



# Bike Smarts

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# Bike Smarts

## A Handbook

Produced by  
Insurance Corporation of BC

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### Call To Action!

**Bike Smarts:** A Handbook helps teachers, youth leaders and cycling instructors improve the knowledge, skills and attitudes of children with respect to the safe handling of their first vehicle — a bicycle.

The Handbook consists of six exciting sessions designed in an easy-to-follow format. Instructors with little or no background can assist children ages 7–13 to learn safe cycling skills that convert into the habits of a lifetime.

The sessions outlined are based on solid learning principles and curriculum learning outcomes. They emphasize active participation of the learner, appropriate hands-on experiences, a variety of activity and learning options, and individual and group activities.

# Introduction

## IMPLEMENTING THE PROGRAM

**B**ike Smarts can be implemented in two progressive steps:

### BIKE SMARTS – STEP ONE SESSIONS 1-5

May be implemented by any teacher or instructor. Bike Smarts — Step One is outlined in this Handbook, and focuses on classroom and controlled location activities (such as in a school parking lot). On-road activities are not included.

### BIKE SMARTS – STEP TWO SESSION 6

May only be implemented by a certified instructor. Session 6 provides critical on-road experiences. For a list of certified instructors, contact the B.C. Cycling Coalition at 250-370-0428 or [www.bccc.bc.ca](http://www.bccc.bc.ca)

#### For more information, contact:

#### ***Way to Go! School Program***

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Toll free 1-877-325-3636

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e-mail: [waytogo@telus.net](mailto:waytogo@telus.net)

[www.waytogo.icbc.bc.ca](http://www.waytogo.icbc.bc.ca)

**Note:** *Encourage community participation. Involve local cycling enthusiasts, health units, bicycle retailers, local police departments, and parents as volunteers.*

## ORGANIZATION OF THIS HANDBOOK

### The Six Bike Smarts sessions include:

Session 1 – Road Rules

Session 2 – Bikes and Helmets

Session 3 – High Tech Handling

Session 4 – Smart Signals & Road Hazards

Session 5 – Intersections & Defensive Riding

Session 6 – Streets and Roads

You are encouraged to pick and choose the sequence of activities that best fit the time allocated for your Bike Smarts sessions. The ideal program would be presented in six one-hour blocks of time.

#### Each session includes:

- Introduction
- Main Concepts
- Equipment/Preparation
- Teaching Notes
- Indoor Activities
- Outdoor Activities
- On-Bike Activities
- Drills

### Curriculum Connections

**F**or classroom teachers, *Bike Smarts* provides significant curriculum opportunities.

#### In Personal Planning K-7

- Safety and Injury Prevention

#### In Physical Education K-7

- Active Living
- Movement (Alternative-Environment Activities)
- Personal and Social Responsibility

#### In Social Studies

- Transportation and Communication

(see Appendix B, p. 34)

## BE INFORMED ABOUT CHILDREN AND CYCLING

Share this important information with colleagues and parents.

### The Mission

Bicycling is fast becoming a popular mode of transport: not only is it often faster and cheaper, it is a great way to keep fit, and helps to keep our environment clean. Children often view their bicycles as toys, but tricycles and bicycles are not toys! They are vehicles, using the same transportation system as all of the other vehicles in a community. Children need to understand the rules and role of being a vehicle driver. As cycling grows in popularity, safety and injury prevention become increasingly important.

The following statistics emphasize the importance of this mission:

- Between 86% and 90% of children aged 10 to 14 are cyclists.
- More than 150 Canadians die each year from bike injuries. Children aged 5 to 14 account for about half of these deaths.
- 85% of bike injuries do not involve a motor vehicle.
- 85% of incidents between cyclists and cars are due to rider error.
- Head injuries account for 75% of all deaths from bike injuries.
- Wearing a bicycle helmet reduces the risk of head injury by up to 85%, and of brain injury by 88%.
- Approximately 33% of bicycle riders always wear a helmet.

### Why do bike incidents happen?

*Unintentional injuries kill more young British Columbians than any other cause. Preventive efforts in this area will have a greater impact in reducing death and suffering than virtually anywhere else. Injuries are no accident.<sup>1</sup>*

Health professionals are using the word incident to replace the word accident. Using accident, they say, implies that the incident was somehow unavoidable. In fact, incidents causing injury are understandable, predictable and up to 90% preventable.

The most frequent causes of bicycle incidents causing injury are:<sup>2</sup>

- Loss of control — due to hitting a rut, bump or loose gravel; riding double; stunt driving; a foot slipping from the pedal
- Mechanical problems — brake failure, changing gears, chain slippage, loose pedals
- Entanglement — feet, loose clothing, packages, etc. get caught in wheels or chains
- Cyclist ignorance — of safety practices and traffic laws

### Children and traffic safety

Although children are a part of the same traffic system as other vehicle users and pedestrians, research tells us that children perceive traffic differently from adults.

- Children are likely to believe that cars can stop instantly, and that if they can see the car, the car can see them.
- Children have difficulty judging speed and distance.
- Young children have underdeveloped peripheral vision.
- Children have trouble telling where a sound (siren/horn) comes from.
- Children often lack a sense of danger.
- Children are often restless and have trouble waiting for things like traffic lights.
- Children have problems paying attention for long periods of time.
- Young children have not developed the ability to think through cause and effect.
- Children have trouble understanding complex chains of events.
- Children tend to focus only on the things that interest them most.
- Children have difficulty discerning myth and reality.
- Children may believe that grown-ups will always look out for them.

Through ongoing skill development and practice, children can significantly reduce the likelihood of injury-causing incidents.

<sup>1</sup> Dr. Ray Copps, quoted in *Injury Facts and Prevention Strategies for Children and Youth in British Columbia*, Office for Injury Prevention, B.C. Ministry of Health, September 1993.

<sup>2</sup> Adapted from *What everyone should know about BICYCLE SAFETY*, a Scriptographic Book by Channing L. Bete Co., Inc., South Deerfield, MA, 1078, P. 4.

## Helmet Legislation

In 1993 in British Columbia, more than 2,000 cyclists were involved in incidents with motor vehicles. A high proportion of crashes resulted in victims being injured and five people died. One of the fatally injured victims was aged seven.

Helmets save lives. They absorb the blow that would otherwise hit the skull – in a collision with a tree, a telephone pole, another vehicle, or the ground when cyclists fall off their bicycles. One writer described helmets as the “brain buckets for cyclists.” In over half of all bicycle incidents, the cyclist’s head hits a hard surface. Such crashes often cause brain or

skull damage. Even a fall from as little as two feet off a tricycle can result in severe trauma to the head of a little child.

According to research, helmet legislation has the potential to significantly increase helmet use, thereby reducing the number of deaths and injuries associated with cycling.

In June of 1995, the B.C. Minister of Transportation and Highways announced a number of measures to enhance bicycle use and safety – including a *Bike Smarts* education initiative and the introduction of a mandatory helmet law in 1996.

### Contributing Factors in Crashes

#### Bicycle Drivers:

The five top contributing factors assigned to bicycle drivers (as a percentage of total bicycle collisions) were, in order of magnitude:

1. Driver inattentive	14.9%
2. Driving on the wrong side of the road	12.5%
3. Failing to yield to right of way	11.2%
4. Driver error/confusion	8.2%
5. Ignoring traffic control device	5.8%

#### Other Drivers:

The five top contributing factors assigned to bicycle drivers (as a percentage of total bicycle collisions) were, in order of magnitude:

1. Failing to yield to right of way and driver inattentive	11.1% each
2. Driver error/confusion	5.2%
3. Weather condition	4.3%
4. Improper turning	3.0%
5. Avoiding vehicle/pedestrian/cycle	3.0%





# The Six Bike Smart Sessions

## SESSION 1

### Road Rules

#### Introduction

**B**egin with what the participants already know. They have been pedestrians and passengers in vehicles since they were very young. Reinforce and practise important road rules.

#### Main Concepts

**B**y the end of the session, participants will be able to explain the following rules and laws of the roads:

1. Obey Traffic Rules: traffic control signs and hand signals.
2. Keep to the Right: and ride single file.
3. Shoulder Check: look all ways, then shoulder check.
4. Turn with Care: look and listen all ways before proceeding.
5. Beware of Parked Cars: plan for doors to open.
6. Beware of Road Hazards: look all ways before entering traffic and cross at right angles to the tracks at railway crossings.
7. Watch for Pedestrians: people and animals are unpredictable.
8. Be Visible: day or night.
9. Avoid Heavy Traffic: use less heavily-travelled roads.
10. Ride Safely: ride defensively.

#### Equipment/Preparation

- Photocopy Worksheets 1, 2, 3, and 4 (p. 6-9)
- Photocopy Worksheet 9 (p. 25) and cut into cue cards or put on an overhead (refer to Key, p. 32)

#### Indoor Activities

1. Introduce the Bike Smarts Program.

#### Teaching Notes

- Affirm the information and experience participants have had as pedestrians and passengers.
- Correct misinformation and misconceptions.

2. Talk about bicycles. Complete Bike Survey on page 6. Discuss the results.
3. Work together to list or draw all of the things that make up a transportation system (e.g., streets, cars, traffic lights, etc.).
4. Talk about how people know what to do when they are part of the transportation system. Then make lists of important road rules.
5. Add the "road rules" that are important for cyclists.
6. Review traffic sign and signals (include turn arrows, blinking lights and flashing red/green/orange lights).
7. In a classroom or on the playground, simulate a transportation system: streets, signs etc. Pretend you are in a vehicle and practise the rules of the road.

#### Outdoor Activities

1. Do a walk-about at a nearby intersection. Observe traffic, signage, parked cars, driveways, pedestrian crossings, etc. Add to your list of things that make a transportation system. (see Our Community Walkabout Observation Sheet, p. 7)

#### Extension

Make up a board game based on the Rules of the Road.

# Bike Survey

## Questions

## Answers

Do you have a bike?

---

How many bikes are there in your family?

---

What types of bikes are there in your family?  
(BMX, ten-speed, trail, tandem, etc.)

---

---

---

How do you and the members of your family  
use your bikes?

To go to school

---

To go to work, the library, the grocery store

---

To go mountain/trail biking

---

To exercise

---

For getting to different places

---

Just for fun

---

Bicycle Helmets

Do I own one?

---

Do I wear one?

---

Do I know how to fit it properly?

---

Let's Talk: Write a sentence about how the people in your group use their bicycles.

---

---

---

---

---

---



# Our Community Walkabout Observation Sheet

**W**alk down a street in your community. Write or draw things you observe that could be dangerous for someone on a bicycle. Share your observations with others in your group.

1.	2.
3.	4.
5.	6.

Let's Talk: What things could a bicycle rider do to be safe in each situation?

# Picture a Rule

Here are some important **Rules of the Road** for cyclists. Below them are some pictures. Write the Rule of the Road beside the picture that it goes with.

Then write a sentence explaining why that rule is so important. Share your explanations with others in a small group.

Watch for pedestrians.

Beware of road hazards.

Beware of parked cars.

Signal before you turn or stop.

Keep to the right of the road.

Obey traffic signals.

Be visible at night. Have front and back lights and back reflectors.

1.



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\_\_\_\_\_

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5.



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\_\_\_\_\_

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2.



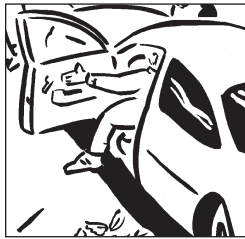
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6.



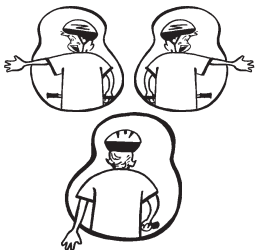
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3.



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7.



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4.



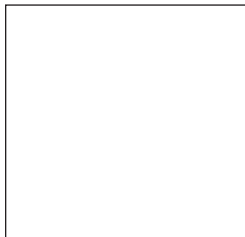
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8.



Draw your own rule.

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\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

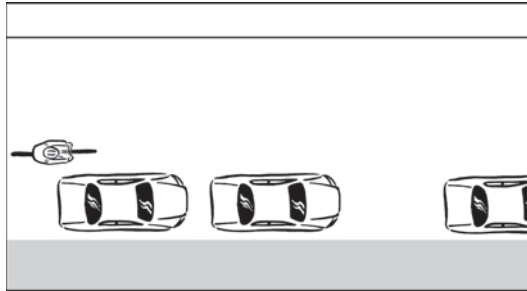
# The Safe Ride

Imagine you are riding the bike in each diagram below.

- What is the safest path to take? Draw it.
- What rules of the road will you follow? Write them under the diagrams.

## Traffic Rules

1. Beware of parked cars
2. Stop for stop signs
3. Look for traffic all ways
4. Slow down and look
5. Yield to traffic before crossing
6. Ride in a straight line
7. Shoulder check before turning
8. Use hand signals to tell other drivers what you're going to do
9. Ride on right hand side
10. Turn with care



**Riding past parked cars**

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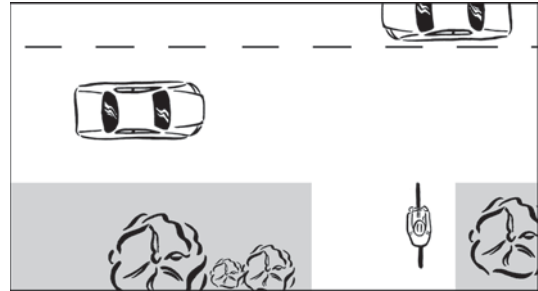
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**Riding out from a driveway**

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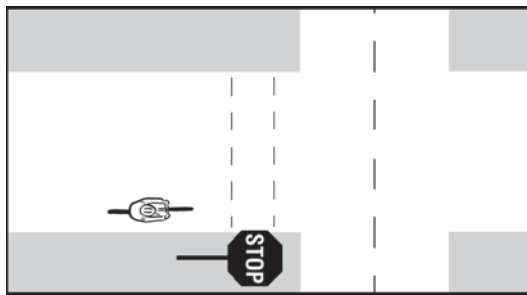
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**Crossing an intersection**

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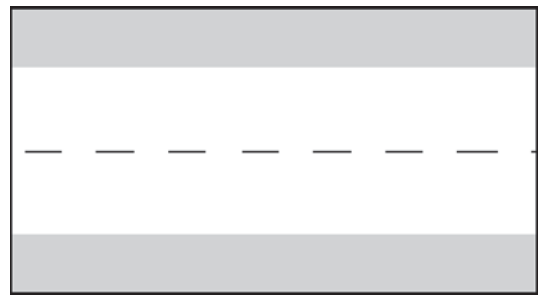
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**Draw your own special cycling situation**

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Refer to Answer Key p. 31



## SESSION 2

# Bikes and Helmets

### Introduction

Most participants will already have bikes, or will have tried out a friend's bike. Increase their understanding of the parts and mechanics of the bicycle. Introduce the important accessories, and promote and insist on the wearing bike helmets.

### Main Concepts

By the end of this session, participants will be able to:

1. Describe the parts of the bicycle.
2. Explain how the various bicycle systems work (e.g., wheels, brakes, chain, gears).
3. Understand how to maintain a bicycle.
4. Explain what accessories are important for bike safety.
5. Demonstrate how to fit a bike properly.
6. Explain why a helmet must be worn.
7. Demonstrate how to fit a helmet.
8. Describe what clothing is best for cycling.

### Equipment/Preparation

- Bike, bike clothes, helmet, pump, pressure gauge, adjustable wrench, lubricant (WD 40), old toothbrush, chain cleaner and container, rags, accessories (lights, reflectors, panniers).
- Participants: helmets.
- Photocopy or place onto transparency Bicycle Parts (p. 13 or 14).
- Invite a local cyclist or cycle shop representative to assist with this session.

### Indoor Activities

#### Bikes

1. Bring in a bike. Identify the parts. Discuss the parts and basic maintenance tips. Use diagrams on p. 13–14.
2. Bring in and demonstrate other accessories and proper clothing.
3. Inflate a tire and put the chain back on.
4. Demonstrate fitting a bike.

#### Helmets

1. Discuss the helmet construction, proper fitting, styles, and standards. Demonstrate and practise helmet fitting.

### Teaching Notes

#### 1. Bicycle Part Descriptions and Maintenance Tips (see Worksheet 6, p. 14).

- 1 **Seat:** available in different shapes and sizes. Choose one that is comfortable and adjust its height for more comfort.
- 2 **Rear Red Light:** must be mounted and visible to the rear (flashing or steady) (MVA, Section 183(6)). Keep clean and replace bulb or battery when necessary.
- 3 **Seat Stay:** adjustable tube holding the seat. Adjust by releasing the quick release lever or loosening bolt.

#### 4/21

**Rear and Front Caliper Brakes:** operate by squeezing the rim of the bike's wheels. Check the brake pads – they should only contact the rim, not the tire; if they are worn, replace them. Squeeze hard on the lever and there should be room for one thumb knuckle between the lever and the handlebar. If not, the brake cable needs tightening. Examine the brake cables. If the outer housing is kinked or the inner wire has broken strands, the housing and/or wires may need replacing – consult a bike repair shop. Hand brakes work the best when rims are clean, dry, and rust free.

- 5 **Red Rear Reflector:** must be mounted and visible from the rear. Keep clean and replace if broken.

#### 6/12

**Rear and Front Derailleurs:** move the chain onto each chain ring i.e., shift gears. Lift the rear wheel off the ground, turn the crank arm (pedals) and shift through all gears. The derailleur must move far enough to move the chain onto each chain ring, but not so far that the chain falls off – if they stick or slip, consult a bike repair shop.

- 7 **Chain:** must be kept cleaned and lubricated especially after riding in wet weather. Pour chain cleaner into a small container and use an old toothbrush to clean the chain. Wipe it dry with a cloth. Apply lubricant and wipe off excess.
- 8 **Pedals:** should be secured tightly and spin smoothly.
- 9 **Crank Arms:** hold the pedals and should be secured tightly onto the chain ring.

## Teaching Notes *(continued)*

- 10 Chain Ring Cogs:** one each for the front and rear derailleurs used to guide the chain from one gear to the next.
- 11 Chain Stay:** part of the bike frame.  
Keep clean.
- 12 (see 6)**
- 13 Seat Tube:** part of the bike frame.  
Keep clean.
- 14 Top Tube:** part of the bike frame  
sometimes horizontal to the ground and  
sometimes on an angle. Use this tube to help  
fit a bike (*see Fitting a Bike*).
- 15 Fenders:** keep mud and water off the cyclist.  
Attach securely.
- 16 Down Tube:** part of the bike frame.  
Keep clean.
- 17 Handlebar Grips:** provide a safe hand hold  
to steer the bike from. Ensure that the  
handlebars and handlebar grips are tight  
and straight. You should not be able to twist  
back and forth when you hold the front wheel  
between your legs. At least two inches of  
handlebar stem should be inside the head  
tube.
- 18 Bell:** provides a warning noise — optional.
- 19 Front light:** must be mounted on the front  
and capable of displaying a white light visible  
at least 150m in the direction the cycle is  
pointed (MVA, Section 183(6)).
- 20 Brake Cables:** run from the lever to the  
caliper brakes. Keep clean and lubricated.
- 21 (see 4)**
- 22 Tires:** need to checked often for bulges,  
cuts, cracks, or worn spots. Check to see if  
the tread is good. Inflate tires to the pressure  
indicated on the side of the tire with a tire  
pressure gauge and a hand pump. A gas  
station pump is difficult to control and can  
easily burst the tire.
- 23 Spokes:** check to see that none of the spokes  
are loose, missing, or broken, these may need  
to be replaced — consult a bike repair shop.
- 24 Fork:** part of the bike frame which the hubs  
of the wheels are attached to. Keep clean.
- 25 Hub:** the centre part of the wheel that  
hosts the quick release lever or nut. Be sure  
the lever or nut is tight. Keep clean and  
lubricated.

- 26 Rims:** the edge of the wheel that the brakes  
rub against. Check that the rims are smooth  
to ensure the brakes will work properly and  
the wheel doesn't wobble back and forth  
when you lift the bike and spin the wheel  
freely.
- 27 Tire Valves:** come in two types — a presta  
valve which has a narrow tip which can be  
unscrewed to release the air and a schrader  
valve (typical car tire valve) with a little pin  
on the inside. Match the correct pump to your  
valves.

## 2. Fitting a Bike

A properly fitted bicycle is the difference  
between an uncomfortable ride and life-long  
satisfaction as a cyclist.

### To fit a bicycle:

- Stand over the top tube with your feet flat on  
the ground.
- Lift the front wheel. You should be able to lift  
it 1" – 2" off the ground.
- Sit on the saddle. You should be able to touch  
the ground with the balls of your feet.
- While you are seated and your feet are on  
the pedals, the leg on the pedal in the down  
position should be bent slightly at the knee.

## 3. Bicycle Accessories

### Emphasize:

- working front light, red tail light (flashing or  
steady) and red reflector — required by law  
when riding before dawn and after dark
- bell or horn
- lock
- basket or panniers — leaves both hands free

## 4. Helmets

- a) What a helmet does:
- Absorbs the blow and minimizes violent  
movement of the brain within the skull.
  - Distributes the blow over a larger area,  
reducing the chance of skull fractures.
  - Absorbs the type of impact that may be  
encountered in a cycling crash or fall. Other  
types of helmets are not designed for that  
purpose.



*Wrong*



*Wrong*



*Correct*

### Extension

- In a physical science class discuss the physics of gears, brakes, wheels and levers, etc.
- In a life science class discuss the brain and the potential consequences of hard impacts to the head.

### Teaching Notes (*continued*)

b) List the following important tips for participants:

- Only buy a helmet that meets a standard (e.g., CSA, Snell or ASTM approved).\*
- Get the right fit, snug but not too tight. You should **not** be able to fit your fingers up between the head and the helmet.
- Choose lighter helmets for small children. They have weaker neck muscles.
- Choose a bright colour. You want to be seen in the dark.
- Choose a helmet with adjustable straps and a quick release buckle. Always buckle the straps. A helmet which is not buckled is useless!
- Choose a helmet that looks good, but don't trade safety for style — find one you like so you'll like wearing it.
- Put helmet on handle bars ready for the next ride.

c) Provide the following helmet tips for parents:

- Let children pick their own.
- Follow a "no helmet; no bike" policy.
- Use rewards and praise.
- Emphasize valuing their brain.
- Emphasize the danger of brain injuries; they can't be fixed like broken arms.
- Note that many athletes wear helmets — hockey players, football players, and many local, elite, and Olympic cyclists.
- Encourage other parents to buy helmets.
- Replace old helmets. They have a five-year life span, due to foam deterioration.
- Helmets should be replaced after one impact.
- Emphasize proper positioning.
- Set an example! Wear your helmet.

\* The ANSI standard Z90.4 was withdrawn in February, 1995.



# Bicycle Mechanical Safety Checklist

Name \_\_\_\_\_

With a partner check out a bicycle for the following safety features. Check ✓ for 'Yes'.

- |  |                          |
|--|--------------------------|
| 1. Does the <b>front light</b> work?   | <input type="checkbox"/> |
| 2. Is there a <b>rear light</b> ?  | <input type="checkbox"/> |
| 3. Is there a <b>rear reflector</b> ?  | <input type="checkbox"/> |
| 4. Are the <b>wheels</b> tight on the frame?                                     | <input type="checkbox"/> |
| 5. Are the <b>wheels</b> fully spoked?   | <input type="checkbox"/> |
| 6. Is the <b>seat</b> tight to the frame?  | <input type="checkbox"/> |
| 7. Do the <b>pedals</b> turn freely?   | <input type="checkbox"/> |
| 8. Is the <b>chain</b> tight?  | <input type="checkbox"/> |
| 9. Is the <b>chain</b> lubricated to move smoothly?                              | <input type="checkbox"/> |
| 10. Do the <b>tires</b> look good?   | <input type="checkbox"/> |
| 11. Are the <b>tires</b> inflated to the recommended pressure shown on the tire? | <input type="checkbox"/> |
| 12. Are the <b>brakes</b> working?   | <input type="checkbox"/> |

A regular bicycle check to keep your bicycle in good condition should include the following:

- |   |                          |
|---|--------------------------|
| 1. A quick check before each ride:  |                          |
| ■ Squeeze the brake levers to ensure brakes are going to stop you.            | <input type="checkbox"/> |
| ■ Make sure tires are inflated to recommended pressure shown on side of tire. | <input type="checkbox"/> |
| ■ Make sure seat and handlebars are tight.                                    | <input type="checkbox"/> |
| ■ Make sure wheels are properly fastened.                                     | <input type="checkbox"/> |
| 2. A thorough check every six months:   |                          |
| ■ Carefully lubricate all moving parts.                                       |                          |
| ■ Check all nuts and bolts for tightness.                                     |                          |
| ■ Check tires, spokes and wheels for adjustment and condition.                |                          |
| ■ Check light, reflector, pedals, seat, brakes, and handgrips.                |                          |
| ■ Replace or repair any broken or missing parts.                              |                          |

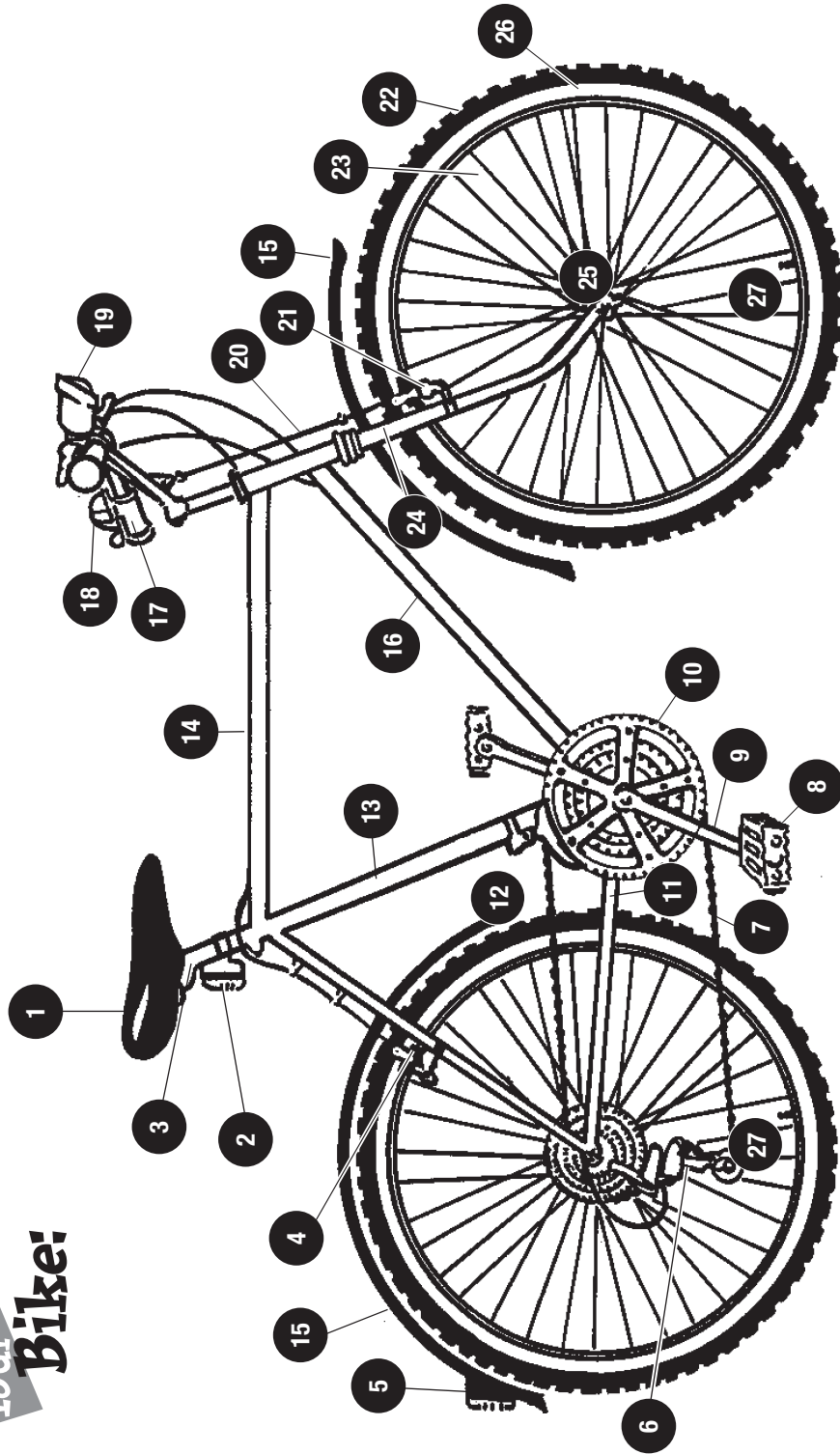
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Now sign and return this form to your instructor.

\_\_\_\_\_ has completed the Bicycle Mechanical Safety Checklist.

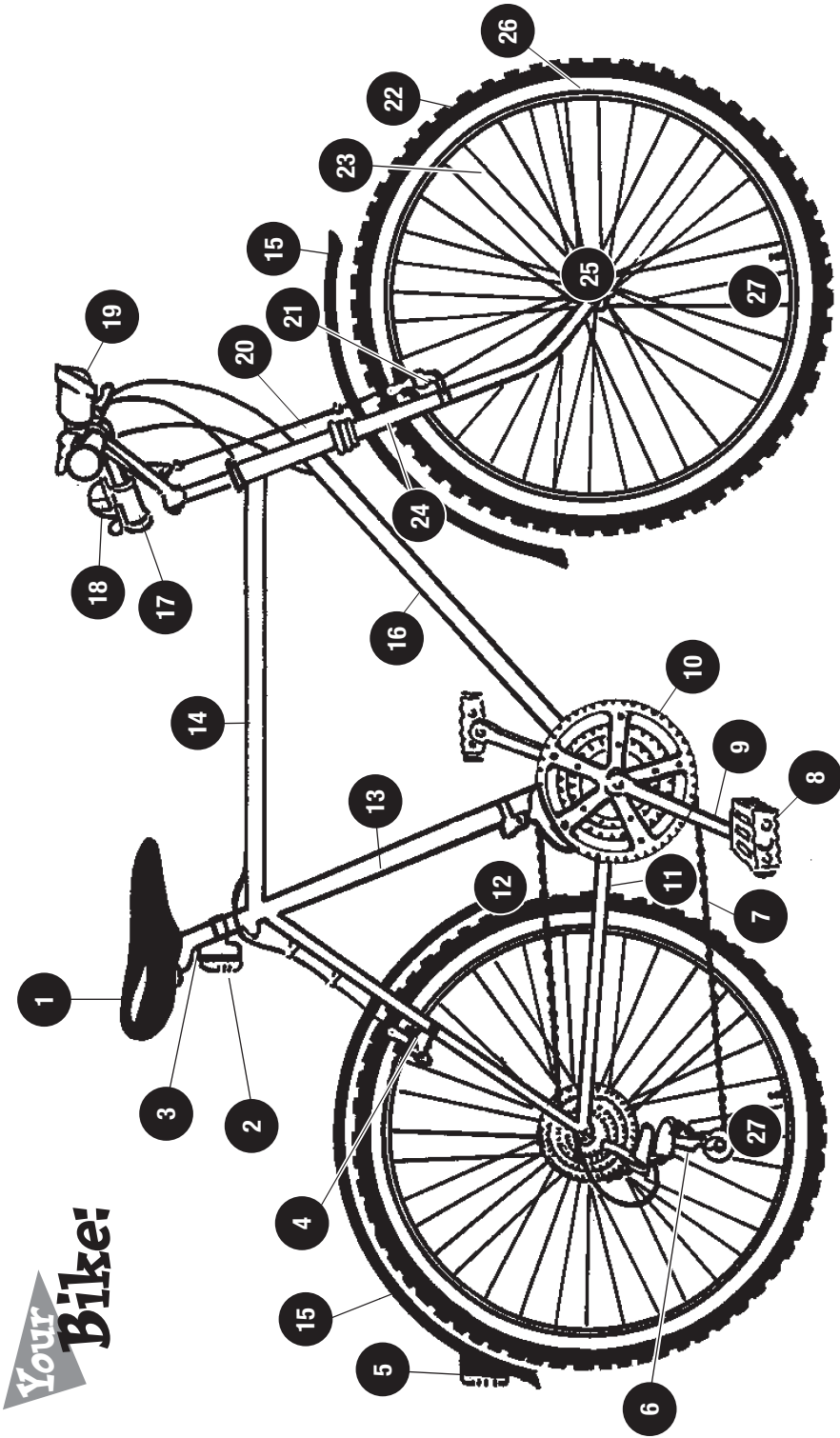
Name



# Bicycle Parts



# Bicycle Parts Answer Key



- 1 Seat 2 Rear Light 3 Seat Stay 4 Rear Caliper Brake 5 Red Rear Reflector 6 Rear Derailleur 7 Chain 8 Pedal 9 Crank Arm
- 10 Chain Ring 11 Chain Stay 12 Front Derailleur 13 Seat Tube 14 Top Tube 15 Fenders 16 Down Tube 17 Handlebar Grip
- 18 Bell 19 Front Light 20 Brake Cable 21 Front Caliper Brake 22 Tire 23 Spokes 24 Fork 25 Hub 26 Rim 27 Tire Valves

Your **Bike!**

## SESSION 3

# High-Tech Handling

### Introduction

Improve the skills of participants as bicycle riders on a safe course set up in the parking lot.

### Main Concepts

By the end of this session, participants will have developed and practised the following skills:

1. balancing
2. pedaling
3. steering
4. shifting gears
5. stopping/braking
6. turning
7. shoulder checking
8. climbing

### Equipment/Preparation

- Participants: Bikes and helmets
- Cones, start and finish streamers/markers, plastic bottles (various sizes), whistles, dimes
- Cut pieces of coloured card paper (2" x 3") for shoulder checking activity
- Hazards: hose, plywood pieces, sand, water, cones, tarp
- Photocopy Observation Sheet p. 42 (make extras for volunteers)

### On-Bike Activities

1. Set up a bike handling skills course. It should include a straight line section and a slalom course. (see p. 18 and 20)
2. Begin by finding out each participant's ability as a bicycle rider. Have them manoeuvre through a Figure 8 on the skills course. Record their ability level on the Observation Sheet.
3. Review and practise the principles and proper procedures for:
  - proper seating position
  - balancing
  - pedaling with both hands on handlebars, then with either hand removed
4. Drills (see p.17–20) Parent and teacher volunteers can be helpful here.
  - Balancing: Turtle Race, Bottle Pick-up (p. 17)
  - Pedaling: Straight Line Ride, Alternate Hands (p. 18)
  - Braking/Stopping: Stop Drill, Whistle Stop, Stop on a Dime (p. 19)
  - Shoulder Checking: Cue Card Colours (p. 19)

### Teaching Notes

1. Work with a partner and/or with another adult if you have more than 10 children in your group. Set up two stations on your Bike Handling Skills Course.
2. Divide the participants into two or three groups according to ability, with specific instructions for a sequence of drills and practices to keep them moving.
3. Be specific about behaviour expectations when you are working with one of the other groups.
4. Use the expert riders in your group to demonstrate their expertise, and to help with less experienced riders.
5. Use the following procedures to coach students in the various skills:
  - Observe carefully the current level of skill of each participant.
  - Identify areas of strength and weakness.
  - Praise strengths.
  - Explain that practising in a safe environment will help them develop a particular skill.
  - Repeat activities and drills to improve performance in one particular skill.
  - Keep all participants active and having fun.

## Teaching Notes (continued)

### 6. Teaching Specific Skills:

#### ■ Balancing

There is no magic in teaching balance. It is innate, like walking or running. Learning to relax is important. The trick to balancing is to keep moving. If the bike falls to the left, steer to the left to bring the wheels under the bike, and vice versa. To begin to ride, straddle the bike, back pedal until the right pedal is in the 2 o'clock position. Stand up on the right foot and the bike will begin to move forward. Move your crotch over the saddle, sit down and start pedaling with both feet.

Since a bicycle always wants to tip over, you continually steer into the fall to keep the bike up — just like balancing a ruler upright on your hand.

#### ■ Pedaling

If the bike has flat pedals, stress pushing down with both feet alternately. If the bike has toe clips, tell the participants to concentrate on making circles with their toes.

Practise riding straight while signaling and shoulder checking.

#### ■ Braking

When the brakes are applied, the rider's weight transfers forward, shifting most of the weight over the front wheel. Use both brakes equally.

**Note** that when you brake with the front brake, the weight shifts over the front wheel, making the bike stop very quickly. If the rear wheel begins to skid, ease off on the front brake to shift the weight back over the rear wheel, which helps the bike keep moving.

Skidding the back wheel is hard on the tires, can cause a loss of control, and will increase stopping time. Practise stopping at a set point with both brakes. When stopping, have one foot out ready to catch yourself and steer to the opposite side. The bike will tilt to the supporting foot.

When riding with others keep one bike length between you and the person in front.

## On-Bike Activities (continued)

- Steering/Cornering: Slalom, Obstacle Course (p. 20)
  - Other fun drills include: Follow the Leader and Figure 8s. Use cones to lay out the course.
5. Evaluation — Let participants know how they have done according to your observations.

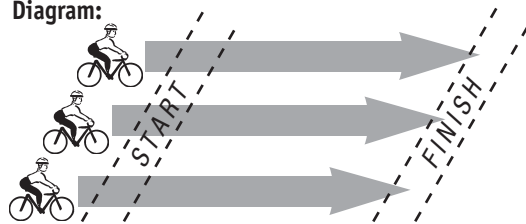
## Drills

### Turtle Race

**Purpose:** To practise balance and control

**Set-up:** Courtyard, basketball court, field  
(can be carried out in a fairly small area)

**Diagram:**



**Object of the Drill:**

To ride as slowly as possible toward the finish. The last rider to cross the finish line is the winner.

**Procedure:**

1. Riders line up side-by-side — with lots of room between each rider so they don't crash into each other.
2. Ride in a straight line towards the finish. Don't swerve; no part of the body may touch the ground during the race; start at the same time.

**Note:** Hints for balance — wiggle handle bars, pedal backwards, pump brakes. Make sure participants understand that this drill helps to improve their ability to control their bikes. The balance hints should not be applied in traffic, and particularly not at stop signs/lights.

### Bottle Pick-up

**Purpose:** To practise balance and control

**Set-up:** Straight line course with taped or coned lane boundaries. Plastic bottles are set up at intervals down the course.

**Object of the Drill:**

To see how many bottles riders can pick up without swerving out of the lanes.

**Procedure:**

Ride past bottles placed on the ground and lean over to pick them up. Then toss each to the side.

**Note:** This game can be made more or less challenging by the height of the bottles.

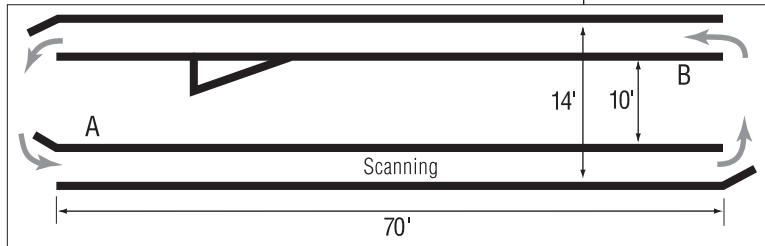
## Drills (continued)

### Straight-Line Ride

**Purpose:** To practise starting and riding in a straight line between marked lanes, two feet apart

**Set-up:** Bike handling skills course — straight line section

**Diagram:**



### Object of the Drill:

To develop confidence and control on a straight line ride as speed increases

### Procedure:

1. Ride counter-clockwise through the course twice.
2. Allow approximately two bike lengths between riders.
3. After riders have gone through both lanes once, and performed acceptably, practise the Whistle-Stop. (p. 19)

### Alternate Hands

**Purpose:** To practise balance and control while riding with one hand removed from the handlebars (e.g., when signalling)

**Set-up:** Same as Straight-Line Ride

### Procedure:

1. Ride through the first lane of the straight line course again, this time with right hand on the handlebars and left hand pointing straight out to the side (just like a left turn signal).
2. Return both hands to the handlebars when making the turn.
3. When entering the second lane, switch hands and ride with left hand on the handlebars, and right hand pointing straight out to the side.

## Teaching Notes (continued)

### ■ Shoulder Checking

Shoulder checking lets you know if anyone is beside or behind you; it can be a signal for a left turn, or it can be used to establish eye contact with a driver so you know that a driver knows if you intend to change lanes. Ride on a straight line; then try to look back without swerving. When you turn to look, turn your torso with chin to shoulder. Try identifying colours of cards flashed behind you. Note your riding line.

### ■ Steering/Cornering

When you turn the handlebars, the bike turns. For a fast turn, keep the inside pedal up, inside knee out and inside shoulder down.

Lean into the turn. When you lean, the front wheel falls into the lean and you turn more

easily. Lean first; then turn. Both these motions happen almost simultaneously. Keep leaning until the turn is finished. Then steer the same way slightly to bring the bike under you and stop the bike from turning.

### ■ Climbing

**Going up** — You want to pedal at a constant rate, so shift to a lower gear before the hill. Pace yourself so you still have energy left at the top of the hill.

**Going down** — Control your speed throughout. Ride, don't slide, and use both front and back brakes equally. Sliding on trails causes the trails to erode. Sliding on pavement quickly ruins your tires and decreases your control.

### ■ Shifting Gears

Gather participants around the bicycle and demonstrate what happens when the gear shifter is moved towards the rider or pushed away from the rider. Before you ride up a hill "gear down" (go to a bigger rear sprocket and the small front chain ring). Going down hill you "gear up". Through trial and error on your bike you will learn which way is which.

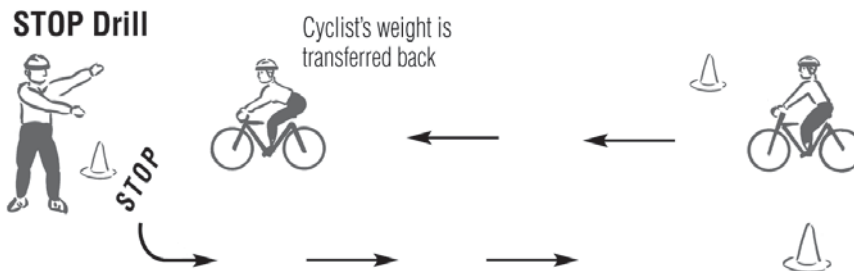
## Drills (continued)

### STOP Drill

**Purpose:** To practise balance, control and proper body positioning for an emergency stop

**Set-up:** Courtyard, basketball court, field (any relatively small area)

**Diagram:**



**Procedure:**

1. Riders line up behind each other about 5 metres in front of you.
2. Riders ride towards you and make an emergency stop.
3. Observe how each participant handles the technicalities of the stop. (i.e., the hand brake sequence, transferring weight toward the back of the bike, balance, etc.)

**Note:** Riders can increase their speed as they become more confident.

### Whistle Stop

*This is a behaviour you can develop to gain instant attention and regroup, or control speed or inappropriate behaviour — use with restraint. Nobody likes listening to whistles interrupting them all the time.*

**Purpose:** To practise braking smoothly, without skidding, when the whistle blows

**Set-up:** Straight line course

**Procedure:**

1. Follow each other on the straight line course. (A bike length between each rider.)
2. When the whistle blows, stop by braking smoothly without skidding or swerving.
3. Riders can increase their speed on the course as their confidence increases.

### Stop on a Dime

**Purpose:** To practise quick stops

**Set-up:** Courtyard, basketball court, field (any relatively small area)

**Procedure:**

Place a dime anywhere on the course. Riders practise stopping with their front wheel right on the dime.

### Cue Card Colours

**Purpose:** To practise shoulder checking

**Set-up:** Straight line course with instructor standing at beginning of course.

**Objective of the Drill:**

To be able to shoulder check while riding down a straight course.

**Procedure:**

1. Riders, one at a time, ride down the straight line course.
2. At three different intervals marked by a cone, riders shoulder check first over one shoulder and then over the other.
3. When the riders begin, the instructor holds up a coloured cue card or a number of fingers. The riders should call out the colour or the number of fingers they see over their shoulder. The instructor says "YES" for a correct response; "NO" for an incorrect response.
4. Keep track of the riders' progress.
5. Observe the control and balance of each rider as they shoulder check.



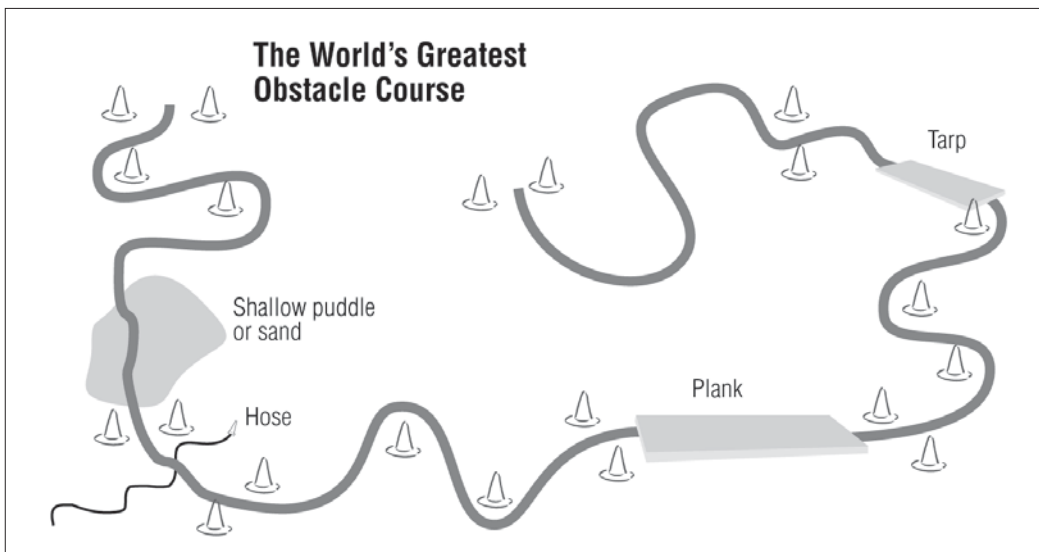
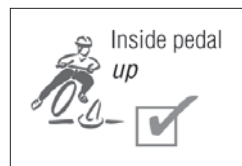
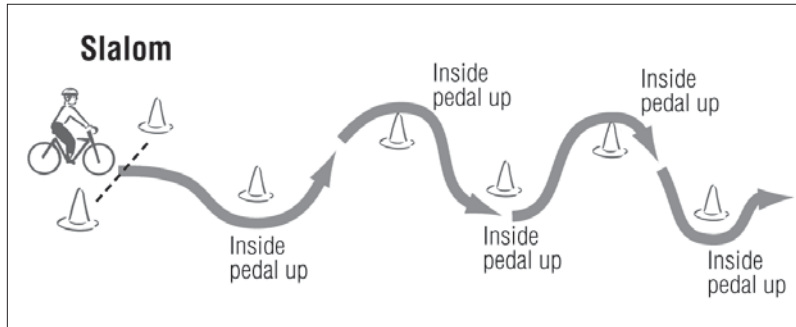
## Drills (continued)

### Slalom

**Purpose:** To practise cornering and tight turns

**Set-up:** Straight line course with cones set up to ride around; or an obstacle course set up on a courtyard or basketball court

**Diagram:**



### Extension

- In a Fine Arts class, design and construct your own safe Obstacle Course.
- Prepare a "Safe Cycling Skills Video" for presentation to a younger class of students.



## SESSION 4

# Smart Signals & Road Hazards

### Introduction

**R**eview traffic control signs and introduce hand signals and warning signs for road hazards. Discuss ways that cyclists and other vehicle drivers signal their intent to move within the traffic system. Communicating the intent to move is key to preventing incidents.

### Main Concepts

**B**y the end of this session, participants will be able to:

1. Recognize the important traffic control signs and signals.
2. Describe a variety of road hazards and warning signs.
3. Demonstrate (off-bike) how to signal a left and right turn with the new “point-point” method.
4. Describe how roads are laid out in their community.
5. Demonstrate and explain how cars and other vehicles signal their intentions.
6. Describe how to communicate with other cyclists.
7. Explain why it is so important to: plan ahead, be predictable, look before moving.
8. Predict the consequences of some inappropriate cycling behaviours at intersections.

### Equipment/Preparation



- Photocopy Worksheets 7, 8, 9, p. 23–25 (review Key p. 31, 32)
- Find/create/photocopy a blank road map of the neighbourhood
- Have a car available for a signals demonstration
- Determine an intersection for observations

### Teaching Notes

#### 1. Road Hazards can include:

- road surfaces: railroad tracks, gravel, water/mud, snow/ice, oil
- bumps: driveway entrances, rocks, debris, sewer covers, lane markers
- holes: drain covers, depressions in pavement, metal covers, drain grates
- sharp objects: glass, rocks, nails, wire, metal pieces
- intersections
- animals

#### 2. Hand Signals

- Emphasize that a shoulder check and signals are made before making a manoeuvre.
- The traditional way of signaling (which uses the left arm only), is being replaced by the “point-point” method. Make sure the arm is level with the shoulder and perpendicular to the body. Then with the appropriate arm (i.e. left for left turns, right for right turns), clearly point the way you want to go.  

- Signal before a turn, but turn with both hands on the handlebars.
- The slow down signal — straight left arm at 5 o'clock and the palm facing backwards — is particularly important when riding in a group.  

- Emphasize that in actual traffic situations, some people in cars don't signal. Simulate these situations to create awareness.

## Indoor Activities

1. Review traffic control signals. Use Worksheets 7 and 9. Role play the appropriate actions.
2. Discuss Warning Signs & Road Hazards Worksheet 8 (use Key p. 31)
3. Play Safe-T Bingo (p. 25)
4. Review and demonstrate off-bike, hand signals — right turn, left turn, slow down, stop.

## Outdoor Activities

1. Review and demonstrate motor vehicle signals — brake lights, turn lights, hazard lights. Take participants to the parking lot and demonstrate with a parked vehicle.
2. Take participants on a short walk. Indicate the location of traffic signals, signs, and road hazards on a blank map of the neighbourhood.
3. Spend 15 minutes at a busy intersection. Observe the number of vehicles which go straight through in one direction, how many turn right and how many turn left. Note how many fail to signal before the intersection. Discuss the implications and strategies for cyclists.
4. Discuss and demonstrate what happens in a group if the leader does not clearly signal his/her actions.

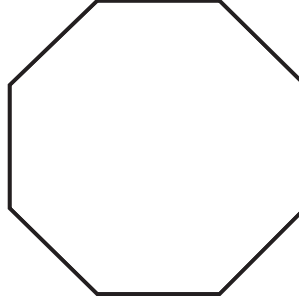


# Traffic Signs & Signals

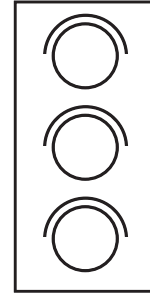
Complete the design of traffic signs or signals, according to the description provided below each diagram. Then colour the signs or signals with the correct colours.



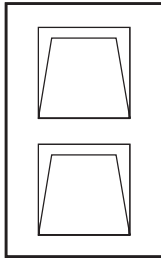
1. Pedestrian crosswalk



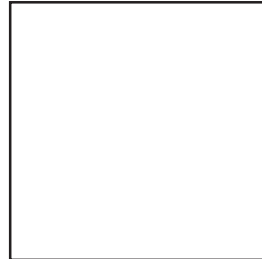
2. Stop



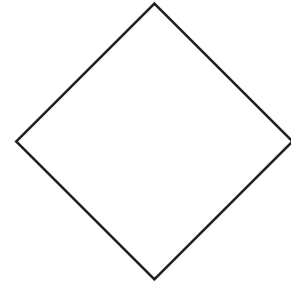
3. Warning:  
Light will turn red



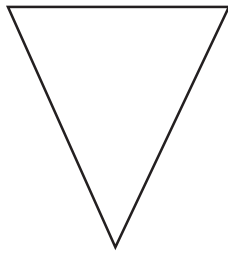
4. Don't walk



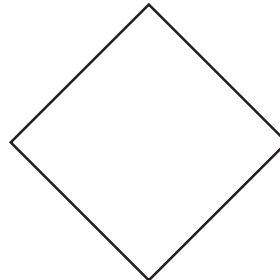
5. No left turn



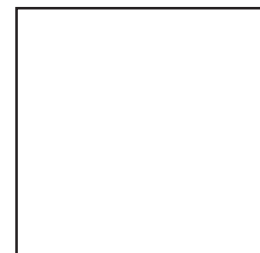
6. Railroad crossing



7. Yield



8. Road narrows



9. Do not enter

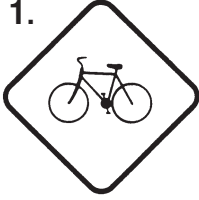


10. One-way street

# Warning Signs & Road Hazards

**W**arning signs tell drivers of vehicles to expect something coming up ahead. Work with a partner to predict what you should watch out for if you see each of the signs below.

1.



\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2.



\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

3.

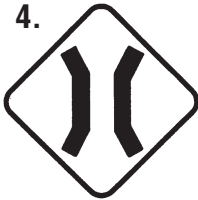


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4.

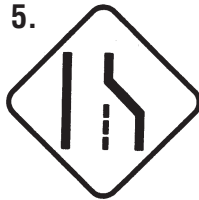


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5.



\_\_\_\_\_

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6.

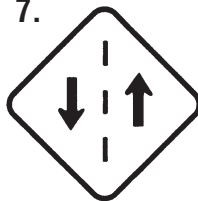


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7.

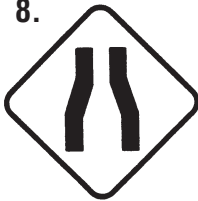


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8.



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\_\_\_\_\_

\_\_\_\_\_

9.



\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

10.



\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

11.



\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

12.

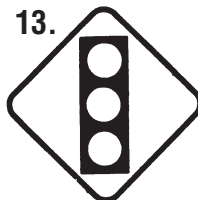


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13.



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\_\_\_\_\_

# Safe-T Bingo

- Using scissors and glue or a computer scan, create a number of different versions of this SAFE-T BINGO card.
- Then cut out individual symbols to call out for the game.



# Intersections & Defensive Riding

## Introduction

**R**eview and practise the techniques of cycling through intersections. Then introduce participants to the skills utilized when predictable and unpredictable things create an emergency or challenging situation for a cyclist. Planning, preparation and practice of strategies for avoiding and handling various hazards are important factors in prevention.

## Main Concepts

**B**y the end of this session, participants will be better able to:

1. Ride to a simulated intersection and make a right turn.
2. Demonstrate how to make left and right turns and signals on-bike.
3. Ride defensively to avoid road hazards.
4. Take evasive action to avoid road hazards (for older participants).
5. Make an emergency stop.
6. Make an instant turn (for older participants).
7. Explain and demonstrate proper clothing and equipment for night riding.
8. Describe appropriate cycling behaviours in certain kinds of weather.

## Equipment/Preparation

- Participants: bikes and helmets
- Photocopy Worksheets 4 and 10, p. 9 and 29
- Toy cars, town etc. to assist in demonstrating traffic patterns
- Hazards: sand, plywood, hose, tarp, rocks, piece of clothing, pylon
- Cones, dimes, reflective clothing

## Teaching Notes

### 1. Intersections

#### Straight Ahead

You can ride your bike through an intersection the way a car does or you can walk your bike on the crosswalk. It's safer to walk your bike if it is a busy intersection.

#### Turning Right

- Slow down or stop if there is a stop light or sign
- Look left then right (all ways)
- Shoulder check
- Hand signal (p. 21)
- Place both hands on handlebars and turn
- Ride on the right side of the road, single file, in a straight line

#### Turning left

Encourage young riders and riders at busy intersections to make left turns by walking their bikes across the crosswalks.

### 2. Avoiding hazards

Ride one metre out from the curb to avoid hazards like gutters, and to be sure other vehicle operators see you.

### 3. Taking evasive action (for the older participants)

Keep riding straight until you are very close to the obstacle (start with a piece of cloth or a pylon). Just before the obstacle, turn the handlebars quickly without leaning so the front wheel goes around the obstacle. The front wheel will snake around the obstacle but your body and handlebars will barely move.

With practise you will remain balanced by compensating with turns and leans. Watch this manoeuvre from the front so you can see what it should look like.

### 4. Making an emergency stop

If you rely on the brakes to avoid sudden obstacles, and you do not apply the brakes properly, several things could happen — you could skid out of control or you could fly over the handlebars. In an emergency, lift off the seat and move behind it to keep the rear wheel down. Brake equally (front brake and back brake). If skidding occurs, release the front brake slightly. This will transfer your weight further back and help keep the wheels rolling. Avoid emergency stops by avoiding the hazards and situations in which you have to stop suddenly.

## Teaching Notes (continued)

### 5. Making an instant turn (for the older participants)

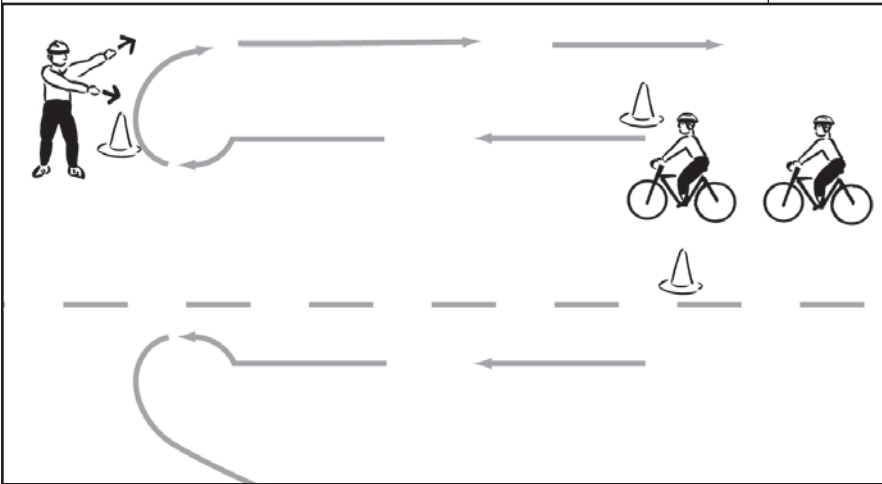
This turn will never feel completely natural, but may help you avoid a sudden collision. Suppose you are riding alone and a car passes you and turns right, directly in front of you. For an instant turn, turn your front wheel left towards the car. This will force a lean to the right which is followed by turning the handlebars to the right. Because your weight is already over on that side, the turn is very fast.

## Indoor Activities

1. Review procedures at intersections.
  - Use Worksheets 4 and 10 and a chalk board or whiteboard for examples.
2. Use a model street system and miniature cars, buses, trucks, and cyclists to demonstrate correct actions for:
  - entering a roadway
  - passing a parked car
  - moving across a roadway
  - turning left, etc.
3. Review the laws, procedures and appropriate clothing for night riding.
4. Take participants into a dark room and demonstrate the effects of proper and improper clothing and lighting.

## On-Bike Activities

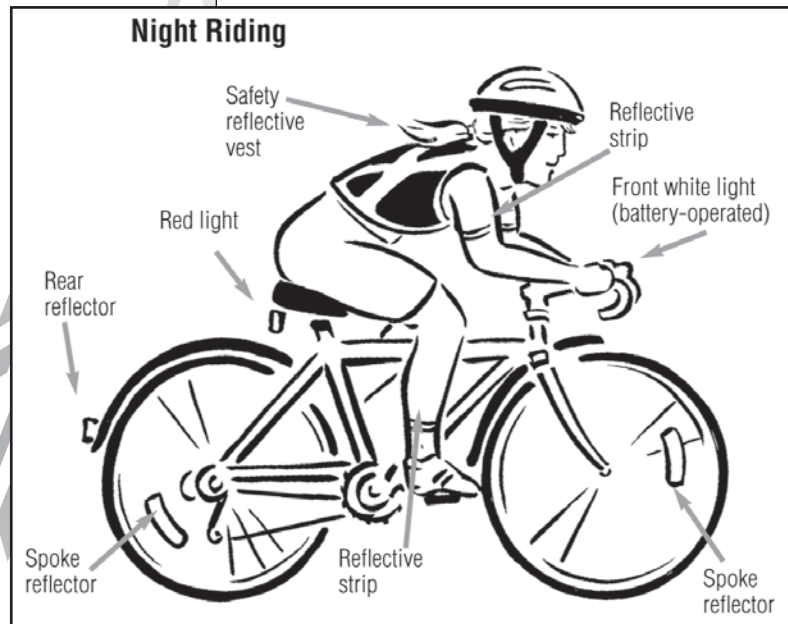
1. Practise emergency stops. Practise quick turns to avoid a hazard.
2. Practise riding on different surfaces (sand, dirt, plywood).



*Note: This manoeuvre is very difficult for young children. Emphasize that young children should avoid hazards altogether by riding slowly enough to stop if there is danger.*

### 6. Night Riding

According to the law, a white front light, a red rear light, and a rear reflector (MVA, Section 183(6)) are required one-half hour after sunset to one-half hour before sunrise. Emphasize "cycling to be seen."



## Drills

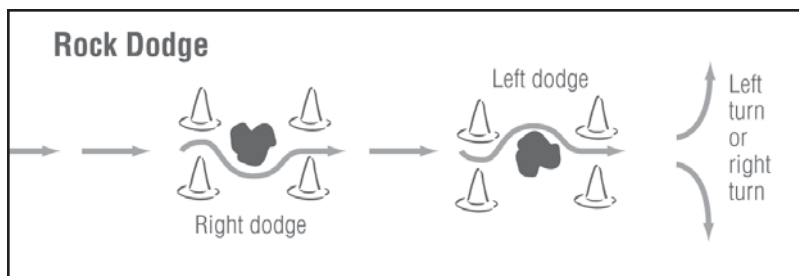
### *Rock Dodge*

**Purpose:** To practise techniques for dodging obstacles

**Set-up:** Courtyard, basketball court (any small area)

Set up the cones so there is very little space to manoeuvre.

**Diagram:**



### **Object of the Drill:**

To make it through the obstacle course without knocking over the cones or running over the obstacle

### **Procedure:**

1. Ride through the first set of cones, dodging the obstacle to the right side.
2. Then continue through the next set of cones and dodge to the left.
3. Practise left and right turns at the end of the drill.

### *Stop on a Dime*

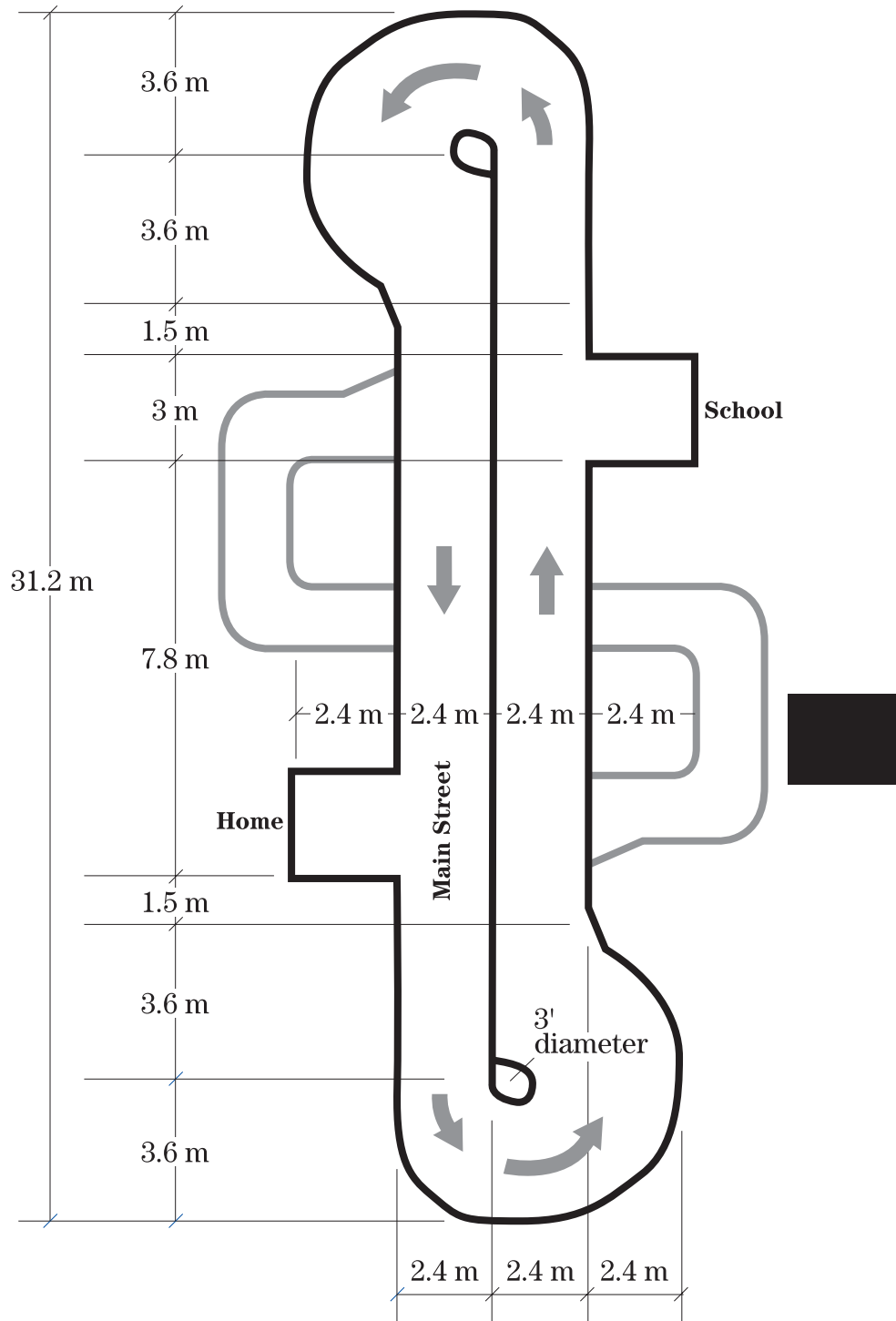
(see p. 19.)

### *The World's Greatest Obstacle Course*

(see p. 20.)



# A Streets and Roads Layout\*



\* Source: *Bicycle Federation of America. Basics of Bicycling: A Curriculum for Elementary Level Bicyclists Training*, p. 21.

## SESSION 6

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### **Bike Smarts – Step Two: Streets & Roads**

**Y**ou must be certified to lead Session 6, **Bike Smarts — Step Two**. This session involves on-road experience. Because of liability and safety issues, it is in the best interests of all involved to ensure that the leaders of children on bicycles on-road are certified. The certification level recommended is Can-Bike II or an equivalent.

Session 6 requires on-road certified instructors. For a list of certified instructors, contact the B.C. Cycling Coalition at 250-370-0428 or [www.bccc.bc.ca](http://www.bccc.bc.ca)

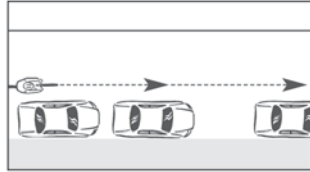


# Worksheet Answer Keys

## Worksheet 3

1. Obey traffic signals.
2. Keep to the right of the road.
3. Signal before you turn or stop.
4. Beware of road hazards.
5. Be visible at night. Have front and back lights and back reflectors.
6. Beware of parked cars.
7. Watch for pedestrians.

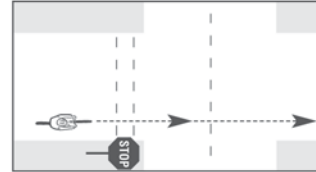
## Worksheet 4



(Riding past parked cars)  
1, 6, 9



(Riding out from a driveway)  
3, 4, 7, 8, 9, 10



(Crossing an intersection  
2, 3, 5, 6, 9 or walk your  
bike across the crosswalk)

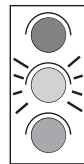
## Worksheet 7



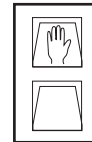
**1.**  
Pedestrian  
Crossing



**2.**  
Stop



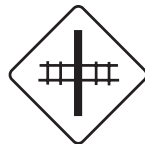
**3.**  
Warning: Light  
will turn red



**4.**  
Don't walk



**5.**  
No left turn



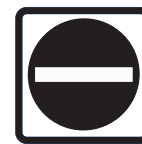
**6.**  
Railroad  
crossing



**7.**  
Yield



**8.**  
Road  
narrows



**9.**  
Do not enter



**10.**  
One-way  
street

## Worksheet 8

1. Cycling Allowed
2. People Working on the Road Ahead
3. Wildlife in Area
4. Bridge Ahead
5. Lane Merges Ahead
6. Divided Highway Ends
7. Single Lane Traffic Bothways
8. Road Narrows
9. Rocks May Have Fallen on Road
10. Stop Sign Ahead
11. Slippery Road Section
12. Steep Hill
13. Traffic Lights Ahead.

# Worksheet Answer Keys

## Worksheet 9

1. Stop: Come to a full stop. Check for traffic all ways. Proceed when safe.
2. Yield: Slow down or stop for cross traffic.
3. Crosswalk: Slow down. People on foot have the right-of-way at a pedestrian crossing.
4. Do not pass.
5. School Crosswalk: Slow down. People on foot have the right-of-way at a pedestrian crossing.
6. Playground Ahead: Proceed with caution, children at play.
7. Pedestrians: People on foot have the right-of-way at a pedestrian crossing.
8. Wrong Way: Do not proceed.
9. Arrow: Proceed only in the direction of arrow.
10. Left Turn Allowed.
11. Right Turn Allowed.
12. Pedestrian Crossing Not Allowed.
13. Do Not Enter.
14. Traffic Lights Ahead.
15. Crosswalk: Look out, children from the nearby school will cross the road at this school crossing.
16. This is the maximum speed that traffic should travel.
17. No Cycling Allowed.
18. Stop Sign Ahead.
19. Cycling Allowed.
20. Do Not Pass When Lights Are Flashing.
21. Rocks Ahead: Proceed with caution, rocks may have fallen on the road.
22. Slippery Road: Proceed with caution, this section of road may be slippery.
23. Railway Crossing: Slow down. Look both ways and listen for train. If there is no train, proceed with caution. Always cross tracks at right angles or your wheels may get caught.
24. Wildlife in Area: Proceed with caution, wildlife may cross your path in this area.



# Key Contacts

Insurance Corporation of British Columbia  
151 West Esplanade (171 EspW)  
North Vancouver, B.C.  
V7M 3H9  
Phone: 604-661-6512  
Fax: 604-661-6701  
www.icbc.com

B.C. Cycling Coalition  
1418 Grant Street  
Victoria, B.C.  
V8R 1M5  
Phone: 250-370-0428  
Fax: 250-370-5236  
e-mail: bccc@canada.com  
www.bccc.bc.ca

B.C. Safety Council  
#2225 - 21331 Gordon Way  
Richmond, B.C.  
V6W 1J9  
Phone: 604-214-7433  
Fax: 604-214-7434  
www.safetycouncil.bc.ca

B.C. Sport Medicine Council  
#3 - 6501 Sprott Street  
Burnaby, B.C.  
V5B 3B8  
Phone: 604-473-4850  
Fax: 604-473-4860  
e-mail: smcbc@douglas.bc.ca

For information about **Bike Smarts**, contact:

**Way to Go! School Program**  
3538 West 24th Avenue  
Vancouver, B.C.  
V6S 1L4  
Phone: 604-732-1511  
Toll free 1-877-325-3636  
Fax: 604-733-0711  
e-mail: waytogo@telus.net

B.C. Injury Prevention Centre  
D-6, 2733 Heather Street  
Vancouver, B.C.  
V5Z 3J5  
Phone: 604-875-5856  
Fax: 604-875-5858

Ministry of Education  
Curriculum Branch  
P.O. Box 9152, Stn Prov Govt  
Victoria, B.C.  
V8W 9H1  
Phone: 250-356-7551  
Fax: 250-356-2316  
e-mail: EDUC.curriculum@gems4.gov.bc.ca  
www.dir.gov.bc.ca

Ministry of Health Planning  
Office for Injury Prevention (Mailroom)  
1515 Blanshard Street  
Victoria, B.C.  
V8W 3C8  
Phone: 250-952-1533  
Fax: 250-952-1570

*Way to Go!* School Program  
3538 West 24th Avenue  
Vancouver, B.C.  
V6S 1L4  
Phone: 604-732-1511  
Toll free 1-877-325-3636  
Fax: 604-733-0711  
e-mail: waytogo@telus.net  
www.waytogo.icbc.bc.ca

For certification information call:

B.C. Cycling Coalition  
1418 Grant Street  
Victoria, B.C.  
V8R 1M5  
Phone: 250-370-0428  
Fax: 250-370-5236  
e-mail: bccc@canada.com  
www.bccc.bc.ca

# Desired Learning Outcomes of the Bike Smarts Program

**Bike Smarts is designed to develop knowledge, skills and attitudes in a variety of areas.<sup>1</sup>**

## Knowledge and Understanding

As a result of participation in the activities of the **Bike Smarts Program**, participants will be able to:

- list important rules and laws of the road and correctly apply those rules and laws while on a bicycle
- identify important road and traffic signs and follow their directions in a real or simulated environment
- identify and label the important parts, equipment and accessories of a bicycle and explain the reasons for wearing a bicycle helmet
- select, properly fit and wear a bicycle helmet
- demonstrate basic maintenance procedures
- list cycling hazards and describe or demonstrate evasive action for each one
- describe the correct procedures and necessary equipment for night riding
- describe their responsibilities as users of the transportation system
- explain and demonstrate defensive driving strategies for cyclists
- list the physical, emotional and spiritual benefits of cycling as an activity
- diagram the basic layout of a community transportation system
- list the benefits of cycling to the environment

## Attitudes and Values

As a result of participation in the activities of the **Bike Smarts Program**, participants will be able to:

- demonstrate their willingness to follow the rules, routines and procedures of safety in a variety of cycling activities

- discuss and resolve issues related to bicycle safety
- demonstrate their willingness to wear a bicycle helmet
- demonstrate increased respect for other road users (fair play)
- demonstrate increased respect for their abilities and skills as a cyclist
- demonstrate increased enthusiasm for cycling as a healthy, satisfying and environmentally friendly activity
- demonstrate increased willingness to cooperate and participate safely in group activities
- share their enthusiasm and knowledge of cycling safety with their parents and other participants

## Skills

As a result of participation in the **Bike Smarts Program**, participants will be better able to:

- use appropriate motor skills to control and manoeuvre a bicycle and take evasive action
- anticipate potential dangers and actions of other road users
- communicate with other road users
- avoid incidents which may cause injury
- communicate their understandings and concerns regarding bicycle safety

*Note: The degree to which participants in any particular school will achieve the outcomes will be dependent on the amount of time allocated for a cycling safety program — and on your skill and preparation. The ideal program would be presented in six one-hour blocks of time.*

<sup>1</sup> Based on Learning Outcomes of the Ministry of Education (Personal Planning K-7; Physical Education K-7) approved by the Cycling Education Committee, 1994.

# **Supplementary Activities and Evaluation**

- **Session Planning Guide**
- **Your Bike Injury Fact Sheet**
- **Safe Ride Crossword Puzzle**
  - **Participant Sheet**
  - **Puzzle Clues**
  - **Puzzle Answer Key**
- **My Bike Smarts Progress Sheet**
- **Participant Observation Form**
- **Bike Smarts Certificate**
- **Info Sheets**
  - **Bicycle Safety for Children**
  - **Cycling Safety Tips**

# Session Planning Guide

Use this sheet as a planning guide for each session.

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Session

Date

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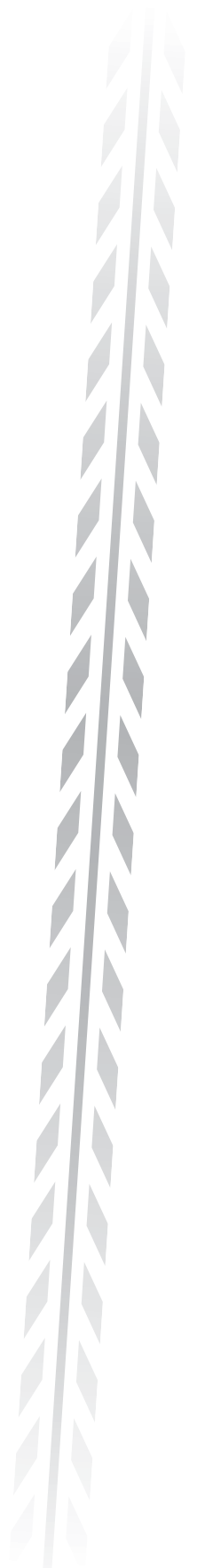
Main Concepts

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Equipment/Preparation

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Phases	Activities	On bike	Off bike
Motivation and Review			
Information and Skills Development			
Wrap-up and Sharing			
Follow-Up Comment			





# Your Bike Injury Fact Sheet\*

Bike injuries in childhood  
are common and potentially disastrous

## The facts

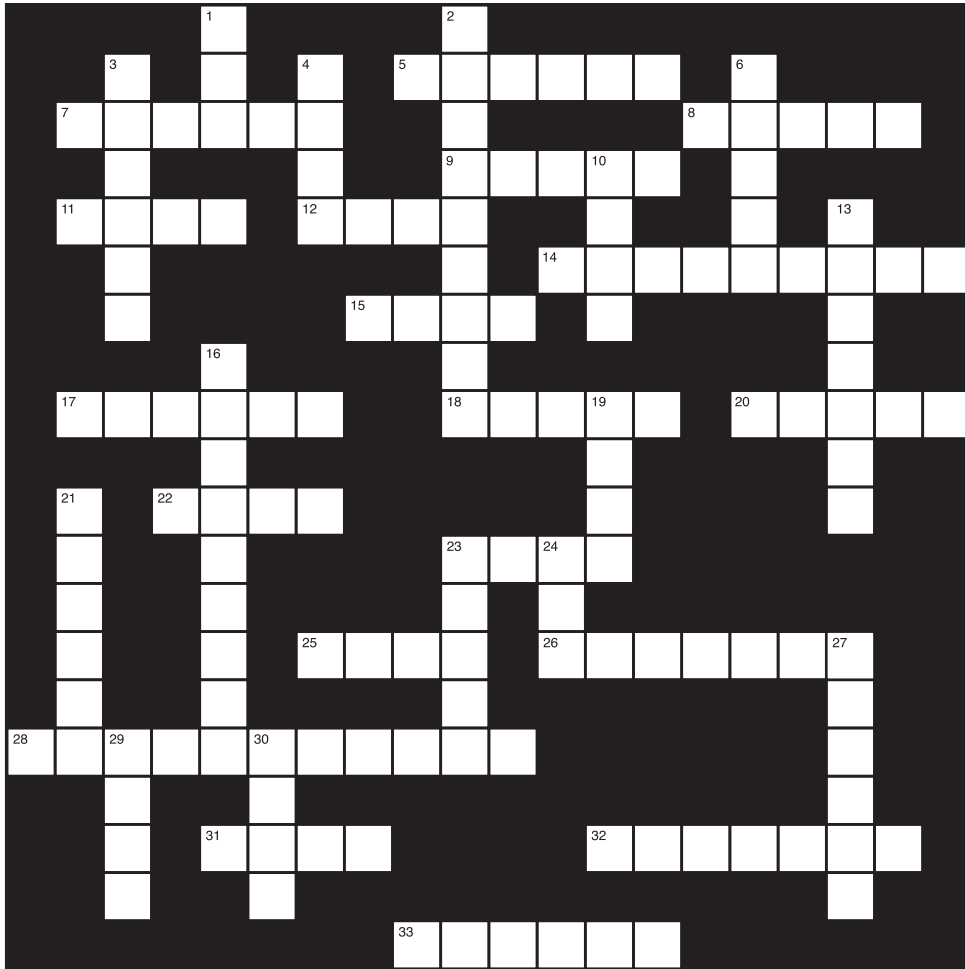
- Biking is the most popular outdoor activity among young Canadians. Between 86% and 90% of children aged 10 to 14 are bicyclists.
- More than 150 Canadians die each year from bike injuries. Children aged 5 to 14 account for about half of these deaths.
- Every year, over 50,000 children are seriously injured in bike related mishaps.
- Almost half of all the children injured are under 10 years old and 25% are under 7.
- Eighty-five per cent of bike injuries in childhood **do not** involve a motor vehicle.
- The vast majority of children who are involved in bike mishaps (85%) are within **six blocks** of home.
- The human skull can be shattered by an impact of 7 – 10 km/h, and children's skulls are more vulnerable than those of adults.
- A fall from 2 feet (60cm) can cause permanent brain damage; a fall at a speed of 20 km/h can result in death.
- Head injuries account for 75% of all deaths from bike injuries.
- Cycling mishaps are the leading cause of hospital admissions for head injury in children.
- Survivors with brain injury may suffer seizures, intellectual and memory impairment, and personality changes.
- The lifetime costs for a head-injured Canadian — including intensive care, long-term hospital costs, lifetime care and support at home — are estimated to be in the range of \$1 – \$1.5 million.

**Wearing a bicycle helmet reduces the risk  
of head injury by up to 85%,  
and the risk of brain injury by 88%.**

\* From Canadian Bike Helmet Coalition. How to Organize a Community Project ("Bike Helmets for Children").

# Safe Ride Crossword Puzzle Participant Sheet

Name \_\_\_\_\_



### Word List

both  
cars  
caution  
common  
crosswalk  
double  
down  
file

good  
grips  
green  
handle  
hazardous  
hand  
helmet  
horn  
left

light  
listen  
lock  
out  
pedals  
pedestrians  
red  
reflector  
right

safety  
seat  
shoes  
tire  
tool  
traffic  
warning  
white



# Safe Ride Crossword Puzzle Clues

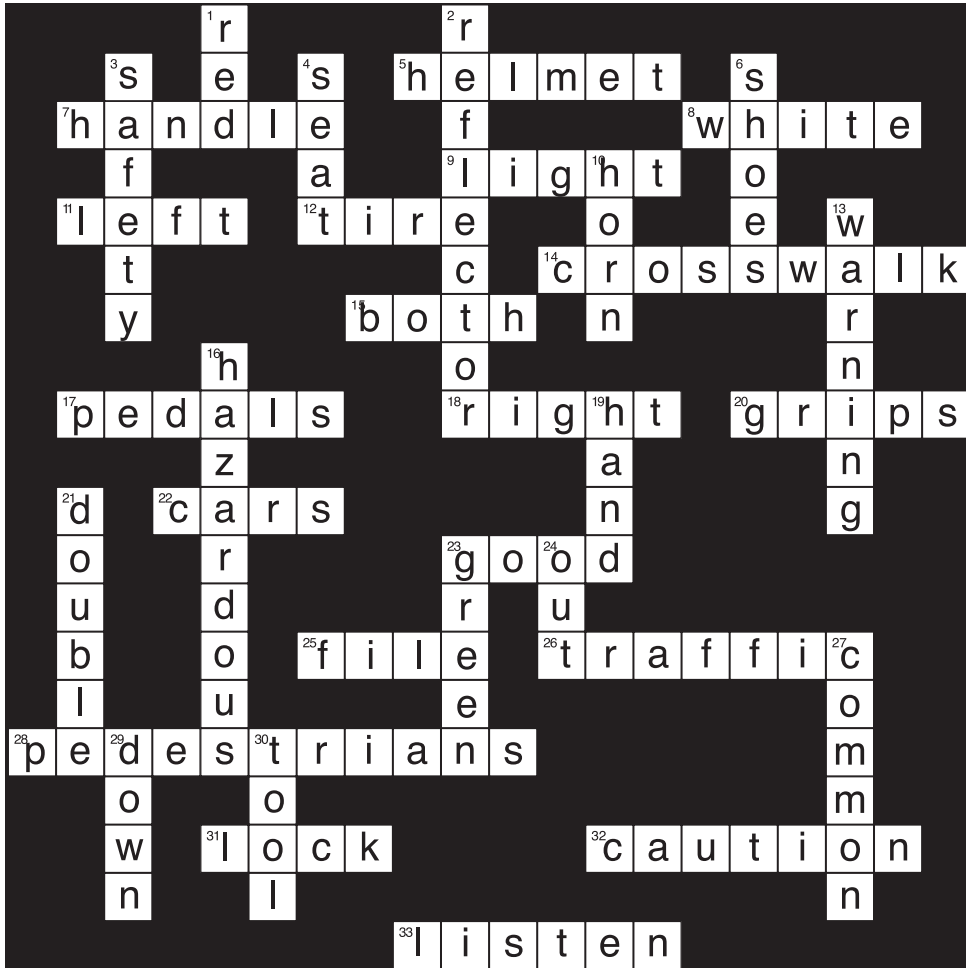
## Across Clues

5. A good bicycle rider always wears a \_\_\_\_\_ on his or her head.
7. Adjust \_\_\_\_\_ bars to the correct height.
8. \_\_\_\_\_ is a good colour to wear at night.
9. Use a \_\_\_\_\_ at night.
11. Put your left arm straight out to turn \_\_\_\_\_.
12. Always have the correct \_\_\_\_\_ pressure.
14. Walk your bike across the \_\_\_\_\_.
15. Keep \_\_\_\_\_ hands on the handle bars.
17. For extra safety, put reflective tape on your \_\_\_\_\_.
18. Ride on the \_\_\_\_\_ side of the road.
20. Handle \_\_\_\_\_ should be maintained.
22. Streets are used for \_\_\_\_\_ too.
23. Keep your bike in \_\_\_\_\_ working order.
25. Ride in single \_\_\_\_\_.
26. \_\_\_\_\_ signs apply to bicycles too.
28. \_\_\_\_\_ have the right-of-way.
31. Always \_\_\_\_\_ your bicycle for security.
32. Amber means \_\_\_\_\_.
33. Stop, look and \_\_\_\_\_.

## Down Clues

1. \_\_\_\_\_ means stop.
2. Have a \_\_\_\_\_ on your fender.
3. Follow traffic \_\_\_\_\_ rules.
4. Adjust your \_\_\_\_\_ to the correct height.
6. Always wear \_\_\_\_\_ when cycling.
10. Have a \_\_\_\_\_ or bell to warn.
13. Give lots of \_\_\_\_\_ before you turn.
16. Watch out for \_\_\_\_\_ road conditions.
19. Use your \_\_\_\_\_ signal when you turn a corner.
21. Do not \_\_\_\_\_ on a bike.
23. \_\_\_\_\_ means go.
24. \_\_\_\_\_ and up was the signal to turn right, now it's the point-point signal.
27. Use \_\_\_\_\_ sense when cycling.
29. Out and \_\_\_\_\_ means you are about to stop.
30. On long distance rides you should carry a \_\_\_\_\_ kit.

# Safe Ride Crossword Puzzle Answer Key



# My Bike Smarts Progress Sheet

## **Bike Smarts Session 1 – Road Rules**

I learned about: \_\_\_\_\_

\_\_\_\_\_

I practised: \_\_\_\_\_

\_\_\_\_\_

What I enjoyed most was: \_\_\_\_\_

\_\_\_\_\_

What I need to do better is: \_\_\_\_\_

\_\_\_\_\_

## **Bike Smarts Session 3 – High Tech Handling**

I learned about: \_\_\_\_\_

\_\_\_\_\_

I practised: \_\_\_\_\_

\_\_\_\_\_

What I enjoyed most was: \_\_\_\_\_

\_\_\_\_\_

What I need to do better is: \_\_\_\_\_

\_\_\_\_\_

## **Bike Smarts Session 5 – Intersections & Defensive Riding**

I learned about: \_\_\_\_\_

\_\_\_\_\_

I practised: \_\_\_\_\_

\_\_\_\_\_

What I enjoyed most was: \_\_\_\_\_

\_\_\_\_\_

What I need to do better is: \_\_\_\_\_

\_\_\_\_\_

## **Bike Smarts Session 2 – Bikes & Helmets**

I learned about: \_\_\_\_\_

\_\_\_\_\_

I practised: \_\_\_\_\_

\_\_\_\_\_

What I enjoyed most was: \_\_\_\_\_

\_\_\_\_\_

What I need to do better is: \_\_\_\_\_

\_\_\_\_\_

## **Bike Smarts Session 4 – Smart Signals & Road Hazards**

I learned about: \_\_\_\_\_

\_\_\_\_\_

I practised: \_\_\_\_\_

\_\_\_\_\_

What I enjoyed most was: \_\_\_\_\_

\_\_\_\_\_

What I need to do better is: \_\_\_\_\_

\_\_\_\_\_

## **Bike Smarts Final Comments**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Name: \_\_\_\_\_

# Bike Smarts Participant Observation Form\*

Session: \_\_\_\_\_ Class/Block \_\_\_\_\_ Date: \_\_\_\_\_

Skill/Concept: \_\_\_\_\_

A - Superior	B - Satisfactory	C - Improving	I - Experiencing Difficulty	
Names of Participants	Criteria to be Observed			
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
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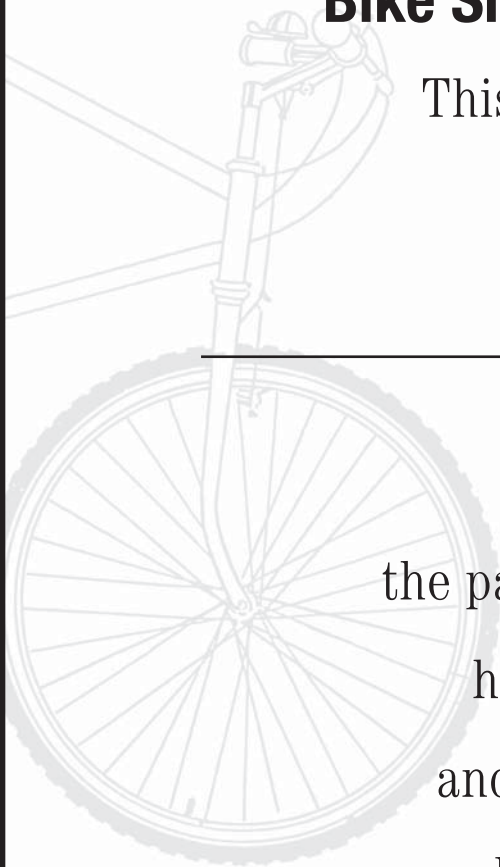
\* Adapted from B.C. Ministry of Education, Physical Education K to 7 Integrated Resource Package, 1995.





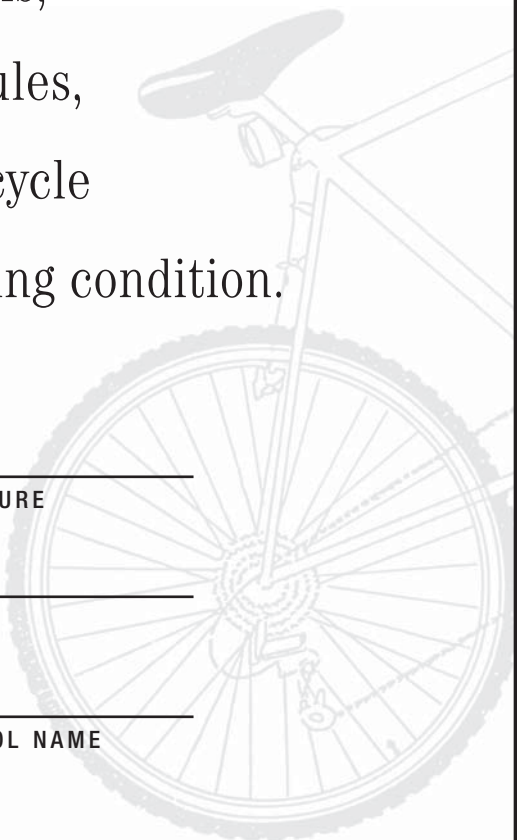
# Bike Smarts Certificate

This certifies that



\_\_\_\_\_

knows  
the parts of a bicycle,  
hand signals,  
and safety rules,  
and has a bicycle  
that is in good operating condition.



\_\_\_\_\_  
OFFICIAL SIGNATURE

\_\_\_\_\_  
DATE

\_\_\_\_\_  
ORGANIZATION/SCHOOL NAME

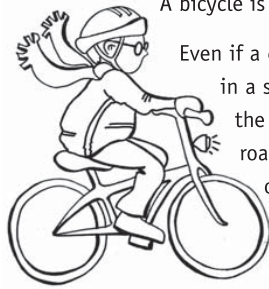


# Bicycle Safety for Children

i N F O  
update  
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## Information for parents, guardians, childcare providers

### A child's first vehicle



A bicycle is not a toy. It's a child's first vehicle.

Even if a child can balance a bicycle and ride in a straight line, it may be too soon for the child to handle a bike on a busy road. Generally, children under nine or 10 years lack the perception and decision-making skills to be safe cyclists and it is advised not to ride on busy roads without an accompanying adult. You can prepare

children to be safer cyclists by helping them practise safe-riding skills and teaching them about safety equipment and the rules of the road. The following information can help.

### A bicycle must be the right size

A bicycle that fits properly is easier to control, comfortable to ride and does not hurt the knees.

- The seat should be at hip height when the child stands beside the bike.
- A child should be able to straddle the bike with both feet flat on the ground.
- Young beginner cyclists should be able to put both feet on the ground while sitting on the seat.
- While a child is seated on the saddle with both feet on the pedals (ball of foot should be on pedal), the legs should be almost straight at the bottom of the pedal stroke, with a slight bend of the knee.
- In a normal riding position the child's weight should be evenly balanced allowing the child to rest their hands lightly on the handlebars.

- The handlebar stem and seat post must be inserted at least five centimetres into the frame. Both usually have a mark that indicates the maximum extension point. Longer seat posts and stems are available if you need them.
- Drop by your local bicycle store and have them check the proper bicycle fit for your child.

### Bicycle safety equipment

In 2005, approximately 1,300 people reported injuries to ICBC in cycling-related crashes in B.C.

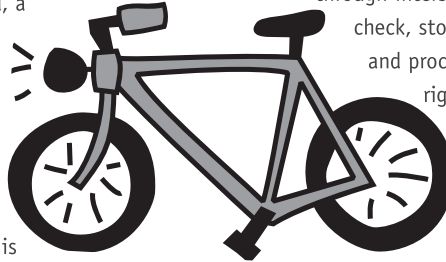
- A bicycle helmet is a cyclist's best protection from head injuries in case of a fall. Bicycle helmets are mandatory in B.C. Helmets should have CSA, ASTM or SNELL safety standards approval clearly designated on them.
- Hockey or other types of sports helmets are not legal for cycling since they are designed and tested for other types of impacts.
- A visible cyclist is a safer cyclist. An especially important point for young children as they are so much smaller. Light or reflective clothing makes a cyclist easier to see.
- To prevent a fall, if a child's bike has no chain guard, pant legs should be tucked into socks or a pant leg clip and shoelaces should be fastened and tucked away to prevent getting caught in the chain, crank set or brakes.
- A child's bike should have a horn or bell and a reflector. For riding at dusk, dawn, at night and in poor weather conditions (e.g. fog, rain), a rear red light and a white front light are required.



## Learning to ride

Supervised practice is the best way to learn. The safest place to learn to balance and steer a bike is away from the road (e.g. a vacant parking lot).

- Before learning to go on the road, a child should be able to: ride in a straight line, ride at different speeds, turn, stop, look back and shoulder check while riding, signal while riding and be able to make emergency stops.
- Teaching children cycling signals is important. It's essential to also teach children how to shoulder check for traffic before they signal a turn. Many children mistakenly think that the signal is like a magic wand; drivers will see the signal and automatically stay out of the way.
- **To shoulder check:**
  1. Keep both hands on the handlebars and scan backward over the left shoulder for traffic.
  2. If the way is clear, signal and proceed with the turn, and keep shoulder checking for approaching traffic or change in traffic patterns.
  3. If traffic will obstruct the turn, wait until the way is clear, then check again and if clear, proceed following points 1. and 2. above.



- Remember it is illegal to cycle in crosswalks and in most jurisdictions it is illegal to cycle on sidewalks.
- Option B: after looking in all directions proceed through intersection on the right. Shoulder check, stop and make a 90-degree left turn and proceed as if you were coming from the right.
  - Always yield to pedestrians in the crosswalk.
  - Yield to oncoming traffic and watch for right-turning vehicles.

## Advanced cyclists:

1. Look back over your left shoulder for approaching traffic.
2. Signal a left turn, and keep shoulder checking all through this manoeuvre. When clear, move over to the left side of the lane (on a two-lane road), or to the far right of the dedicated left-turning lane.
3. Be positioned so cars going straight through cannot pass you on your left.
4. In a two-lane road make sure left-turning cars will either remain ahead or behind you. This is so you will not be squeezed by other traffic.
5. In a dedicated left-turning lane make sure motorized traffic will remain on your left or ahead or behind you. This so you will not experience conflict and all traffic will resume the right road position once you have made your turn.
6. Yield to oncoming traffic before turning and watch for right-turning vehicles moving into your lane.
7. Obey all traffic signs or lights at the intersection.
8. Still signalling left, cycle into the intersection and turn left onto the right side of the intersecting road.

**Note:** *If riding in a bike lane, or on a road with several lanes, cyclists need to look and signal each time they change lanes. Cyclists must never make a left turn from the right side of the road. Never make a direct left turn from a bike lane. You need to position yourself properly before making a left turn.*

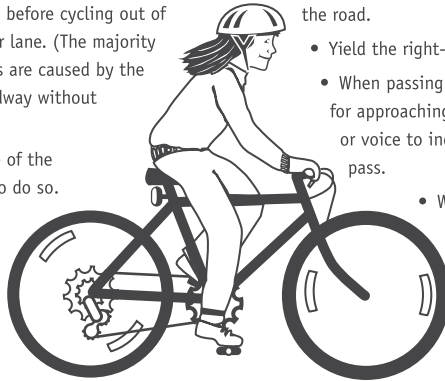
## How to turn left at an intersection

### Young beginner cyclists:

- Obey all traffic signs or signals while approaching and at the intersection.
- Look in all directions for traffic before proceeding through the intersection.
- Option A: Cycle straight across the intersection on the right-hand side of the road then shoulder check, stop and dismount. Make a 90-degree left turn and position yourself on the sidewalk.
- If there is a signal, wait for the light to turn green or for the traffic to clear, then walk your bike across the intersection.

### Cycling safety tips

- Always wear a bicycle helmet — it's the law in B.C. Position it flat on the head, not slanting forward or back. Fasten the chinstrap to fit snugly.
- Stop and look all directions before cycling out of an intersection, driveway or lane. (The majority of children's cycling crashes are caused by the child riding out onto a roadway without looking.)
- Keep to the right-hand side of the road as much as it is safe to do so.
- Ride single file — it's the law in B.C.
- Keep a straight line. Do not weave in and out of parked cars, obstacles, etc.
- Never ride your bike on the left-hand side of the road while facing traffic. A bicycle is a vehicle; cyclists need to cycle on the right-hand side of the road.
- It is against the law to carry passengers on a bike with one seat.
- Never pull or tow anybody with your bike.
- Shoulder check before signalling to turn, change lanes, move in and out of traffic or stop.
- Keep both hands on the handlebars unless signalling.
- Obey all traffic signs and signals and rules of the road.
- Yield the right-of-way to pedestrians.
- When passing other cyclists, look behind for approaching traffic and use a bell, horn or voice to indicate you are about to pass.
- Walk your bike over rough spots (gravel, ruts, rocks, and potholes) and over cattle guards, crosswalks, and on sidewalks.
  - Railroad tracks are uncomfortable to cross. To safely cross, use caution and angle your bike over the tracks, rather than riding over them straight on.
- Never ride your bike through puddles. There may be hazards hidden beneath the water that you can't see.
- Remember your bicycle is not a toy. It is a vehicle.



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