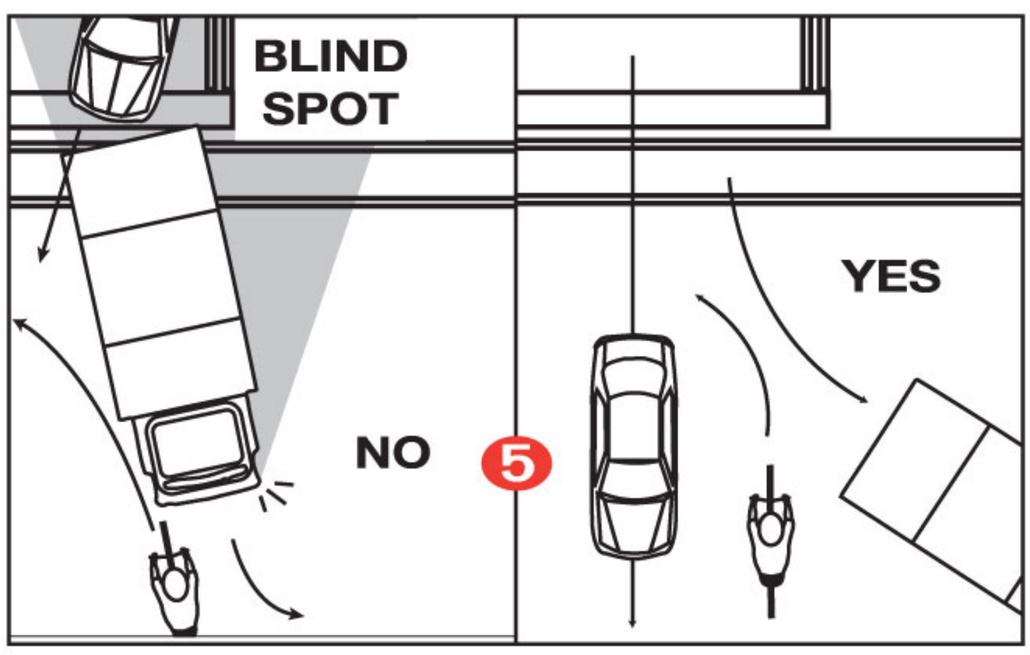
Almost half of car–bike collisions in traffic happen at intersections. This section tells you the safest places to put yourself when you reach an intersection, whether you're turning or going straight.

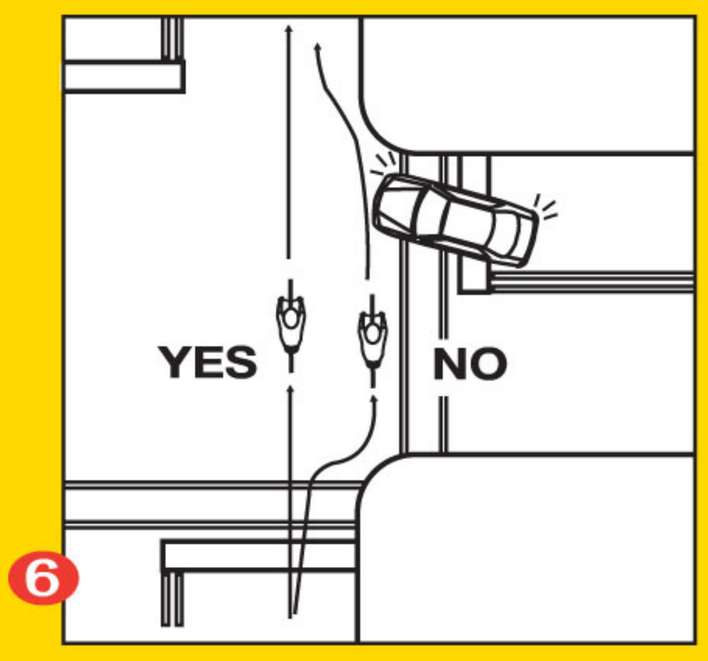
Things to Remember at Intersections:

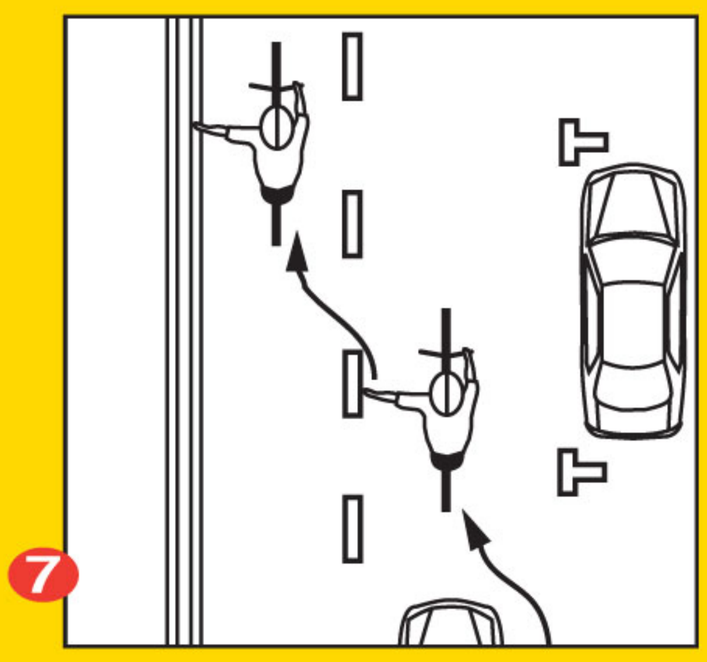
- When you're about to cross an intersection, do not veer to the left or right. Try to move in the straightest possible line to where you'll ride on the other side. 6
- Don't block crosswalks. It is dangerous to make pedestrians cross farther into the intersection.

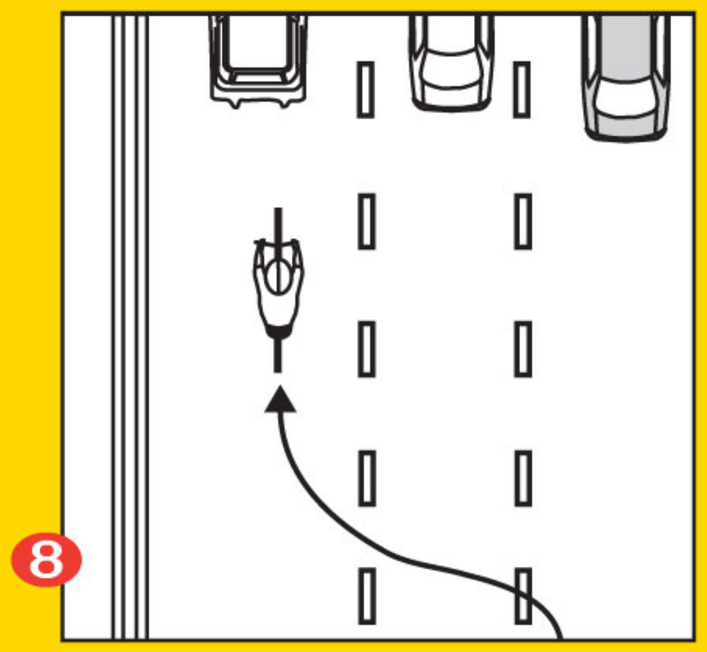
Changing Lanes Before a Turn:

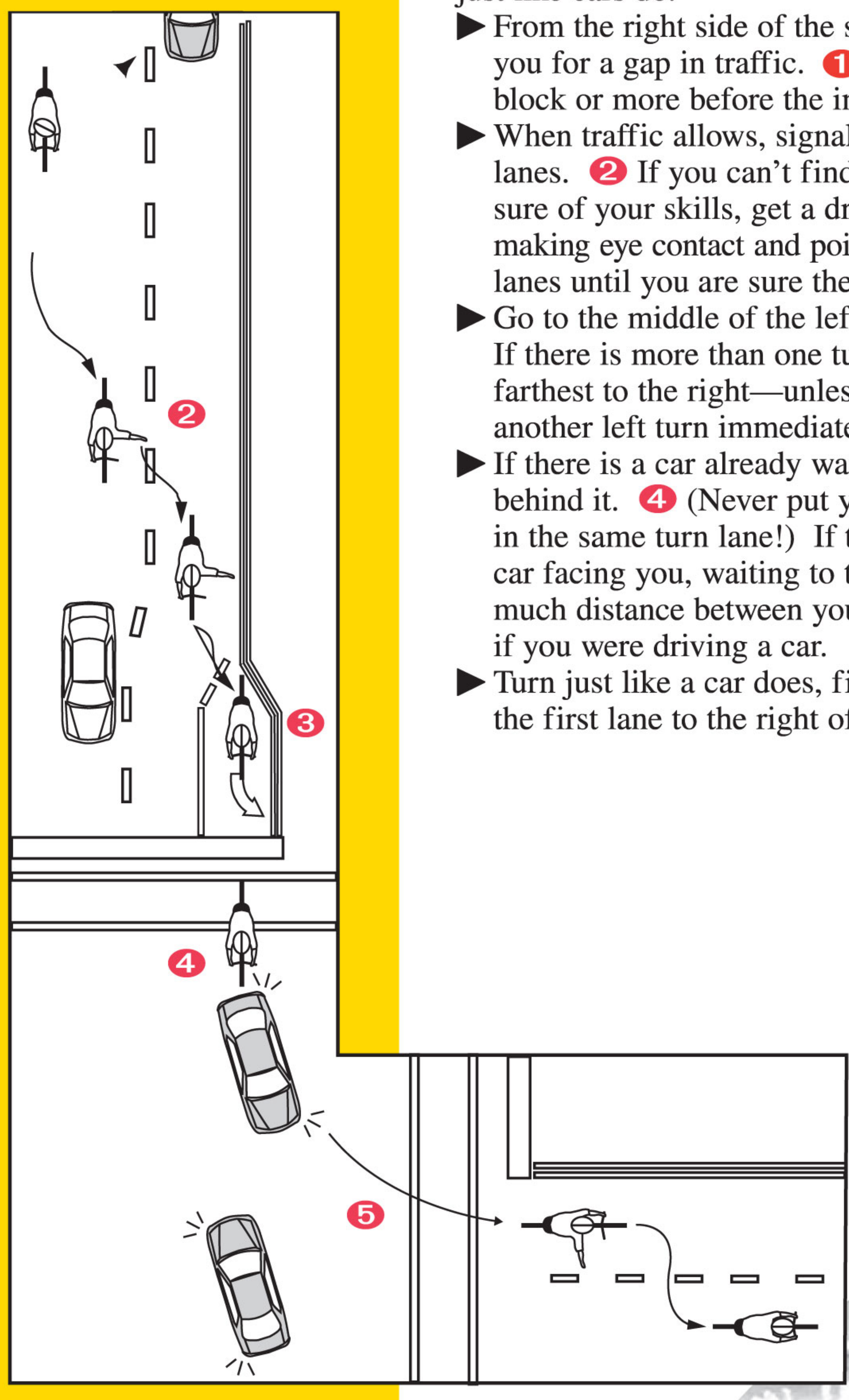
- When you are turning left on a multi-lane street where vehicles are not travelling much faster than you, merge left one lane at a time. 7
- Where traffic moves much faster, drivers will not have time to react to you—so it is safest to wait for a gap in traffic and move across all the lanes at once. 8
- Always signal and check behind you before changing lanes.





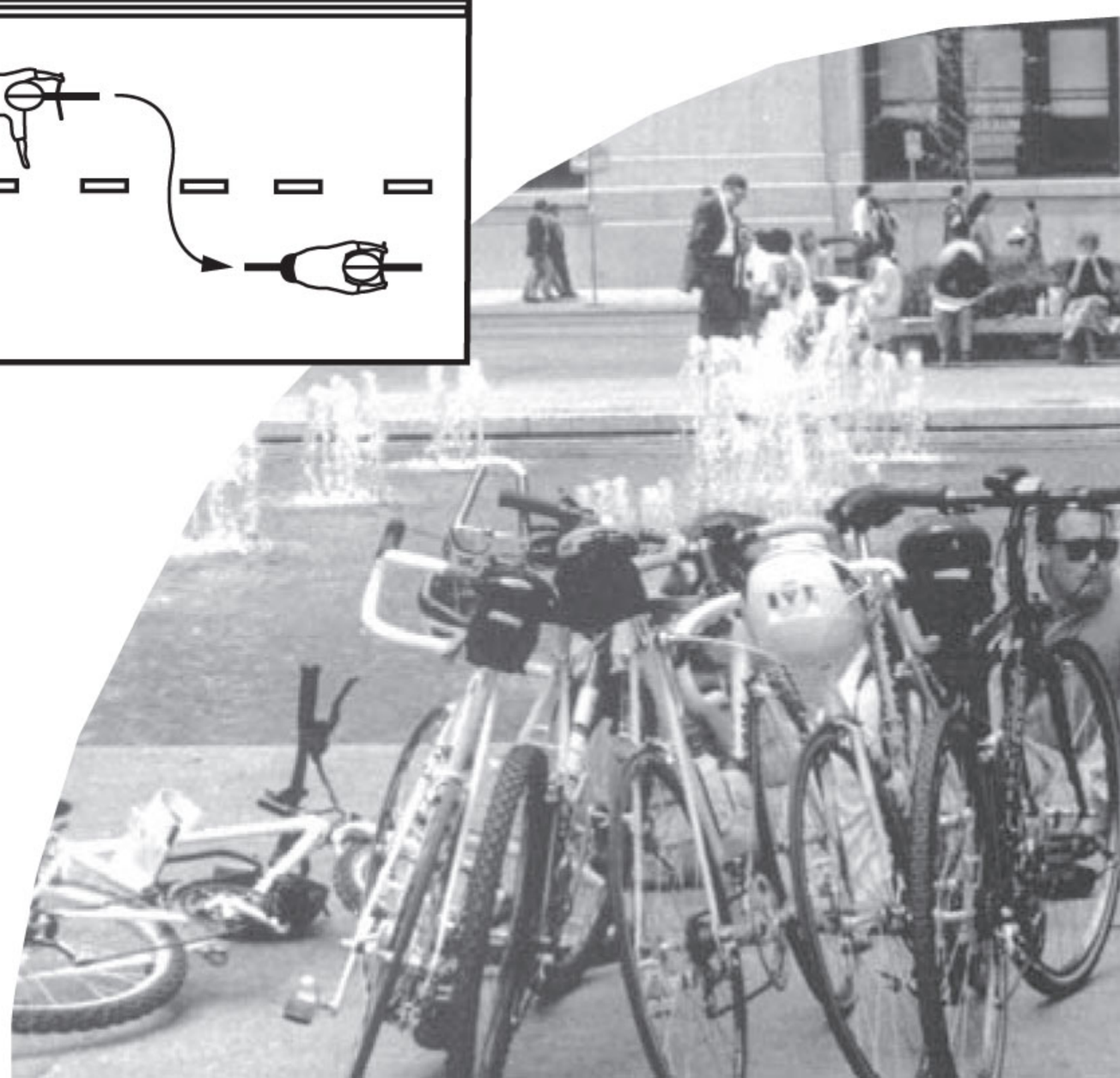






Turning Left from a Left-turn Lane: Follow these steps for making left turns just like cars do.

- ▶ From the right side of the street, look behind you for a gap in traffic. ❶ Start looking a half-block or more before the intersection.
- ▶ When traffic allows, signal left and change lanes. ❷ If you can't find a gap and you are sure of your skills, get a driver to let you in by making eye contact and pointing. Do not change lanes until you are sure the driver is yielding!
- ▶ Go to the middle of the left-turn lane. ❸ If there is more than one turn lane, use the one farthest to the right—unless you are making another left turn immediately.
- ▶ If there is a car already waiting to turn left, get behind it. ❹ (Never put yourself next to a car in the same turn lane!) If there is an oncoming car facing you, waiting to turn left, place as much distance between you and it as you would if you were driving a car.
- ▶ Turn just like a car does, finishing your turn in the first lane to the right of the center line. ❺



Turning Left with No Left-turn Lane: If there is no turn lane, ride about four feet from the center stripe—far enough out so a left-turning car behind you can't pass until you've finished the turn. 6

If a car is stopped at the intersection and you can't tell whether it is going to turn left, do not try to pass it on the left. Stay behind it until it gets through the intersection.

When turning left from a one-way street to another one-way street, you must turn into the lane closest to the left side of the street. 7 Make subsequent lane changes when it is safe to do so. Unless posted otherwise, Maryland law allows left turn on red. You may turn left after stopping at a red light and yielding to pedestrians and vehicles.

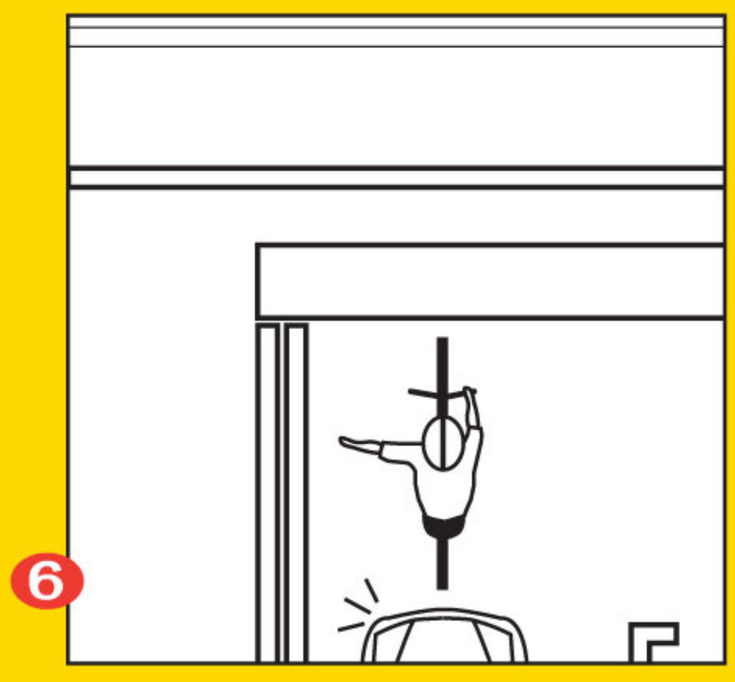
The Box Left Turn: Use the box left turn if you can't merge left before you reach the intersection. 8 Here's how:

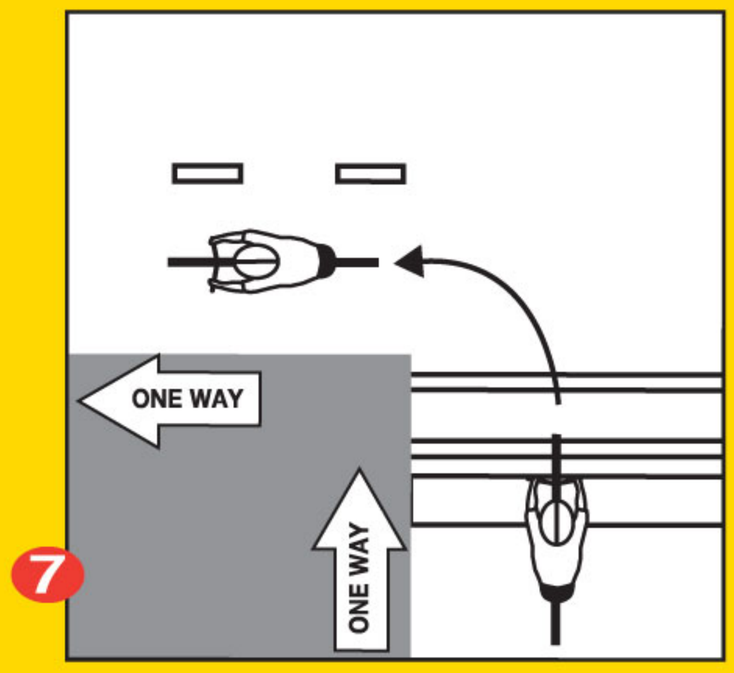
a. Stay in the right lane and ride across the intersection on the left side of (not in) the crosswalk.

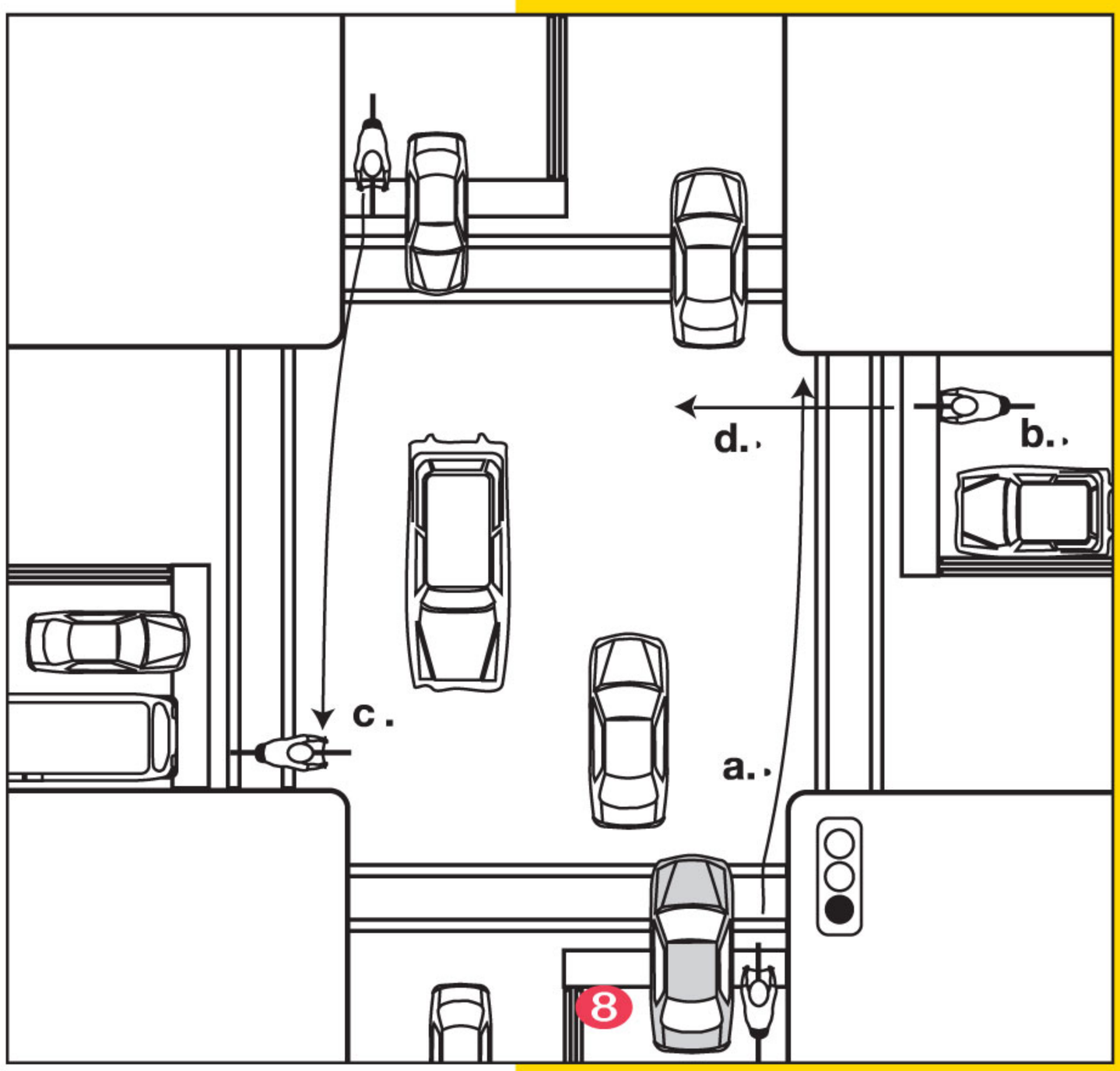
b. Just before the opposite corner, check whether there is room for you in the traffic lane to the right of the crosswalk, behind the stop line. If there is room, go there and align yourself with traffic.

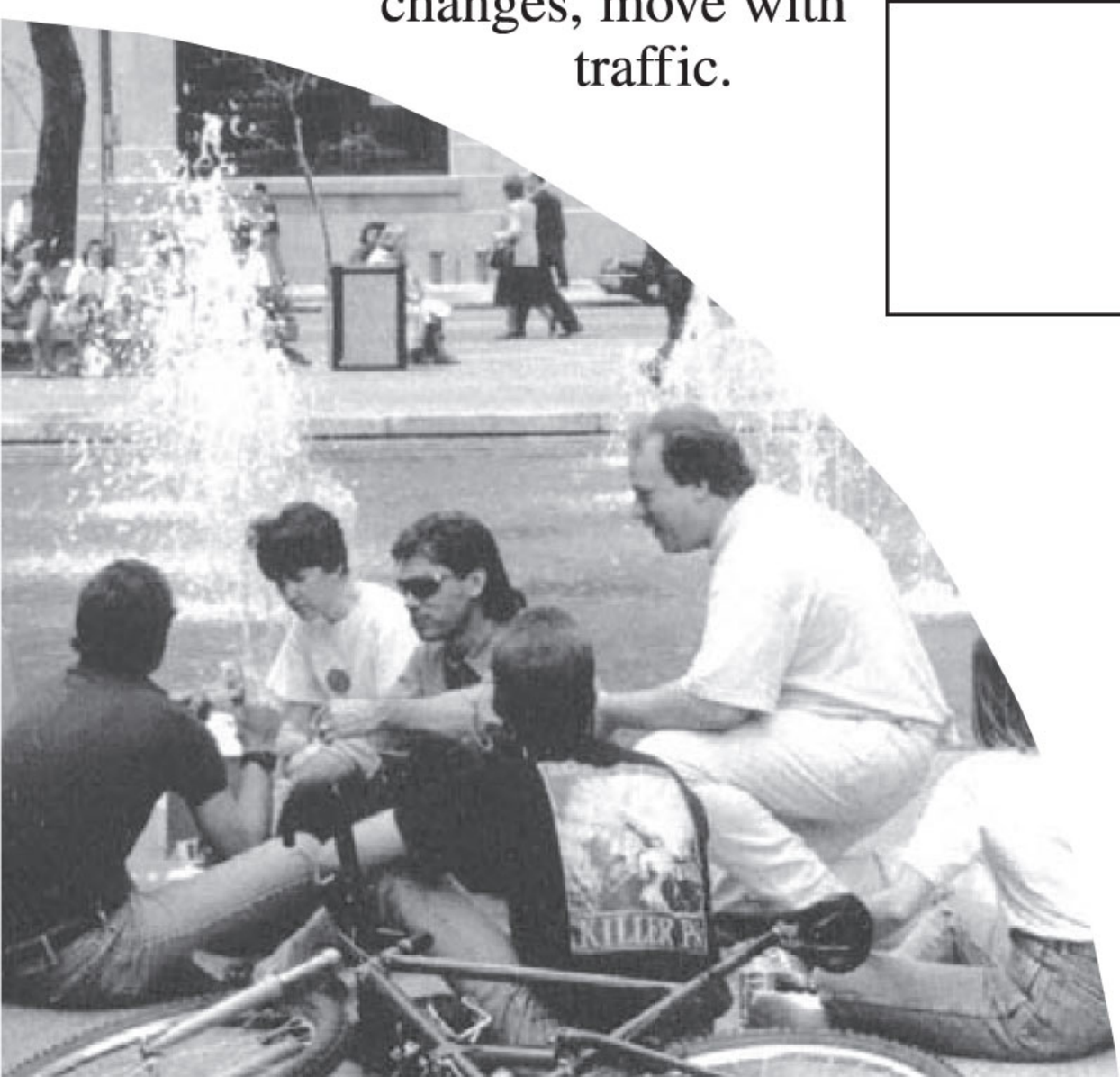
c. If there is no room behind the stop line, stop on the intersection side of the crosswalk and align yourself with traffic.

d. When the traffic light changes, move with traffic.

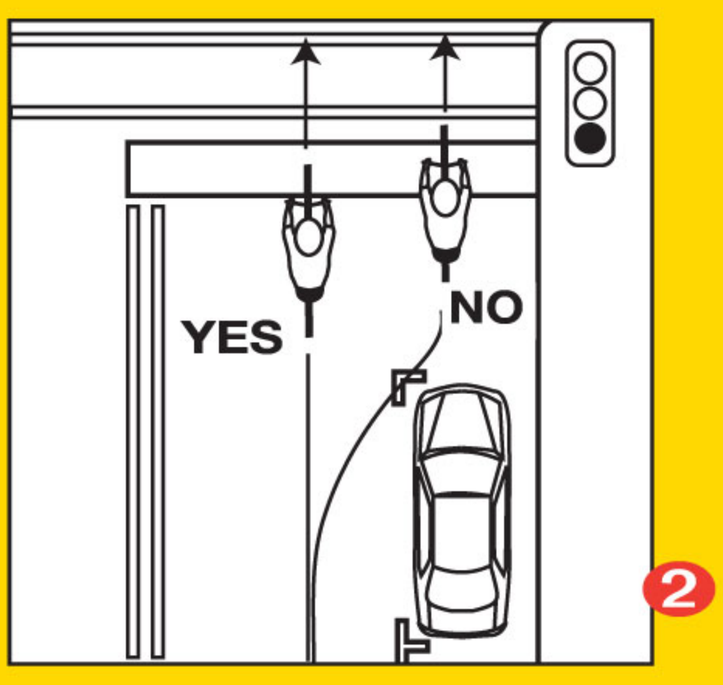




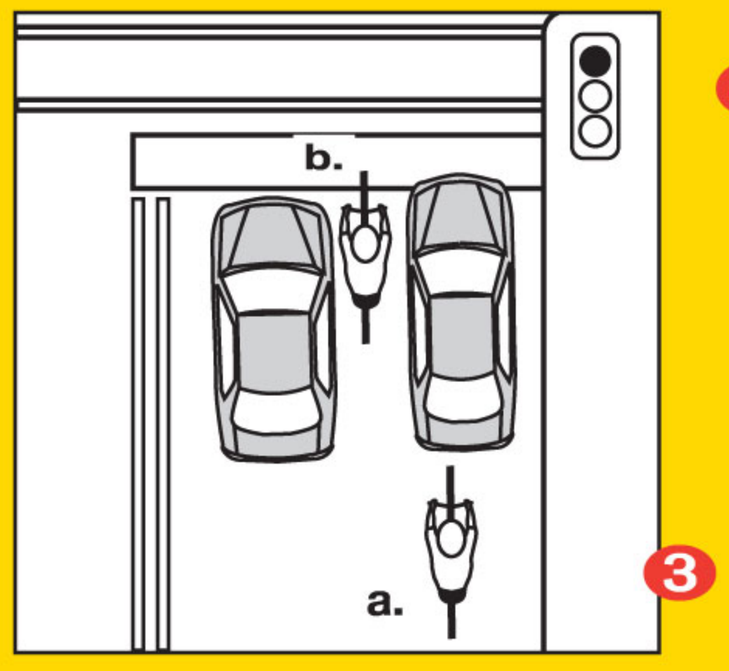




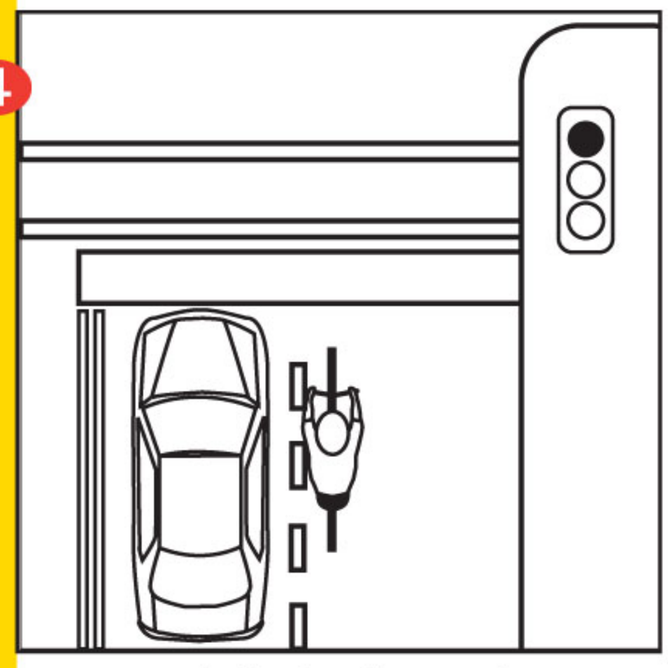
1



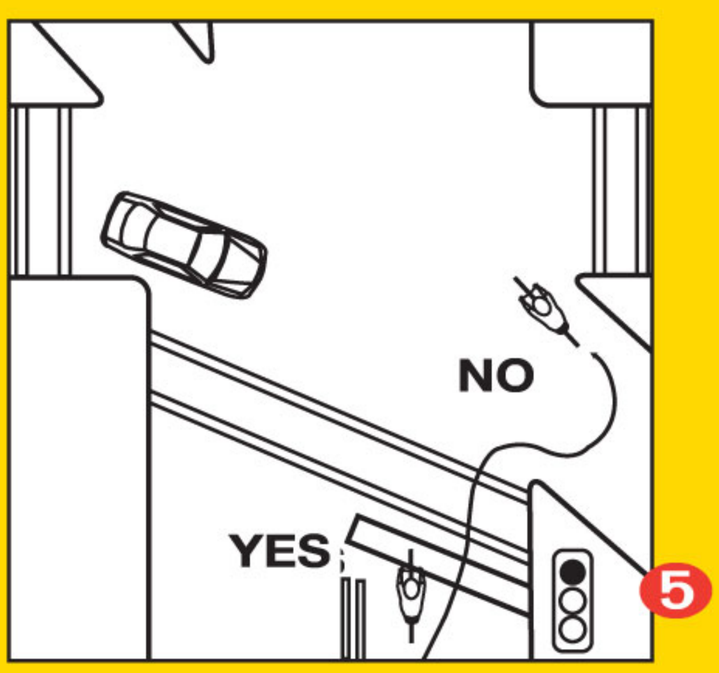
2



3



4



5

Stop Signs and Turns on Red: At a stop sign or right turn on red, the law says you must stop—not just slow down. 1 Remember to act like a vehicle as follows.

- ▶ If you are at a stop sign and a vehicle on the cross street got there first, let it go through first.
- ▶ If you are turning on red, yield to pedestrians and to vehicles traveling on the cross street.

Don't Veer to the Curb: Don't veer into the right-turn lane as you go through the intersection. 2 You are easier to see if you stay away from the curb. And you won't have to move back over when you get across the intersection.

Cars Stopped in Both Lanes: 3
(a) When cars are stopped in the left and right lanes, it is safest to stop in the middle of the right lane.
(b) But if the right-lane car is turning right and you are sure of your traffic skills, stop on the left side of the right lane. Stop where drivers in both lanes can see you.

Right on Red Allowed: At a red light where right turn on red is allowed, stop on the left side of the right lane—leaving enough room for other right-turning cars. 4 If a car is stopped in the left lane, stop where drivers in both lanes can see you.

Three-way Intersection: At a red light in a three-way intersection, do not cross the diagonal street to wait on the next corner. 5 You will confuse drivers about which street you are really traveling on.

PASSING

In most cases you should pass cars in your lane as you would if driving a car: look behind you, signal left, get into the left lane, and pass. Here are some things to remember about passing:

Pass Left: Pass moving cars on the left when you can. That is where motorists expect you to pass, so that is where they look.

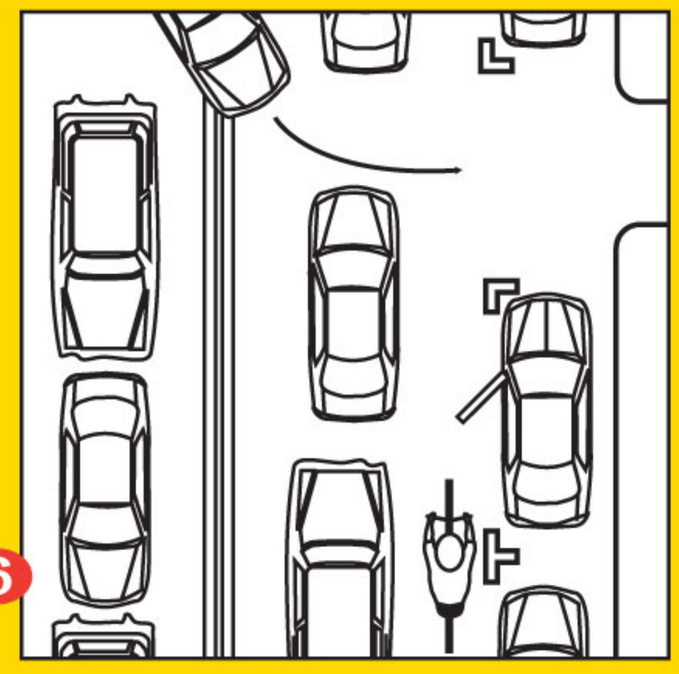
Don't Pass on Turn Side: If a vehicle is about to turn, don't pass it on the side it is turning toward.

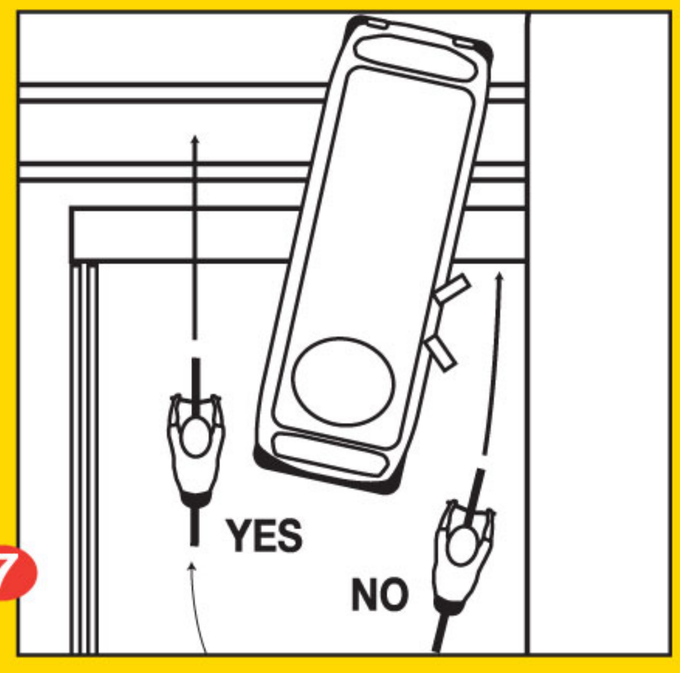
Opening Doors: When you pass a stopped car, watch out for the driver or a passenger opening their door. Pass four feet from the car, or (if the car is stopped in traffic) pass on the side with no passengers.

Cars Speeding Up: If you are passing a car and it speeds up, stay in your lane and slow down. After the car passes you, look back, signal, then merge back behind the car.

Squeezing between Cars: 6 If you are in a traffic jam with cars backed up for at least a block, it is safest to get in line with the cars and wait it out. But if you do squeeze between the cars to get through, here is what to watch for:

- ▶ A car door can open in front of you, on the left or right, at any time. Look inside cars for passengers who might get out. Keep your hands on your brake levers.
- ▶ When pedestrians cross the street in the middle of a traffic jam, the last thing they expect is you zooming down on them between the cars. Watch out for pedestrians, especially when passing trucks or buses that you can't see in front of.
- ▶ If a space opens up in the traffic jam—and you are near a driveway or cross street—watch for a car from the opposite direction turning into your path.

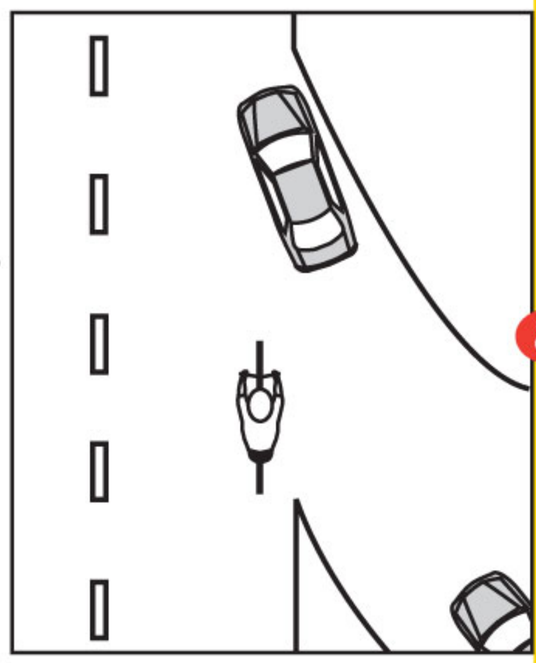

6

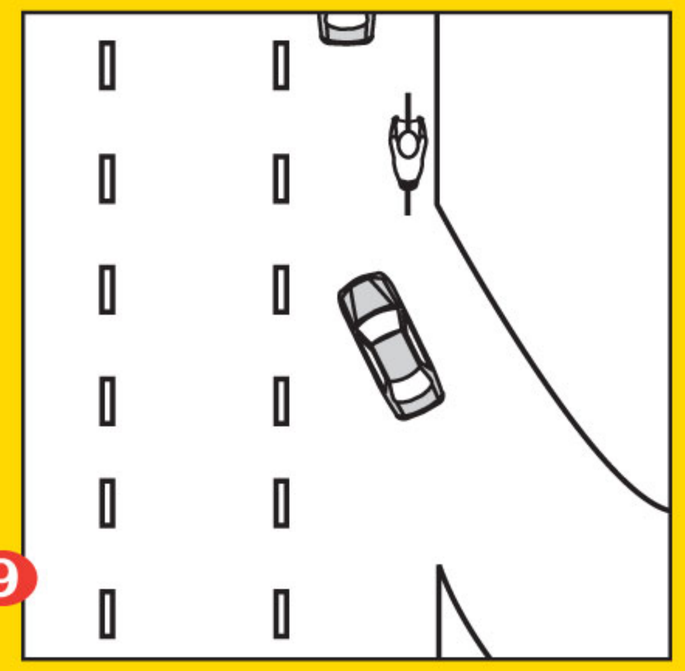


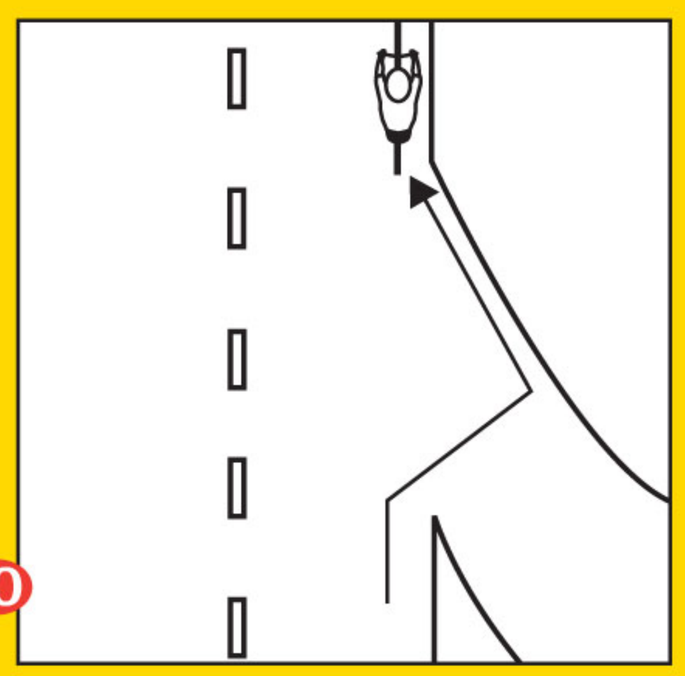
7

Passing Buses:
Here are a few tips for passing buses at intersections or bus stops:

- ▶ When you come to a bus that is nearing or stopped at a bus stop, don't pass on the right. 7 You might get squeezed into the curb or hit a passenger.
- ▶ When you pass a bus with its rear angled out into traffic, pass on the left and look around carefully. Pass the front of the bus with plenty of room in case it pulls out suddenly or pedestrians appear.
- ▶ Don't pass a bus to turn right immediately in front of it. Buses sometimes speed up suddenly or start moving before the traffic light turns green.


8

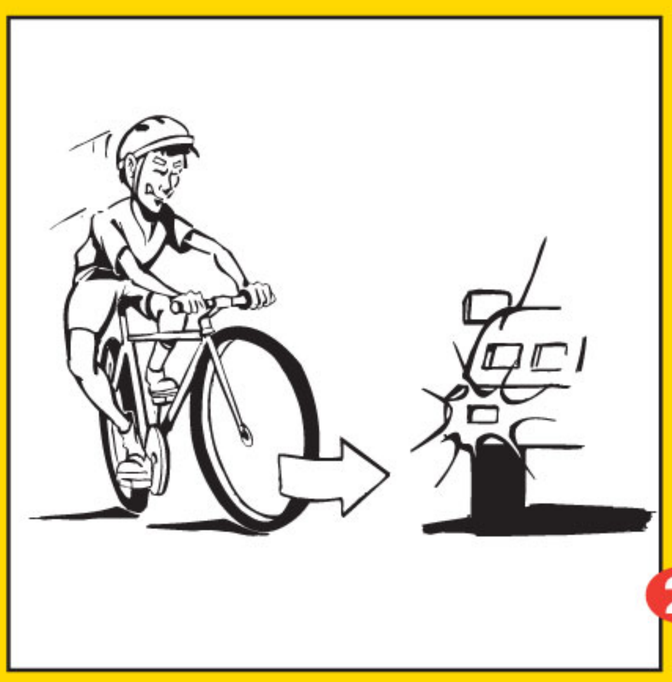

9

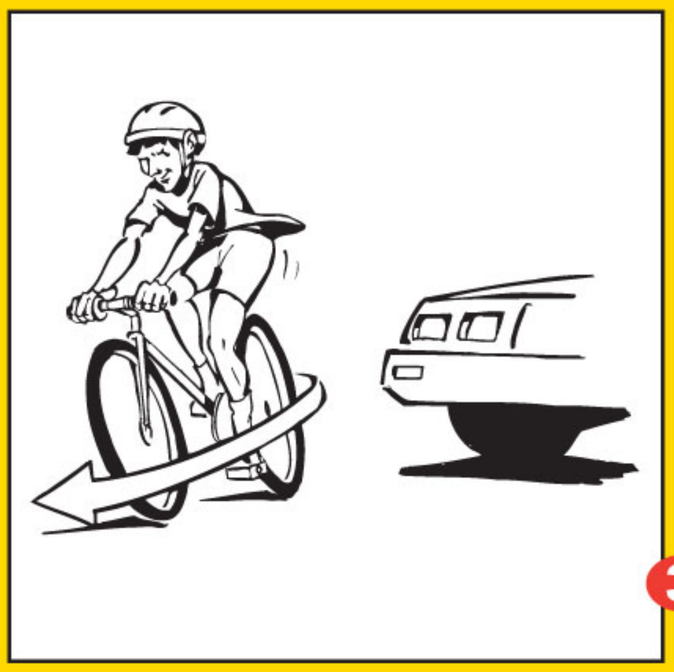

10

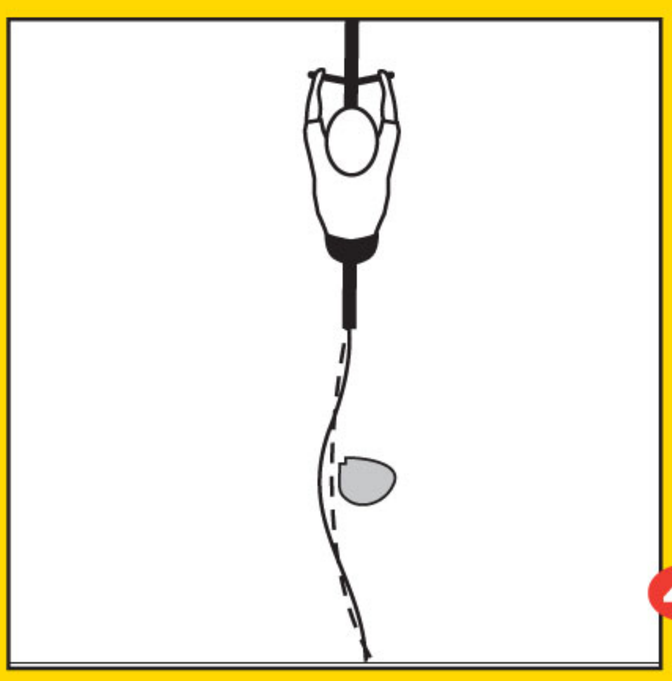
Highway Ramps: When an exit ramp merges from the right, first look over your right shoulder to see what is coming. If a lot of cars are merging, stay straight so they pass before you on the right. 8 As you move farther, they will pass behind you on the left. 9 If there is a break in the merging traffic, move to the right as soon as you can. 10 If there are too many cars, stop and wait before the ramp.

Passing Cyclists: Cyclists can swerve faster than cars—so when you pass a bicycle, pass at least three feet away on the bicycle's left (not the right). Always shout "Passing on your left!" before you pass so nobody is surprised.

7: TROUBLE SITUATIONS







EMERGENCY MOVES

When you are riding quickly and something gets in your way, slamming on the brakes might not be the best reaction. This section describes some emergency moves that you can practice in a quiet parking lot. Start slowly, then work your speed up. Practice—so when you need an emergency move, you make it automatically.

The Quick Slow-Down: When you stop fast, your weight shifts from your back wheel to the front. Even if you use both your front and back brakes your back tire can skid and start to lift. To slow down quickly: 1

a. Push yourself as far back on the bike as you can. This keeps weight on the back tire.

b. Position head and torso as low as you can so you don't flip.

c. Squeeze both brakes evenly. If the rear tire lifts off the ground, ease up on the front brake. If the rear tire starts to skid or slide, ease up on the rear brake.

The Instant Turn: Use the Instant Turn when a car turns in front of you and you can't brake in time. To make a very sudden right turn, steer sharply left—toward the car—which makes you lean right. 2 Then turn right hard, steering into the lean and away from the car. 3

The Rock Dodge: The Rock Dodge is just a quick turn of the front wheel to miss a rock or hole right in front of you. 4 At the last second, turn the front wheel sharply left and back right again. Both wheels should miss the hazard.

How to Fall: Most serious bicycle injuries involve brain damage, so the best way to protect yourself in a fall is by wearing a helmet. Otherwise, it is not easy to prepare for a fall. But if you have time to think:

- When about to hit a car, do not try to wipe out first; instead, stay upright as long as you can. If you get low you risk going under the wheels or hitting the sharpest parts of the car.
- If you go flying, tuck your head, arms, and legs into a tight ball and try to roll when you hit the ground. If you stick your arms out you are likely to break them, or your collarbone, or both.

Dogs: 5 Here are some of your options when a dog chases you:

- **Just stop.** The dog might stop if you do. If it does, slowly ride or walk away.
- **Stop and get off your bike, quick.** If attacked, try to keep the bike between you and it. Shout something commanding, like "Go home!"
- **Try to outrun it.** This might be a good idea if there is more than one dog. *Do not* try to outrun it if you are not sure you can; too many cyclists have wiped out when running dogs get caught in their wheels. If you go for it, try a squirt with your water bottle to slow Fido down. *Don't* try to hit the dog; you could lose your balance.
- **Use a dog-repellent spray.** 6 But be careful: wind could blow the stuff back into your face. If a dog bites you, get to a doctor or hospital right away. Report the attack to police. If you can identify the dog, you might avoid a rabies test.

Pedestrians: Maryland law says you must stop for pedestrians walking in a crosswalk on your half of the roadway. So what happens when you come to a green light and find a pack of people darting across the street? As a driver of a vehicle (your bicycle) Maryland law says you must exercise due care to avoid colliding with pedestrians upon roadways.

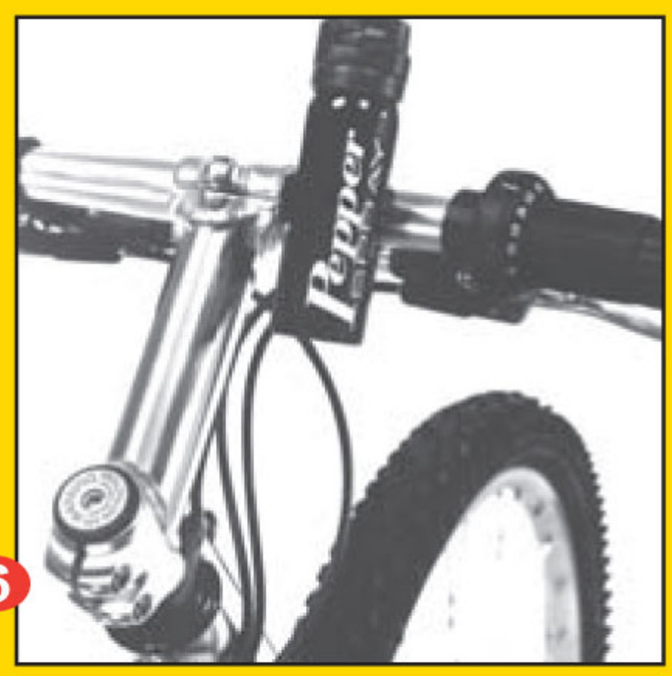
- Warn them with a horn, bell, or by shouting. Remember: pedestrians look for cars, not bicycles.
- If there are still people in the crosswalk, slow down or stop to avoid a collision. If you go between pedestrians, make sure they see you and pass them carefully. Never go between parents and their children.

Railroads: Some railroad tracks cross streets diagonally. If you go over these tracks without changing your direction, your tires might get caught between a track and the road. 7 Instead, try to cross tracks at a right angle—especially when the street is wet.

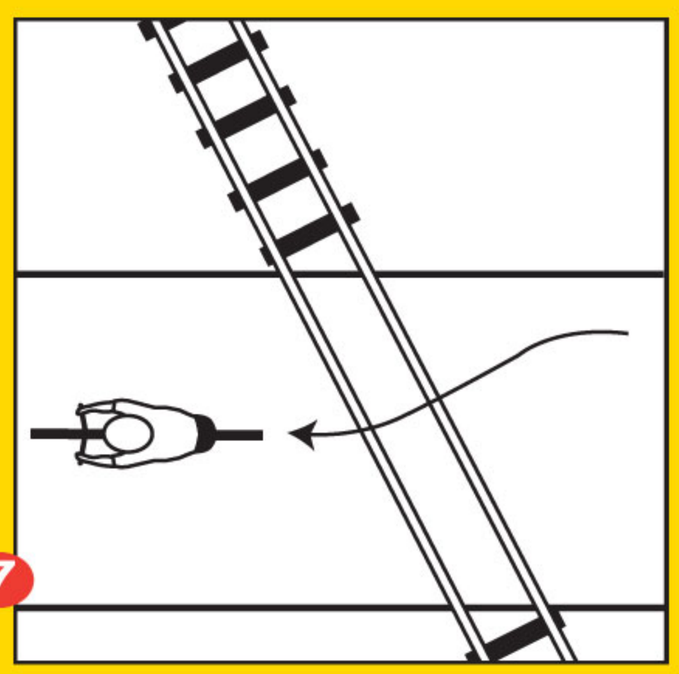
Gravel and Sand: Turning or braking suddenly on gravel or sand can make you slide or wipe out. See "Braking" on page 30 to learn how to brake when it is slippery.

Drain Grates: 8 Avoid drain grates with long openings that can catch your tires.

5

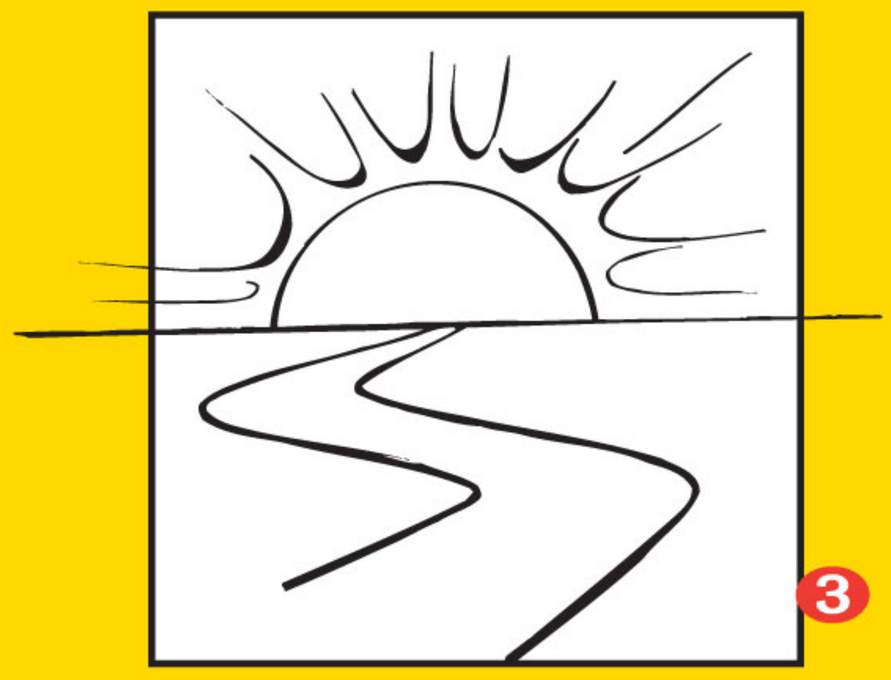


6



7

8



Truck Wake: When riding on a highway and you are passed by a large truck or bus, keep a firm grip on your handlebars. The suction of the vehicle's wake could pull you suddenly to the left.

Assault: If you are afraid to bike in a certain neighborhood, don't—or go with friends and stay on busy streets. Here are some other tips:

- The best defense is to stay alert. If you see someone who looks like they will hurt you, stay away from them.
- In places where you think you are about to be attacked, don't stop for any reason.
- Carry a defensive spray such as dog repellent or Mace, if legal in your area. Make sure you can grab it quickly. (Look for a handlebar holder.) Be careful: A spray can easily be turned against you by the wind or even your attacker

If you get mugged, *don't fight*; your bike or other property isn't worth your life. Try to remember the mugger's features, then go the nearest phone and call police.

CONFLICTS WITH MOTORISTS

Some motorists act mean toward bicyclists. Some will cut you off or curse at you because they don't understand that you must observe the same traffic rules they do. What should you do?

Rule 1: Don't start a fight. 1 Don't start a fight—no matter how mad you get. If you lose your cool, the motorist might decide to get back at the next bicyclist they encounter. Or, worse, the motorist might decide to smash **you** with their two-ton automobile and speed off before you can even start to say "license plate."

Rule 2: Report harassment. 2 Motorists who touch you or put you in danger might be guilty of assault. Stop and write down everything you can remember: the license plate number, type of car, and where and when it happened. Then call police.

Rule 3: Take the long view. 3 If all cyclists follow traffic laws, motorists will see that cyclists belong on the street. You can help! Whenever possible, tell receptive motorists they should share the road. Meanwhile, government and bike advocates are carrying the bicycling message to people where they learn best: in school and at work.

WHAT TO DO AFTER A TRAFFIC COLLISION

If you are hurt in a traffic collision, don't ride away or shake off what seems like a minor injury—you might find later that it is worse than thought. Instead:

- Call the police. If needed, get medical help immediately.
- Get the following information from every vehicle: driver name, address, phone number, driver's license number, license plate number, make of car, insurance company name and policy number.
- Get the names and phone numbers of witnesses.
- Get the police report number from police on the scene.
- Write down how the accident happened while it is fresh in your memory.
- Keep (or photograph) any damaged clothes or equipment.

Also, if you are a victim:

- Don't get mad at the scene. Keep a level head so you can ask questions and take notes.
- If injured, don't move unless you are sure you won't hurt yourself more.

BUS & RAIL SAFETY TIPS

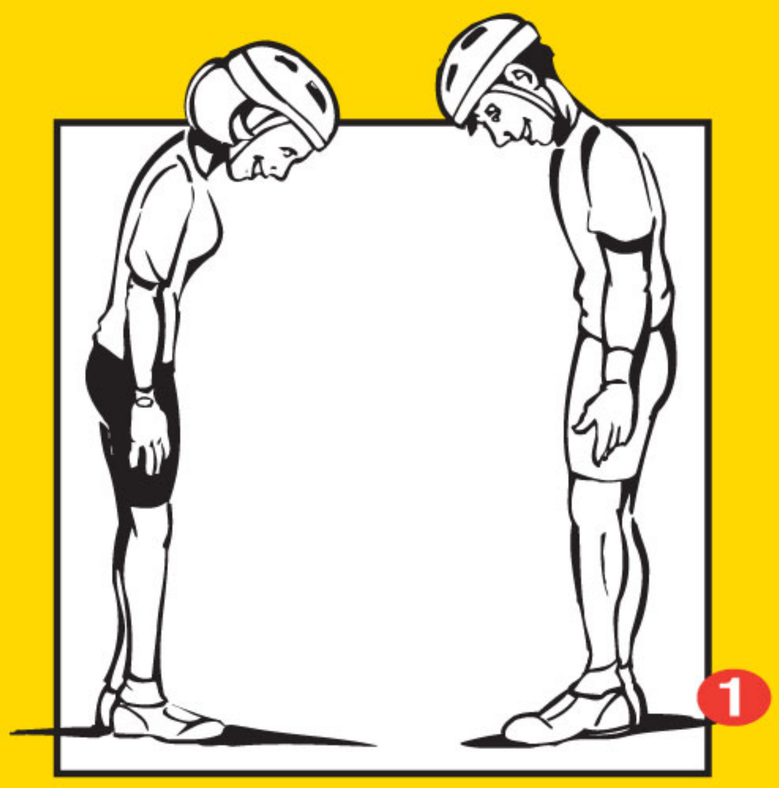
❹ Some transit buses are equipped with bike racks that allow transit riders to transport their bicycles with them. When using buses equipped with bicycle racks, make sure the bus driver is fully aware of your intentions before attempting to place or remove your bike from the rack.

Bicycles may be brought aboard Maryland Transit Administration's Light Rail and Metro Subway trains operating in the Baltimore metropolitan area and on Washington Metropolitan Area Transit Authority trains operating in the Washington, DC metropolitan area, subject to restrictions. When using these services be sure to:

- Follow the regulations and instructions from transit staff regarding bicycle transport on MTA and WMATA property.
- Stay a safe distance from the loading platform edge at all times prior to boarding trains.
- In the event your bicycle or other property falls into the track area of the Metro subway system, DO NOT attempt to retrieve it yourself. Approach the Station Attendant for assistance.

Also when approaching light rail or other railroad tracks expect a train at any time, from any direction, and on any track in your vicinity. Obey railroad crossing safety devices. Stop, look, and listen before crossing tracks. Do not rely on noise alone to warn you of an approaching train as modern trains, particularly light rail trains, are very quiet.

8: OFF-STREET BICYCLING



THE BASICS OF USING PATHS

Many areas have bicycle or multi-use paths through parks, forests, or railroad rights-of-way, or next to roadways. While they're a welcome relief from automobiles, remember: *Bicycle collisions happen almost three times as often on paths as on streets.* Here's how to ride paths safely.

Be Courteous: People on paths don't always know which side to travel on and when to yield. So the most important rule for everyone is: act courteously. 1 When in doubt, give the other person a break.

Ride Predictably: Ride straight and at a steady speed so people can stay out of your way. Always look back before passing or turning. Use hand signals (see page 13) and make noise by shouting or by using a bell or horn.

Where to Pass? Slower path traffic should stay right, except to pass—just like traffic rules for the street. And you usually should pass others on the left. When there is not enough room on the left, don't pass on the right unless you are certain it is safe. Always signal so people behind you know which side you'll pass on.

Calling Out to Others: Yell "passing on your left" or "passing on your right" before you pass another cyclist, a skater, or a runner. 2 If they're walking in a straight, predictable line, pass them without saying anything—but give them lots of room so you do not startle them. Avoid headphones so you can hear others passing or warning you.

When to Yield: 3

- When you enter a path, or you're on a path that crosses a street or another path, always be ready to slow down and yield to cross traffic.
- If cross traffic has a stop or yield sign, they should yield to you.
- If there are no signs, you should yield to the person who reaches the intersection first.
- Yield to anyone who looks like they won't slow down for you. If there's no room to pass safely, yield to slow-moving people in front of you. And if you're stopping, move off the path so you don't block it.

Do No Damage: Don't ride off designated trails into mud, dirt, or grass, or over seedlings, or lock your bike to small trees. You'll compact the soil and kill trees.

Problem Areas:

- **Sharp turns.** Paths often have blind turns where you can't see oncoming pedestrians or other traffic. 4 Slow down!
- **Crowds.** Where they run along beaches and other gathering places, paths are often filled with pedestrians. In crowds, go slow and make noise.
- **Sand, ice, and snow.** 5 Paths covered with snow, ice, sand, wet leaves, or gravel will make you slide. Avoid sharp turns and sudden braking.

DIRT TRAIL BICYCLING

Cycling on dirt trails and other rough terrain requires special tactics to keep you from wiping out.

Position: On rough terrain, here is how you can absorb shocks better. 6

- Take most of your weight off your seat, letting your legs and arms absorb the jolts. For really bumpy or steep terrain, lift higher off your seat.
- Keep your knees and elbows slightly bent.
- Move your butt forward on ascents and backward on descents to keep your weight centered over your pedals.

Turning: 7

- When turning, put the outside pedal down (close to the ground) and put most of your weight on it. If your inside pedal is down, it might scrape the dirt and cause you to wipe out.
- When you're leaning your bike into a turn on loose dirt or gravel, keep your body straight with respect to the ground. This reduces the chance that the bike will slide out from under you.

Braking:

- Keep your hands over your brake levers.
- When braking, apply the back and front brakes at the same time. On descents, apply slightly more pressure to the back brake. Too much front braking can flip you.
- Don't force your bike into a skid by locking up the wheels with your brakes. Instead, apply your brakes periodically to stay at a controlled speed.
- Don't brake in the middle of a sharp turn. Slow down enough before the turn to stay in control.
- Trail riding is rough on brakes. Inspect, clean, and adjust your brakes often.

4

5

6

7

1

2

3

4

Staying in Control:

- ▶ Always control your speed so you can stop suddenly to avoid a collision.
- ▶ If your bike starts to bounce around uncontrollably, stop! If you can't stop, force yourself to fall where you can avoid hitting objects.
- ▶ When falling, push yourself away from the bike and try to roll. On descents, you can push off backward and let the bike ride out from under you.

Ruts and Bumps: 1 Roll through ruts or over obstacles by shifting your weight as follows.

- ▶ After your front wheel has entered a rut, take your weight off of it as it comes up the other side. Keeping your weight on the wheel might cause it to dig in.
- ▶ When riding over an obstacle like a rock or log, pull up your front wheel to climb over the obstacle. (You can make your front tire spring up by pushing down, then pulling up in one quick move.) When the front wheel starts down the other side, shift your weight to the front wheel so the rear wheel rolls over the obstacle easily.

RESPECTING TRAILS AND THEIR USERS

Taking a fall is not the only danger that trail cyclists face. Uncaring cyclists whose tires tear up fields and forests have caused governments nationwide to ban all cyclists from some trails. To keep Maryland trails open for everyone, show respect for the land and for others you meet. Here is how.

Yield to others:

- ▶ When encountering another person on a trail, make noise far in advance so they know that you are there. Show courtesy by asking if it's OK to pass.
- ▶ Always yield to equestrians and hikers. 2

Animals:

- ▶ When approaching an animal, slow down. Coming up suddenly on a critter can spook it and put you or the animal's owner in danger.
- ▶ When a horse is moving toward you, remember that it can't see directly ahead; ride to either side so it spots you well in advance. 3

Practice soft cycling: Ride so you don't erode soil, make ruts, or trample vegetation.

- ▶ Don't ride through muddy soil; you'll leave permanent ruts. 4
- ▶ Don't skid. Walk your bike wherever you can't ride without locking your wheels.
- ▶ Don't ride off of existing trails, on closed trails, or in areas protected for conservation.

9: RIDING AT NIGHT & IN BAD WEATHER

HOW TO BE SEEN AT NIGHT

Light up! Here's how:

Reflective tape: Use white or yellow in front, yellow or red in back.

Reflective safety vest: good for cycling in dark clothes or if your rear light goes out. Don't wear dark clothes with no other light-colored material.

Strobe light

Rear light: Effectively supplements your legally required reflector to help approaching traffic see you. Many cyclists use flashing red lights.

Jacket: Bright color, reflective piping in back.

Flashlight: In a pinch, tie on with rubber bands or a bungee cord.

Headlight: battery-powered halogen or strobe. Get the most powerful one you can afford. (Use white or amber, not red.) The newer strobe lights don't cost lots and have long battery lives.

Rear reflectors: Biggest are best; get one at least three inches wide, make sure it's pointed straight back and not up or down.

Only **red** is legal but newer **amber** ones can be several times brighter. Reflectors work only if they're clean, *so remember to wipe them off!*

Reflective ankle strap

Pedal reflectors: built into front and back.

Spoke reflectors: not a substitute for a headlight or rear reflector.

Rechargeable batteries: If you ride at night a lot, you'll save money and throw away fewer toxic batteries.

Reflective tape: Use white or yellow in front, yellow or red in back.

Only three percent of bike rides happen at night—but over half of all cyclists killed are hit while riding at night without lights. At night, Maryland law requires a white front light visible from 500 feet, and a red back reflector visible from 100 to 600 feet. That's not much; you can see a car's headlights from *3,000 feet*—and that's what most motorists look for. (Under bright street lights you need bike lights to be seen, not to see.) And because your upper body is at eye level, it is important to wear bright stuff at night.

RIDING AT NIGHT

Defensive Riding: At night, it is hard to see road hazards, and to anticipate the moves of others: You can not see where they are looking, and some may be drunk. **Slow down** from your daylight speed. To make sure drivers see you when you are stopped, **flash your lights** by twitching your handlebars back and forth. And **watch cars** closely; be ready to get out of their way.

Know Your Route: If you are new at night riding, **take streets where you know the potholes and traffic** so you can focus on riding in the dark. Also, if you are not sure about nighttime crime in a neighborhood, ask someone who knows the area—or do not ride alone.

Night Blindness: Do not bike at night if your visual acuity is worse than 20/40 with glasses or contacts, or you can read a far-away sign or address okay in daylight but not at night. See a doctor to be sure.

RIDING IN RAIN & SNOW

Wet Streets: Wet streets can be hazardous. Watch out for:

- **Metal, paint, and leaves.** 1 Metal-grate bridges, sewer and manhole covers, painted pavement, and leaves get slippery when wet. Do not brake or turn suddenly on them. Do not ride across metal-grate bridges if you have thin or smooth tires. Put both feet on the road and "scooter" across, or walk your bike on the sidewalk.
- **Puddles.** Do not ride through a puddle if you can not see the bottom. It could be a deep pothole that could make you crash or dent your wheel.
- **Start of rain.** Do not race to beat the rain when it starts; it is when streets are slickest, because oil or anti-freeze on the road spread before they wash away. Turn slower and lean less.

1

Slow Down: Remember that motorists and cyclists can't see as well in rain or snow. And it takes longer to stop—so to be safe, go slower than normal.

Braking: When brake pads are wet they take up to ten times longer to work. Dry them by applying your brakes far ahead of where you want to slow down, causing your pads to wipe the rims. To dry them faster, "pump" the brakes by applying them, then letting go, over and over.

Snow: Snow crews usually clear major streets within a day of a major snowfall. Walk your bike to one and get going. Other concerns:

- **Ice.** Snow hides ice on the pavement, so avoid riding on snow. Walk your bike if you must.
- **Build-up.** With piles of snow on the right, ride in the middle of the right lane. ❷ Let cars pass in heavy traffic; otherwise, if drivers blow their horn, give them the "slow" arm signal (see page 13)—or shake your head firmly—and keep going.

DRESSING FOR COLD & WET WEATHER

People who bicycle in the cold and rain aren't nuts; they're just dressed right. But how?

Protection & Venting in Wet Weather: If your clothes keep out rain they might also seal your sweat in. Wear a jacket or poncho that lets air in from the bottom, back, or sides. Use fenders to keep road grit and water from spraying up onto your feet, legs, and back.

Layers for Cold: You don't need a whole new set of clothes to bike in the cold. Wear a sweatshirt or jacket and t-shirts, light sweaters, and tights or long johns in layers as weather gets colder. By wearing light layers you can also remove outer clothes if you warm up while cycling. (Overheating can make you sick.) And if you sweat a lot, the layer closest to your skin should be a non-absorbing material (synthetic instead of cotton) that lets sweat evaporate as you ride.

Try different clothing to find what makes you comfortable at different temperatures and in the rain. In extreme cold or wind chill, cover your hands, feet, and ears well. Here are some other ideas:

Temperature	What to Wear
Cool:	Light jacket or windbreaker; long pants; light gloves.
Cold:	Thicker socks (or a second pair); heavier gloves; hat.
Freezing:	Sweater or another torso layer; glove liners under gloves; neck gaiter, turtleneck, or scarf; headband or earmuffs; add knee socks; heavy shoes or shoe covers.
Below Freezing:	Another torso or leg layer; mitten shells instead of (or over) gloves; face mask.

❷

EQUIPPING YOU AND YOUR BIKE FOR RAIN AND SNOW

Wear bright colors: yellow, orange, or fluorescent pink.

Ears: Wide headbands or ear-muffs fit under your helmet.

Head: Cover it unless you have thick hair. A tight-fitting hood covers your ears and fits under your helmet.

Neck: Wool scarf, cotton turtleneck, or neck gaiter keeps icy air from blasting down your shirt.

Hands: Use gardening or fishing gloves, ski gloves, or thickly lined hunter's gloves. Make sure gloves will grip brake handles well.

Inseam: To prevent unusual frostbite, avoid porous warm-up pants. Wear wind-proof tights or pants.

Hoods: Do not use loose-fitting hoods that block peripheral vision.

Neck: High collar or hood keeps water from going down your neck.

Leg gaiters: Often made of nylon; keep your pants legs dry.

Legs: When it is cold but dry, wear loose-fitting, average-weight pants like jeans. When it is colder use long underwear or a second pair of tights. In wet weather wear synthetic underwear with one or two pairs of tights.

Rain gear: Wear a waterproof jacket. If sweat is a problem, wear a **loose or vented jacket,** a **waterproof poncho** that lets in air from below, or a **cyclist's rain cape** that hooks to handlebars to keep it out of your tires.

Feet: Wear heavy wool socks or two pairs of socks. (Wool dries more quickly than cotton.) Knee socks protect shins from cold from below. With socks for warmth and fenders for dryness, wear shoes simply to take road dirt. When it's really cold and wet, wear rubber boots.

Rims: When wet, brake pads grip aluminum rims better than they do steel.

Tires: Fat tires have better traction. Tires less than 1-1/4" wide work better on wet streets when under-inflated. Use tires with a deep tread pattern.

Brakes: Grime builds up on brake pads, making them squeak or scratch your rims. Run a rag between each pad and the rim, like shining a shoe. Occasionally remove the wheel and check pads for wear.

Bearing damage: After biking in wet weather put your bike indoors so bearings can dry.

Fenders: They beat almost anything to keep you dry on wet pavement. The newest plastic ones are inexpensive and light, but can break if installed wrong.

Salt damage: With lots of winter riding, occasionally wipe your frame, rims, spokes, and derailleurs, and lube your chain (see page 5). Use a toothbrush for hard-to-reach parts.

BICYCLISTS' RESOURCES

Advocacy Groups

▶ **Baltimore Bicycling Club**
P.O. Box 5894
Baltimore, MD 21282-5894
tel: 410-538-8791
www.baltobikeclub.org

▶ **College Park Area Bicycle Coalition**
10027 Fox Den Court
Ellicott City, MD 21042-2242
tel: 410-480-1909
www.cpabc.org

▶ **League of American Bicyclists**
1612 K. Street NW, Suite 800
Washington, DC 20006-2850
tel: 202-822-1333
www.bikeleague.org

▶ **One Less Car**
1209 North Calvert Street
Baltimore, MD 21202
tel: 410-960-6493
www.onelesscar.org

▶ **Washington Area Bicycle Association**
2599 Ontario Rd. NW
Washington DC 20009
tel: 202-518-0524
www.waba.org

Maryland Bicycle Map

▶ **Bicycle and Pedestrian Coordinator**
Maryland State Highway Administration
707 North Calvert Street
Baltimore, MD 21202
tel: 410-545-5656 or 1-800-252-8776
Impaired Hearing or Speech call: 1-800-735-2258
www.roads.maryland.gov

Bicycling Information

▶ **Director of Bicycle and Pedestrian Access**
Maryland Department of Transportation
7201 Corporate Center Drive
Hanover, Maryland 21076
tel: 410-865-1237 or toll free: 1-888-713-1414
Impaired Hearing or Speech call: 410-865-1342

▶ **Bicycle and Pedestrian Coordinator**
Maryland State Highway Administration
707 North Calvert Street
Baltimore, MD 21202
tel: 410-545-5656 or 1-800-252-8776
Impaired Hearing or Speech call: 1-800-735-2258

▶ **Maryland Department of Transportation**
www.marylandtransportation.com

▶ **Maryland Transit Administration**
tel: 410-539-5000 or 1-866-RIDE-MTA
www.mtamaryland.com

To order this booklet

Contact either the Director of Bicycle and Pedestrian Access or the Bicycle and Pedestrian Coordinator at the addresses listed at left.

This booklet was made possible by the Maryland Department of Transportation, State Highway Administration Highway Safety and Communications Offices and the Maryland Highway Safety Office.

▶ Conceived and written by Dave Glowacz

▶ Edited by Michael Jackson

▶ Graphic design and layout by Debra Schoeneberg

▶ Illustrations by Eric Masi and Michael Brooks

▶ Photographs by Dave Glowacz, Carolyn Prieb, Samuel Joslin, Michael Jackson and Timothy Hyman

Copyright © 2010 by Wordspace Press. May not be copied without permission.

MARYLAND TRAFFIC LAW: Bicyclists are vehicle drivers

Every person operating a bicycle in a public area has all the rights granted to and is subject to all of the duties required of the driver of a vehicle by this title . . . except . . . (f) or those provisions of this title that by their very nature cannot apply.

SECTION 21-1202
ANNOTATED
CODE OF MARYLAND

Traffic rules that apply to motorists also apply to bicyclists.

"Vehicle" means any device in, on, or by which any individual or property is or might be transported or towed on a highway.

SECTION 11-176 ANNOTATED CODE OF MARYLAND

Because Maryland law mandates that bicyclists are the operators of vehicles, motorists should treat them as such. Specifically, motorists should treat a bicycle as a vehicle for purposes of:

- LEFT AND RIGHT TURNS
- PASSING
- STOPPING AT LIGHTS AND STOP SIGNS
- YIELDING RIGHT-OF-WAY
- LANE POSITION

A message from the Maryland Department of Transportation.

Maryland Department of Transportation

SHA State Highway Administration

MTA Maryland

Maryland Highway Safety Office

Cyclists are encouraged to reproduce this page and share it with motorists and others.

This document is available in alternative format upon request from a qualified individual with a disability.