road safety learning resources: teacher's manual

grade 4

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Statement of Limitation

British Columbia has laws, regulations and rules prescribing our behaviour on the road (the "Law"). The material you are reading now relates to the Law, but ICBC cannot guarantee that it fully and accurately describes the Law. This material may be oversimplified, out of date, inapplicable, incomplete or incorrect. For this reason, you should research the Law, without relying on this material. ICBC does not accept any liability resulting from reliance on this material.

Acknowledgements

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Focus: See and be seen and be safe

The learning resources presented in this package are designed to support the new B.C. Provincial Curriculum, specifically targeting the Big Ideas and Learning Standards for Grade 4 Applied Skills and Technology, Arts Education, English Language Arts, Mathematics, Physical and Health Education, and Career Education. It consists of cross-curricular learning plans focusing on light, visibility and pedestrian safety (awareness of where and how to both see and be seen). The resource can help students lead a safe lifestyle and empower them to make personal and socially responsible decisions.

The material is provided as an option for teachers to incorporate into their classrooms. Teachers may choose which units to present in their classes and which to omit. They may also decide that some activities would work better for their students, while other activities might not be of interest. In some cases, teachers may choose to incorporate only portions of a learning plan or activity.

First Peoples Principles of Learning

This Road Safety Learning Resource encompasses the First Peoples Principles of Learning. It aims to inspire youth to lead change for a safer community. It is delivered through experiential activities, involving youth in their learning by engaging them in discussions, deep critical thinking and storytelling. It aims to help them become aware of their responsibility in the school and community and empower them to make a difference.

Visit the Government of British Columbia for more information on incorporating the First Peoples Principles of Learning (FPPL) into classrooms and schools.

ICBC: Committed to saving lives

Whether it's learning how to safely cross the road or understanding the rules of a four-way stop, road safety is important for all British Columbians. As part of the commitment of the Insurance Corporation of British Columbia (ICBC) to promoting a safe driving culture in B.C., we've developed this Road Safety Learning Resource to help you give children and young adults the tools they need to stay safe — now and in the future.

ICBC Goals

In support of the resource connections, ICBC goals are to:

- Increase awareness among young people of the hazards involved in being on the road, whether as a pedestrian, cyclist, car passenger or user of another mode of transportation
- Change young people's attitudes toward risky behaviour involving vehicles, making them less willing to engage in or support unnecessary risk-taking
- Encourage young people to recognize unsafe situations and assertively communicate their concerns to their peers and elders
- Improve and enrich this content so that it remains timely and relevant in your community. ICBC welcomes your questions, suggestions, and feedback at learningresourcefeedback@icbc.com

Resource Connections

Applied Design Skills and Technology

Big ideas: Skills are developed through practice, effort and action. The choice of technology and tools depends on the task.

Learning Standards

Curricular Competencies	Content
Students are expected to be able to do the following: **Applied Design** *Understanding context* • Gather information about or from potential users *Defining* • Choose a design opportunity • Identify key features or user requirements • Identify the main objective for the design and any constraints *Ideating* • Generate potential ideas and add to others' ideas • Screen ideas against the objective and constraints • Choose an idea to pursue *Prototyping* • Outline a general plan, identifying tools and materials • Construct a first version of the product, making changes to tools, materials and procedures as needed • Record iterations of prototyping *Testing* • Test the product • Gather peer feedback and inspiration • Make changes and test again, repeating until satisfied with the product	*Students are expected to use the learning standards for Curricular Competencies from Applied Design, Skills, and Technologies 4–5 in combination with grade-level content from other areas of learning in cross-curricular activities to develop foundational mindsets and skills in design thinking and making.*

Learning Standards (continued)

Curricular Competencies	Content
Making • Construct the final product, incorporating planned changes *Sharing* • Decide on how and with whom to share their product • Demonstrate their product and describe their process • Determine whether their product meets the objective and contributes to the individual, family, community and/or environment • Reflect on their design thinking and processes, and their ability to work effectively both as individuals and collaboratively in a group, including their ability to share and maintain a co-operative work space • Identify new design issues **Applied Skills** • Use materials, tools and technologies in a safe manner, and with an awareness of the safety of others, in both physical and digital environments • Identify the skills required for a task and develop those skills as needed **Applied Technologies** • Use familiar tools and technologies to extend their capabilities when completing a task • Choose appropriate technologies to use for specific tasks • Demonstrate a willingness to learn new technologies as needed	

Career Education

Big ideas: Exploring our strengths and abilities can help us identify our goals.

Learning Standards

Curricular Competencies	Content
Students are expected to be able to do the following: • Identify and appreciate their personal attributes, skills, interests and accomplishments and their growth over time • Recognize the need for others who can support their learning and personal growth in the classroom • Use innovative thinking when solving problems • Set realistic short- and longer-term learning goals, define a path and monitor progress • Make connections between effective work habits and success • Demonstrate safe behaviours in a variety of environments • Question self and others about the role of technology in the changing workplace • Appreciate the influence of peer relationships, family and community on personal choices and goals	*Students are expected to know the following:* **Personal Development** • **Goal-setting strategies** • Problem-solving and decision-making strategies • **Emergent leadership skills** **Connections to Community** • **Cultural and social awareness** • Generational roles and responsibilities • Safety hazards and rules at school, at home and in the community

Arts Education

Big ideas: Creative expression is a means to explore and share one's identity within a community.

Learning Standards

Curricular Competencies	Content
Students will be able to use creative processes for: **Exploring and creating** • Choose artistic **elements**, processes, materials, movements, technologies, tools, techniques and environments using combinations and selections for specific purposes in art making • Create artistic works collaboratively and as an individual using ideas inspired by imagination, inquiry, experimentation and **purposeful play** • Explore identity, place, culture and belonging through arts experiences **Reasoning and reflecting** • Develop and refine ideas, processes and technical skills in a **variety of art forms** to improve the quality of artistic creations • Reflect on **creative processes** and make connections to other experiences • Connect knowledge and skills from other **areas of learning** in planning, creating, interpreting and analyzing works for art	*Students are expected to be able to do the following:* • Elements and principles that together create meaning in the arts, including but not limited to: – **Dance: body, space, dynamics, time, relationships, form** and movement principles – Drama: character, time, place, plot, tension, mood and focus – Music: beat/pulse, duration, rhythm, tempo, pitch, timbre, dynamics, form, texture – Visual arts: elements of design: line, shape, space, texture, colour, form; principles of design: pattern, repetition, balance, contrast, emphasis, rhythm, variety

Learning Standards (continued)

Curricular Competencies	Content
Communicating and documenting • Adapt learned skills, understandings and processes for use in new contexts and for different purposes and audiences • Interpret and communicate ideas using symbolism to express meaning through the arts • Express, feelings, ideas and experiences in creative ways • Experience, **document** and **present** creative works in a variety of way • Demonstrate increasingly sophisticated application and/or engagement of curricular content	• Processes, materials, **technologies**, tools and techniques to support • arts activities • A variety of **dramatic forms** • **Image development strategie**s • **Symbolism** and metaphor create and represent meaning • **Personal and collective responsibility** associated with creating, experiencing or **presenting** in a safe learning environment

English Language Arts

Big ideas: Exploring stories and other texts helps us understand ourselves and make connections to others and to the world. Questioning what we hear, read and view contributes to our ability to be educated and engaged citizens. Using language in creative and playful ways helps us understand how language works.

Learning Standards

Curricular Competencies	Content
Using oral, written, visual and digital texts, students are expected individually and collaboratively to be able to: **Comprehend and connect (reading, listening, viewing)** • Access and integrate information and ideas from a variety of sources and from prior knowledge to build understanding • Use a variety of comprehension strategies before, during and after reading, listening or viewing to deepen understanding of text • Consider different purposes, audiences and perspectives in exploring texts • Apply a variety of thinking skills to gain meaning from texts • Identify how differences in context, perspectives and voice influence meaning in texts • Recognize the role of language in personal, social and cultural identity • Use personal experience and knowledge to connect to text and deepen understanding of self, community and world • Respond to text in personal and creative ways • Recognize how literary elements, techniques and devices enhance meaning in texts • Show an increasing understanding of the role of organization in meaning	*Students are expected to know the following:* **Story/text** • Forms, functions and genres of text • Text features • Literary elements • Literary devices • Evidence **Strategies and processes** • Reading strategies • Oral language strategies • Metacognitive strategies • Writing processes **Language features, structures and conventions** • Features of oral language • Paragraph structure • Sentence structure and grammar • Conventions

Learning Standards (continued)

Curricular Competencies	Content
• Demonstrate awareness of the oral tradition in First Peoples' cultures and the purposes of First Peoples' texts • Identify how story in First Peoples' cultures connects people to land **Create and communicate (writing, speaking, representing)** • Exchange ideas and perspectives to build shared understanding • Use writing and design processes to plan, develop and create texts for a variety of purposes and audiences • Use language in creative and playful ways to develop style • Communicate in sentences and paragraphs, applying conventions of Canadian spelling, grammar and punctuation • Develop and apply expanding word knowledge • Use oral storytelling processes • Transform ideas and information to create original texts	

Mathematics

Big ideas: Numbers represent quantities that can be decomposed into smaller parts. Repeating elements in patterns can be identified. Objects have attributes that can be described, measured and compared.

Learning Standards

Curricular Competencies	Content
Students are expected to do the following: **Reasoning and analyzing** • Use reasoning to explore and make connections • Estimate reasonably • Develop mental math strategies and abilities to make sense of quantities • Use technology to explore mathematics • Model mathematics in contextualized experiences **Understanding and solving** • Develop, demonstrate and apply mathematical understanding through play, inquiry and problem-solving • Visualize to explore mathematical concepts • Develop and use multiple strategies to engage in problem-solving • Engage in problem-solving experiences that are connected to place, story, cultural practices and perspectives relevant to local First Peoples' communities, the local community and other cultures **Communicating and representing** • Communicate mathematical thinking in many ways • Use mathematical vocabulary and language to contribute to mathematical discussions • Explain and justify mathematical ideas and decisions • Represent mathematical ideas in concrete, pictorial and symbolic forms	*Students are expected to know the following:* • Number concepts to 10,000 • Addition and subtraction to 10,000 • Multiplication and division of two- or three-digit numbers by one-digit numbers • Addition and subtraction facts to 20 (developing computational fluency) • Multiplication and division facts to 100 (introductory computational strategies) • Increasing and decreasing patterns, using tables and charts • Perimeter of regular and irregular shapes • Line symmetry

Learning Standards (continued)

Curricular Competencies	Content
Connecting and reflecting • Reflect on mathematical thinking • Connect mathematical concepts to each other and to other areas and personal interests	• One-to-one correspondence and many-to-one correspondence, using bar graphs and pictographs • Probability experiments

Physical and Health Education

Big ideas: Personal choices and social and environmental factors influence our health and well-being. Daily participation in physical activity at moderate to vigorous intensity levels benefits all aspects of our well-being.

Learning Standards

Curricular Competencies	Content
Students are expected to be able to do the following: **Physical literacy** • Develop and apply a variety of fundamental movement skills in a variety of physical activities and environments • Apply a variety of movement concepts and strategies in different physical activities • Develop and demonstrate safety, fair play and leadership in physical activities **Healthy and active living** • Identify and describe opportunities for and potential challenges to participation in preferred types of physical activity at school, at home and in the community **Social and community health** • Identify and describe avoidance or assertiveness strategies to use in unsafe and/or uncomfortable situations • Describe and assess strategies for responding to discrimination, stereotyping and bullying • Describe and apply strategies for developing and maintaining positive relationships • Describe and apply strategies that promote a safe and caring environment	*Students are expected to know the following:* • Proper technique for fundamental movement skills, including, **non-locomotor**, **locomotor** and **manipulative** skills • **Movement concepts** and **strategies** • How to participate in different types of physical activities, including **individual and dual activities**, **rhythmic activities** and **games** • **Benefits** of physical activity and exercise • Practices that promote health and well-being, including those relating to **physical activity**, **sleep**, **healthy eating** and **illness prevention**

Learning Standards (continued)

Curricular Competencies	Content
Mental well-being • Describe and assess strategies for promoting mental well-being • Describe and assess strategies for managing problems related to mental well-being and substance use • Describe factors that positively influence mental well-being and self-identity	• **Strategies and skills to use in potentially hazardous, unsafe or abusive situations**, including identifying common **lures or tricks used by potential abusers** • **Strategies for responding to bullying, discrimination and violence**

unit 1
pedestrian safety

Determining prior knowledge

Time requirement

This learning plan will take one session to complete.

Inquiry question

What do I already know about hazards and potentially unsafe situations in relation to pedestrian safety? What do I know about being a safe pedestrian? What do I know about taking risks?

Learning objectives

Students will:

- Determine what they already know about pedestrian safety
- Identify when and why they or someone they know has not followed a pedestrian safety rule
- Conduct a self-assessment/self-reflection

Materials and resources

- *Pedestrian safety practices* activity sheet on page 19
- See how many crashes involving pedestrians are happening in B.C.

Discussion:

Begin a discussion around pedestrian safety. If possible, make a link to any stories or current or recent events in the community.

Ask students:

- Who thinks that they are a safe pedestrian?
- What does it mean to be a safe pedestrian?
- Have you ever done something to help someone else be a safe pedestrian?
- How do you know when someone (including yourself) is not being a safe pedestrian?

- What are other ways that you use your road safety skills (e.g., as a passenger in a car, on the school bus, on a bike, obeying signs)?
- Discuss the difference between "not knowing a road safety rule" versus "choosing not to follow a road safety rule" when it comes to pedestrian safety

Activity

- Distribute the *Pedestrian safety practices* activity sheet on page 19.

  Note: The activity sheet is a KWL organizer. The top half allows ample space for listing what the student already knows; the upper left quadrant is for documenting unsafe pedestrian practices and the upper right quadrant is for documenting safe pedestrian practices. The bottom left quadrant is for students to list what they want to learn and, on completion of the exercise, the bottom right quadrant is for students to list what they have learned in this activity.
- Explain to the students that you are looking for honest responses so that the entire class can benefit and that the responses will be kept anonymous; the students are asked to write their names on the activity sheet so that they can be collected, tallied up anonymously and then returned at the end of the unit
- Explain to the students the *full task before they begin*, because the positioning of the responses on the page affects the next stage
  - The top knowledge half of the page is divided into two columns: unsafe practices are listed on the left and safe practices are listed on the right
  - Have the students fill in the columns with as many skills/attributes/behaviours as they can recall
  - As they complete the sheet, they should position items that are true for inside the oval, and items that are not true for them outside the oval
  - When finished, students should trace over the dashed line of the oval; the practices listed inside the oval describes all the practices that are true for them — students can label this oval "me"

Conclusion:

Ask students to count the number of items inside each of the two columns and write the number on the line next to the title.

As a class, discuss:

Which column had the most entries? What do the students think that suggests about their pedestrian safety knowledge?

- Do they know more about pedestrian safety?
- Do they know the rules in a positive language, or in a "don't do" format?
- How many items are inside the circle labeled "me"?
- Collect the sheets and tally the number of practices within the safe and the unsafe side of the "me" circle; to save time, consider selecting five or six sheets at random and tallying only those sheets
- Record these numbers on the board (or overhead projector)
- Calculate — or have the students calculate — the percentage of safe practices from this sample or create a bar graph with the data

Discuss these results and emphasize the importance of following ALL pedestrian safety rules and safe practices 100% of the time.

Ask the students to turn to the lower left quadrant of the page and list the things they want to know about pedestrian safety practices.

Collect these handouts and explain to the students that they will be exploring a variety of topics later on in this unit and the rationale for choosing to follow road safety rules.

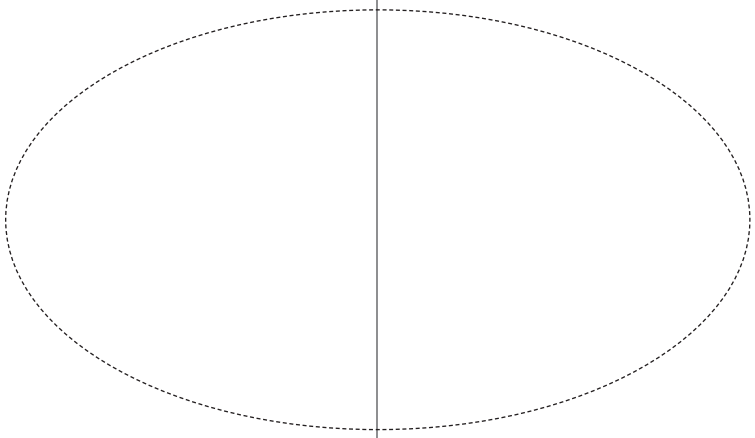
Self-assessment/self-reflection

Have students write a short reflective writing piece about an experience where they, or someone they know, were not a safe pedestrian.

- Summarize the experience
- Why were they not safe?
- How did the experience make them feel?
- What were the possible consequences?
- What would they do differently next time?

Pedestrian safety practices

Names _____ Date _____

What I know	
Unsafe pedestrian practices	Safe pedestrian practices
	
What I want to learn	What I have learned

Word wall

Time requirement

This learning plan will take one session to complete.

Inquiry question

How can I develop my pedestrian sense vocabulary and use it in reflective writing?

Learning objectives

Students will:

- Use the words on the word wall to compose a reflective writing piece
- Recognize words on the word wall
- Participate in games to develop pedestrian safety vocabulary
- See patterns and relationship in words, thus building phonics and spelling skills
- Play a game to develop an understanding of safe zones
- Conduct a self-assessment/self-reflection

Materials and resources

- Cards to write words for the word wall

Explore

To encourage vocabulary development and reinforce language skill, have students help you create a word wall with road sense words. The word wall can be as simple or as complex as you want. For the simplest word wall, use a sentence strip pocket chart where you can cut the words to size and slip them into the pockets. If there is no board space or wall space available, hang a clothesline across the room and clothespin the words to the line.

Experience

Brainstorm words to add to the wall. Example words: pedestrian, children, road, safety, middle, driver, eye contact, sidewalk.

- Read the word wall with the class
- Use the word bank vocabulary in a spelling quiz or charades game

Self-assessment/self-reflection

Have the students compose a reflective writing piece using words from the word wall about an experience where they as pedestrians did not feel safe.

Connect and engage

In the gymnasium or on the playground, play Sharks and Adventurers

Create a playing area with three zones: the main playing zone (Ocean), an end zone on one edge of the playing zone (the Beach), and a smaller, square-shaped zone within the playing zone (the Treasure Cave). Place a box somewhere on the Beach (the Treasure Box) and place beanbags inside the Treasure Cave (Treasure pieces).

Explore the Ocean. Have all the students stand inside the Beach. These students are Adventurers. Have the Adventurers explore the Ocean by 'swimming' about the gymnasium. When the teacher shouts "sharks", all the Adventures must run back to the beach (safe zone).

Select two students who will start off as Sharks. Give each Shark a shortened pool noodle to tag adventurers with.

On the teacher's signal, play begins. Adventurers attempt to make their way to the Treasure Cave, take one piece of Treasure, bring it back to the Beach and place it in the Treasure Box. They keep doing so until there are no more Treasure pieces within the Treasure Cave.

Meanwhile, Sharks attempt to tag any Adventurer who steps onto Treasure Island. Sharks cannot tag players who are on the Beach or in the Treasure Cave. If an Adventurer is tagged, they must remain frozen on place. If they were holding onto a piece of Treasure when they were tagged, they must give it to the Shark who tagged them (who will return it to the Treasure Cave).

Frozen players become unfrozen if a fellow Adventurer takes them by the hand and brings them to the Beach. When an Adventurer is being brought to the Beach, both the rescuer and the rescuee cannot be tagged by Sharks.

Play continues until there is no Treasure left in the Treasure Cave or until all of the Adventurers are frozen.

Discuss how the game with safe zones relates to pedestrians on the road. Explain that the beach and cave are safe zones like playgrounds and sidewalks and the ocean is like the road with all kinds of dangers.

Learning about light

Time requirement

This learning plan will take one session to complete.

Inquiry question

Which colours and materials are most easily seen in the dark? Why is this important?

Learning objectives

Students will:

- Demonstrate an understanding of the properties of light displayed in the activities
- Experiment with light
- Brainstorm a list of light sources and reflective surfaces

Materials and resources

- *Learning about light* (teacher instructions) on pages 26 and 27
- *Learning about light* activity sheets on page 28
- Eight small flashlights
- A candle
- A mirror
- A prism (a CD will also suffice)
- Red, green and blue translucent cellophane
- Elastics
- Two boxes and blankets, or other materials that can provide a dark environment for student experiments
- A banana
- Coloured construction paper
- Books, props, videos about the solar system (optional)

Explore

- Begin a conversation about light and the solar system
- Explain to students that most of our available light on earth comes from the sun:
  - When light from the sun shines, or is reflected onto objects around us, we can see them even when it's cloudy, foggy or raining
  - At night, our part of the earth faces away from the sun and so the lack of sunlight makes it more difficult to see the objects around us
  - At dawn and dusk (during the transition between sunrise and daylight, and between sunset and night time) all of our natural light is reflected off the atmosphere and pedestrians should be extra careful to remain visible
- Explain to students that although most of our light comes from the sun, there are other objects that emit their own light (e.g., candles, flashlight, traffic light, etc.), and other objects that reflect light from an external source (e.g., the moon, stop sign, cycling leg band, reflective tape on rain coat, etc.)
- Ask students to brainstorm a list of light sources and reflective surfaces
- Ask if any students have any reflective materials in the classroom (on clothing, jackets or backpack)
- Ask students to speculate: Would there be more examples of reflective materials on the students' clothing in January or June? Why?
- Note: Be aware of students who may become concerned about their gear (e.g., their brand new backpack does not have reflective strips)

Experience

Set up the demonstration stations around the class, as per the instructions in Six light activities on pages 26 and 27.

- Optional setup formats:
  - Demonstrate experimental stations at the front of the class
  - Set up all of the stations prior to class so that a full circuit can be completed by each of the students
- Distribute the *Learning about light* activity sheet on page 28 and organize students into six groups
- Turn the classroom lights off and block the windows so that there is just enough light to see
- Have each group start off at a different station and set a rotation for four or five minutes per station until every group has been to each station
- At each station, students will follow the instructions and record their observations

Reflect and connect

- When everyone has finished, gather the groups (or recombine the students into new groups) to discuss the following questions for a short while before reporting back to the whole class:
- In what direction does light travel?
- Does light travel in a straight line? *(Light travels in all directions in a straight line.)*
- What happens when light hits an object? *(When light encounters an object, its path is altered. If the object is transparent (e.g., a prism), the light will bend as it passes through it because the light is slowed down as it passes through the object (it takes light longer to travel through liquid or solid objects than it does to travel through air).*
- Why do we see colours? *Light is made up of different colours: red, orange, yellow, green, blue and violet light waves are all present in what we call white light. Some objects reflect all the light that strikes them (e.g., a mirror). Objects that absorb all the light that strikes them and reflect none of it appear black. We can see colour when light is reflected off a surface — when light hits a banana, usually all the colours are absorbed except yellow, which is reflected (that's why a banana looks yellow to us, as we are seeing the yellow light that it reflects). When there is no yellow light shining on a banana, its surface looks black since there is no yellow light to be reflected.*

Six light activities (teacher instructions)

Set up six stations around the class with the materials listed below. Make sure the instructions are written clearly enough so that students can read them in dim light.

Station one

Students observe that unblocked light can be seen from many different directions at once.

Objects

- a lit candle in the middle of a table or desk.

Student instructions

1. Everyone stand around the table in a circle.
2. Everyone ask another person the following question: Can you see the light?
3. Ask yourself: Does light travel in one direction or many directions?
4. Record your observations on the handout.

Station two

Students observe that light travels in a straight line, and can be bent (reflected).

Objects

- a small flashlight
- a mirror
- a wall.

Student instructions

1. One of you pick up the mirror and hold it straight up and down.
2. Watch as another shines the flashlight straight at the mirror.
3. Ask yourself: Does light travel in a straight line?
4. Now change the angle of the mirror until the light from the flashlight is reflected on the wall.
5. Ask yourself: How does the path of the light change?
6. Record your observations on the handout.

Station three

Students observe that light bent through a prism results in the following colours: red, orange, yellow, green, blue, and violet.

Objects

- a small flashlight
- a prism (if you don't have one, a CD will suffice) on a table or desk.

Student instructions

1. Shine the light into the prism or CD.
2. Change the angle of light until colours appear on the desk on the other side of the prism/CD.
3. Ask yourself: How did the path of the light change?
4. Ask yourself: What colours can I see on the desk?
5. Ask yourself: Why are there colours on the desk? Where did they come from?
6. Record your thoughts and observations on your handout.

Station four

Students observe that blue, red, and green light combine to make white light.

Objects

- three small flashlights with red, green, and blue cellophane fastened with elastics around their bulb ends
- a white screen or the wall.

Student instructions

1. Shine each of the coloured lights against the wall at different places.
2. Now shine the three coloured lights in the same place, so they overlap.
3. Ask yourself: What colour of light is produced?
4. Ask yourself: Why was that colour of light produced?
5. Record your observations on the handout.

Station five

Students observe that a banana observed in a blue light appears black.

Objects

- two flashlights, one with blue cellophane fastened with an elastic around its bulb end
- a box with both ends open, covered with a blanket to block out light
- a banana in the box.

Student instructions

1. Take turns looking in the box with the regular flashlight. Do you see the banana?
2. Ask yourself: Why is the banana yellow?
3. Now look in the box with the blue-coloured flashlight. Do you see the banana?
4. Ask yourself: What has happened to the banana? Why?
5. Record your observations on the handout.

Station six

Students observe that white is the easiest colour to see in the dark, but isn't nearly as bright as a bicycle reflector.

Objects

- a small pen flashlight
- a box with both ends open, covered with a blanket to block out light
- various pieces of different-coloured construction paper
- white paper
- a bicycle reflector.

Student instructions

1. Two of you stand on either end of the covered box.
2. One of you look into the box with a flashlight, making sure the blanket blocks out the light.
3. The student on the far side of the box should show the other the pieces of coloured construction paper, the white paper, and the bicycle reflector.
4. Ask yourself: Which colours are most easily seen in the dark?
5. Ask yourself: How much brighter is the reflector than the brightest colour of paper?
6. Record your thoughts and observations on the handout.

Activity sheet — Learning about light

Record your observations for each of the activities	
Section 1	Section 2
Section 3	Section 4
Section 5	Section 6

Fashion sense

Time requirement

This learning plan will take one session to complete.

Inquiry question

What are the key factors for pedestrian safety regarding visibility and being seen in low light (at dawn/dusk and in rainy, snowy and foggy weather)?

Learning objectives

Students will:

- Explain which clothing articles are the most visible in dim/low light, and why

Materials/resources

- White paper
- A bicycle reflector
- Reflective safety vest
- Cycling jacket (i.e., lightweight jacket with noticeable reflective markings)
- Reflective materials: tape, leg bands, toggles

Explore

Write the following on the board:

- White jacket
- Blue jacket
- Sneakers with reflective strips
- Vest or jacket with reflective strips
- Backpack with reflective strips
- Lamp

Ask students to suggest which of these items would increase visibility for pedestrians. Can they offer a scientific explanation for their response?

Note:

- Reflectors and reflective material only reflect light that is shone directly on them
- Flashlights and bicycle lights emit their own light
- Fog absorbs light, making reflectors useless in fog unless the light source is very close to them
- Snow and rain affect how far light can penetrate into the darkness
- Rear-facing reflective strips (e.g., on a backpack) are not positioned to reflect light from oncoming traffic
- Pedestrians walking on the left side of a road without sidewalks should wear reflective or bright material on their front in order to be seen by oncoming traffic in dark or rainy weather (e.g., reflective material on a backpack cannot reflect light from an oncoming vehicle's headlights)
- This is also true for pedestrians waiting on the side of a road for a school bus (and facing the direction of its approach)

Experience

Create a "be seen" fashion review with your students.

Note: Whatever clothing and jackets the students happen to have with them can provide a useful demonstration; however, it will be useful to add a reflective safety vest and a cycling jacket.

- Hold the fashion review in the gym, auditorium, library or other large darkened room
- Gather everyone in one corner of the room and co-ordinate a first group of four or five models to take their places at the far end of the room
- Turn out the lights and briefly wave a flashlight or bike light towards the models
- Ask the observers who they can see most distinctly, and why
- Repeat for another group of models until all the students have had a chance to model
- Gather all of the people who were selected as most visible from each group, and have them move to the far end of the room together
- Again, ask the observers to identify who they can see most distinctly, and why

Reflect and connect

- Ask the students to summarize and record what they observed on the handout
- As a class, discuss how easy or how difficult it is to dress to be seen
- Give students the opportunity to help each other decide where they might want or need to add reflective material or tape to their jacket or the front straps of their backpack

See, be seen and be safe

Time requirement

This learning plan will take one session to complete.

Inquiry question

How can I identify road safety risks and hazards (see), and position myself so that I am visible to other road users (be seen)?

Learning objectives

Students will:

- Demonstrate an understanding of the safe practices a pedestrian should follow to see, and be seen

Materials and resources

- Videos:
  - *Sidewalk Safety* (2:40 min.)
  - *Crossing the Street* (2:06 min.)
  - *School Bus and Rural Safety* (3:46 min.)
- *Pedestrian safety skills* activity sheet on pages 42 and 43
- *See and be seen* activity chart on page 41
- *How I use my road safety skills while waiting to cross the street* activity sheet on page 39
- *How I use my road safety skills while crossing the street* activity sheet on page 40
- Wax paper

Suggested procedure

- Watch the following videos:
  - *Sidewalk Safety* (2:40 min.)
  - *Crossing the Street* (2:06 min.)
  - *School Bus and Rural Safety* (3:46 min.)

Synopsis: Tiara and her friend, Dante, talk about traffic safety rules using various scenarios — walking where there are no sidewalks, crossing the street at pedestrian-controlled crosswalks, and safely navigating train tracks. They focus on thinking on your feet, looking, listening and planning your route to avoid busy streets and knowing where the crosswalks or safe places to cross are.

Key messages

- Plan your route
- Think for yourself and make safe choices
- Be aware of high-traffic intersections, and traffic hazards
- Stop, think, look, listen and look again
- Don't cross until you've made eye contact with drivers and the cars have stopped
- Don't assume that drivers or cyclists are alert, or are paying attention to traffic signals or signs
- Wear clothes that are bright or have reflective materials and are easy to see, especially at night or on rainy days
- Cellphones and headphones can distract any age group from hearing or attending to what's happening around them
- Children especially can be at risk if they're using cellphones or headphones when walking or biking
- Always remove your headphones and stop talking or texting on your cellphones before you cross a street
- Ignore the cellphone if it rings while crossing the street and wait until you're on the sidewalk away from traffic, or check messages when you reach your destination

Video 1: *Sidewalk Safety* (2:40 min.)

Tiara and her friend, Dante show how to walk safely when on a sidewalk or on the side of the road where there's no sidewalk. They also show how to cross at a pedestrian-controlled crosswalk and railway tracks. They focus on planning your route, being safe when walking with friends (no shoving or pushing) and looking out for possible dangers.

Explore

How to walk safely on the sidewalk and why:

- Cross all major roads at a crosswalk or traffic light
- Wear bright clothes and reflective tape on jackets or backpacks so that you're visible, especially at night or on dull and rainy days
- When walking with friends, don't push and shove or walk too close to the curb — spread out so you can all walk safely
- Remove headphones when you approach an intersection so you can hear traffic
- Be courteous to other pedestrians, especially those with walkers, canes, wheelchairs, strollers or younger children
- Be aware of other users, especially those on skateboards, scooters or with dogs
- Stay safely away from trucks, because drivers have limited visibility — they often make wide turns at intersections because they need extra room to turn

What do you do if you're walking where there's no sidewalk?

- Walk on the left-hand side facing traffic so you can see oncoming cars and trucks and they can see you
- Walk a safe distance from the road well away from traffic
- If you're walking with friends, walk single file — don't fool around or shove each other
- Be aware of ditches and other hazards that might be dangerous.

How do you safely cross railway tracks?

- Stop, look, and listen — and look again
- Never cross when you can hear or see a train, or if the crossing lights are flashing
- Never duck under the crossing barrier if it's being lowered, or if it's already down
- Never race a train
- Be careful when you step over the rails or ride or walk a bike across tracks
- Always check twice when you cross, especially where there are double tracks
- Don't play on railway tracks or cross over a river or valley by walking along a train bridge

Did you know that, under the *Motor Vehicle Act*:

- A pedestrian must not leave a curb or other place of safety and walk or run into the path of a vehicle that is so close it is impracticable for the driver to yield the right-of-way
- When a pedestrian is crossing a highway at a point not in a crosswalk, the pedestrian must yield the right-of-way to a vehicle
- If there is a sidewalk that is reasonably passable on either or both sides of a highway, a pedestrian must not walk on a roadway
- If there is no sidewalk, a pedestrian walking along or on a highway must walk only on the extreme left side of the roadway or the shoulder of the highway, facing traffic approaching from the opposite direction
- A person must not be on a roadway to solicit a ride, employment or business from an occupant of a vehicle; except for a person who solicits a ride in an emergency situation, a person who contravenes this section commits an offence

Video 2: *Crossing the Street* (2:06 min.)

Tiara, Dante and others show safe ways to cross the street in different situations: pedestrian-controlled crosswalks, crosswalks with student crossing guards, more complicated multi-lane streets and traffic circles. They focus on thinking on your feet, planning your route to avoid busy streets and knowing where the crosswalks or safe places to cross are located.

What are the key points to remember when you're crossing a laneway, street corner or crosswalk? Always:

- Stop, look and listen, and look again
- Cross a road where there's a traffic light or a crosswalk
- Make eye contact with drivers and cyclists before crossing; don't assume that because you can see them, they can see you
- Watch all traffic signals, and wait until all cars, trucks and bikes have stopped
- Continue to look left, right and then left again when crossing, double-checking that all approaching cars and bikes have seen you and have stopped
- Watch out for cars turning a corner, or entering and exiting a laneway
- Walk in a straight line, and never run across a street

What do you do at an intersection that has a crossing guard?

- Stop and take a step back from the curb, away from traffic
- Look left, right and left again so you see what the guard sees
- Wait until the crossing guard tells you it's safe to cross
- Watch all traffic signals, and make sure cars have stopped
- Remove headphones and put cellphone away

How do you cross the street that has a pedestrian-controlled crossing?

- At a corner with a traffic light, remain a step back from the curb
- Push the button to change the light and wait, but don't assume that a walk signal or green light means that the cars have stopped — you still need to check left, right and then left again
- Before crossing look left, right, and left over your shoulder to check traffic beside and behind you to ensure cars coming around the corner have stopped
- Make eye contact with drivers before crossing to ensure they see you and stop
- Don't walk until all the traffic going in both directions has stopped — make eye contact with drivers in each lane so you know they see you
- Look over your left shoulder to check that cars coming around the corner have stopped

How do you cross the street that has more than one traffic lane going in the same direction?

- Make eye contact and check that drivers in each lane see you and have stopped
- While crossing, stop in front of the vehicle in the first lane and check again that approaching vehicles in the second lane see you and have stopped before you walk across that lane
- Don't assume drivers are paying attention or can see you — just because one driver has stopped, that doesn't mean other drivers will stop too

How do you cross an intersection with a traffic circle?

- Never take shortcuts across a traffic circle — in other words, don't walk diagonally across the intersection
- If you need to get to the furthest corner at a traffic circle, you'll need to walk across both streets from corner to corner to corner — use the same rules for crossing both times

Video 3: *School bus and rural pedestrian safety* (3:45 min.)

A series of short scenes where children model how to walk along rural roads, cross train tracks and follow safety rules when waiting for, and leaving a school bus. The focus is on making eye contact with bus driver and being aware of traffic.

Discussion

When you walk on rural roads, or roads without sidewalks what do you need to pay attention to?

- Walk on the left side of the road facing oncoming traffic.
- Walk well away from the road but not too close to ditches or other hazards.
- If you're walking with friends, always walk in a single file. Don't fool around or shove.
- Stay far away from trucks and stand well back when you're at a corner or crosswalk. Trucks require extra space for turning.

What are the safety practices around a school bus stop?

- Arrive early at the bus stop and never run after a bus if you're late
- Wear visible, bright clothing, and add reflective tape to your backpack or jacket for dark or rainy days
- Use your traffic-safety skills when crossing a street — try to always cross at an intersection or crosswalk
- Keep an eye out for younger children to ensure they're safe; model safe choices when walking with others, particularly when they're younger than you
- Stand two steps back from the road while waiting for the bus and move further back when the school bus arrives — wait until it stops before approaching

When leaving a school bus, walk 10 steps ahead before you cross the road so that the driver sees you. Make eye contact with the driver — a bus driver cannot see you when you're close beside, behind or right in front of the bus.

- Check for traffic in both directions before crossing the road — don't think that all cars or bicycles will stop
- If you drop something, wait until you make eye contact with the bus driver and it's OK to pick it up
- Only school buses have a stop sign and red flashing lights to help stop traffic. If you're on any other bus, walk to the nearest crosswalk or intersection. After exiting, do not cross directly in front of the bus!

Questions

- Why is it dangerous to cross the street in the middle of a block? Or chase a ball that's rolled onto the street?
- Why is it important to listen to the school crossing guard?
- Why do you need to make eye contact with drivers and cyclists and ensure they have stopped before you cross the street?
- When walking in traffic or crossing the street, what's wrong with wearing headphones or talking or texting on your cellphone?
- If you were teaching a younger child how to cross the street, what important points would you be sure to share with them?
- Who else uses the sidewalk?
- Why watch out for ditches when you walk on a road without sidewalks? What other hazards might you need to watch out for?
- What's the difference between a transit bus and a school bus when it stops?
- A friend is taking the school bus for the first time. What safety rules would you share with him/her?
- If you were taking younger children on the school bus, what key information about bus safety would you tell them about: Waiting for the bus? When the bus arrives? While riding the bus? After getting off the bus?
- Why is making eye contact with your bus driver and any other drivers important?
- How can the clothes that you wear be important?
- If you hear a train coming, but it's not in sight, do you cross?
- Why is it dangerous to play on or near train tracks?
- What tells you that a train is coming?
- How do you cross an intersection with a traffic circle? (Answer: Never take shortcuts across a traffic circle — in other words, don't walk diagonally across the intersection. If you need to get to the furthest corner at a traffic circle, you'll need to walk across both streets from corner to corner to corner — use the same rules for crossing both times.)

Reflect and connect: See and be seen and be safe!

Introduce the dual components of see and be seen:

- See: When it comes to pedestrian safety, who and what does a pedestrian want to see, who and what are they looking for?
- Be seen: When it comes to pedestrian safety, by whom does a pedestrian want to be seen?

Explore

- Arrange the students in small groups at their desks or tables
- Post *Pedestrian safety skills* activity sheet on pages 42 and 43 on the overhead, or distribute one copy to each group
- Distribute the *See and be seen* activity sheet on page 41 — one to each student
- Ask the groups to cut out each of the safety skills and arrange them into two columns based on whether the practice:
  - Increases a pedestrian's ability to see the traffic conditions and concerns around them, or
  - Positions a pedestrian to be better seen by other road users
- As a class, discuss the results. Are there any pedestrian safety practices that the students are having trouble classifying?

Be visible

- Tell students that many times drivers do not see pedestrians. In fact pedestrians are especially difficult to see at night, dawn and dusk, and in bad weather. It's important to be VISIBLE!

Experience

- Distribute strips of wax paper and have the children hold them up over their eyes. Have the students pretend that the wax paper is fog or rain, and explain that neither drivers nor pedestrians can see well in bad weather. Ask students to note: Which things are most easily seen through the wax paper? Examples: Light from the window, bright/light colours, etc. Have several students wearing dark and light clothing stand on opposite sides of the classroom. Ask students to look at the students on the opposite sides of the classroom through the wax paper and identify which ones they see more easily.

Reflect and connect

- Discuss the roles of a pedestrian to see and be seen
- How does this reduce the risk of injury while out walking?
- How do these practices affect drivers?
- Do the students think that drivers would appreciate having pedestrians be seen?
- While driving, have the students ever heard a parent complain about a pedestrian's action? What had the pedestrian done?

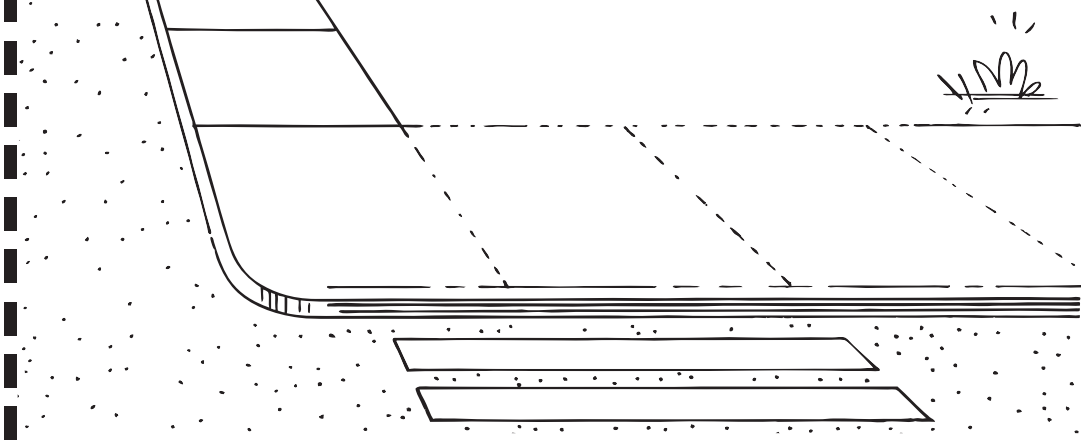
Activity sheet

How I use my road safety skills while waiting to cross the street.

NAME _____

DATE _____

word key:
middle
me



We cross at the corner or where there are crosswalks. I stand a giant step back from the curb when waiting to cross the street. We never cross mid-block because....

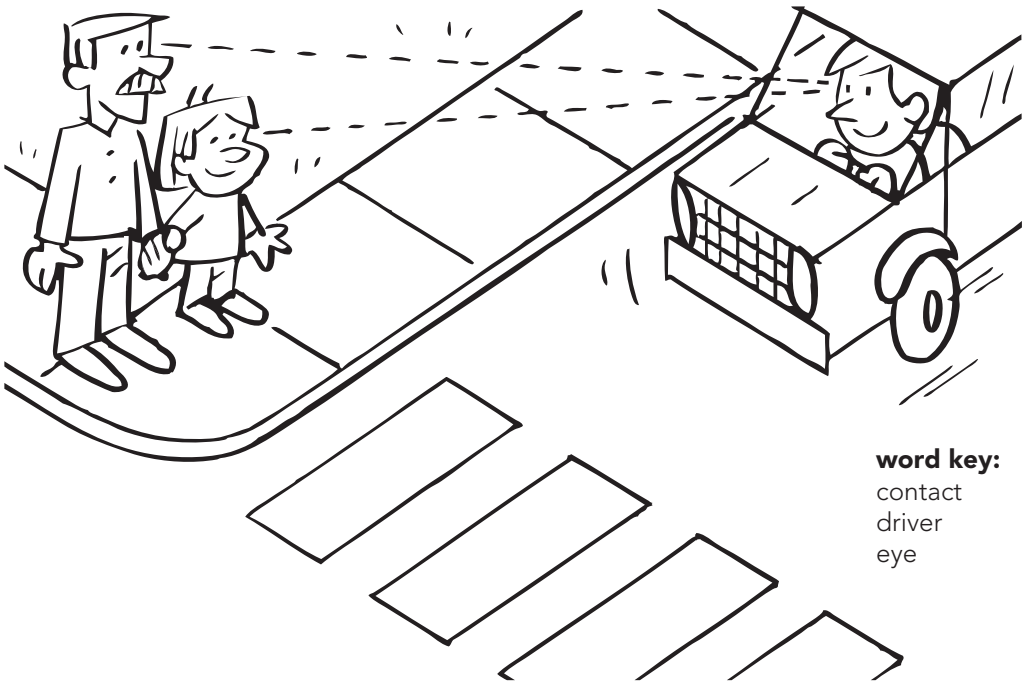
Drivers do not expect _____ to cross in the _____ of a block.

Activity sheet

How I use my road safety skills while crossing the street.

NAME _____

DATE _____



word key:
contact
driver
eye

STOP, LOOK, LISTEN, AND LOOK AGAIN! I approach each street carefully. I look left, look right, and look left again and make eye contact with drivers. We continue watching out for cars turning the corner because....

I can be sure that the _____ sees me if I make _____ _____ before I cross.

Activity sheet — See and be seen chart

see	be seen
before crossing a street	
A	B
while crossing a street	
C	D
when at a pedestrian-controlled crossing	
E	(same as D)
when crossing a multi-lane street	
F	G
when crossing an intersection with a traffic circle	
H	(same as D)
when walking along roads without sidewalks	
J	K
at railway tracks and crossings	
L	(not relevant — a moving train will not be able to stop for a pedestrian)

Activity sheet — Pedestrian safety skills

before crossing a street	
❑ seek to cross at a traffic light or a crosswalk	❑ obey all traffic signals
❑ never cross mid-block even if a friend calls to you to cross over	❑ always STOP, LOOK, LISTEN and LOOK AGAIN
❑ wait a step back from the curb	❑ look left, look right, look left again to double-check
❑ make eye contact with drivers and cyclists — and wait until they have stopped — before crossing	❑ wear bright / reflective clothes if walking in the evening or in the rain

while crossing	
❑ watch out for cars turning a corner, or entering and exiting a laneway	❑ while crossing, continue to look left, right and then left again to double-check for turning traffic
❑ make eye-contact with drivers before crossing to ensure they see you and they have stopped	❑ walk — don't run — in a straight line
❑ remove headphones or put your phone conversation on hold	

when at a pedestrian-controlled crossing	
❑ don't assume that a walk signal or green light means that the cars will automatically stop	❑ don't walk until all traffic has stopped

Activity sheet — Pedestrian safety skills, continued

when crossing a multi-lane street	
❑ make eye-contact with drivers in EACH lane	❑ while crossing, check that drivers in EACH lane see you and have stopped before you step into that next lane
❑ don't assume all drivers are paying attention — just because one driver has stopped it is not a guarantee that all other drivers will stop too	

when crossing an intersection with a traffic circle	
❑ never take short cuts across a traffic circle	❑ do not walk diagonally across the centre

when walking along roads without sidewalks	
❑ walk on the left side of the road to see (and be seen by) traffic	❑ walk in a single file — don't fool around or shove
❑ stay safely away from trucks because truck drivers have limited visibility and trucks require extra space for turning	❑ walk a safe distance from the road away from the traffic
❑ be aware of ditches and other hazards	

when crossing railway tracks and crossings
❑ be cautious

Signs and signals

Time requirement

This learning plan will take one session to complete.

Inquiry question

How can I use road signs and signals to be a safe pedestrian?

Learning objectives

Students will:

- Be able to explain the meaning of the pedestrian signs, signals and road markings of the intersections visited
- Identify which of two intersections feels safer, and give specific examples to explain their claim

Materials and resources

- *Pedestrian signs, signals and road markings* activity sheet on page 49
- *Pedestrian crossing checklist* activity sheet on page 50

Explore

Toddlers (ages 1–2) are most likely to be injured in driveways, where drivers moving backward are unable to see them. Adolescents are at risk due to walking at night with poor visibility, walking while intoxicated, walking while distracted by phones, and other reasons. Children between ages 4 and 12 are injured most by entering into the middle of the street and being struck by moving vehicles, or at intersections — they enter the street quickly, without thought, to chase a person, toy or pet, or to meet someone or something on the other side of the street.

Traffic lights have been installed at intersections in most cities around the world. The earliest known traffic signal dates to London in 1868 — before vehicles were invented. The signal was a revolving lantern that flashed red lights (for stop) and green lights (for caution), which was illuminated by gas and operated by a police officer. Over the years,

many different adaptations of traffic lights have been engineered. For example, at some intersections, red light cameras have been incorporated into traffic lights. These take photos of the licence plate of any car that goes through the light. The photos are used by police to keep track of those not obeying traffic rules, and to send them a violation ticket.

Traffic engineers consider traffic safety by investigating locations with high crash rates and develop countermeasures, such as traffic lights, to reduce crashes.

Experience

Select two intersections near the school with different signage and pavement markings for crossing the street (e.g., one might have a crosswalk and the other might only have a stop sign).

Note: If you do not have access to two different intersections near your school, consider either:

- Photographing two of the more common intersections in/near your community, or
- Using sidewalk chalk in the schoolyard to draw your intersections

Optional: Co-ordinate this activity with a Grade 7 class to discuss the projects with the Grade 4 students.

Reflect and connect

To provide context for the lesson, tell the students that you are going to add another element to their road safety skills learning about signs, signals and road markings:

- In what ways are they useful?
- Is there a universality to our road signs and signals that helps non-English speakers and young children cross the street safely?

Show the students the images of pedestrian signs, signals and road markings:

- Ask students which of the images are familiar to them
- Explain the two locations that the class will be visiting and ask if the students are already familiar with this intersection; if so, can they recall which signs and signals we will see at these locations?
- Before leaving to visit the two crossings, ensure that the students are aware of safety parameters for the trip:
  - Can they picture what it might be like to have 25 students all together at a corner, and/or walking along the sidewalk?
  - What rules or guidelines should they be aware of?

  - How can they ensure the safety of themselves and their classmates?
  - Which of the road safety skills discussed in the previous lessons might they need to demonstrate on the walk?

Note: In viewing both of the crossings, you may find that it's not even necessary to cross the street. Consider taking a camera or video to document the sites so that students will not need to return to the site(s) in order to complete their assignments.

Experience

Distribute the *Pedestrian crossings* checklist on page 50. Review the images and add them to the word wall. Have students bring a copy of the checklist along so they can record their observations and any questions they might have.

Walk to each of the crossings and ask:

- What signs, signals and road markings are present here?
- Who is the audience for each of the items (e.g., pedestrians or drivers)?
- Have they ever witnessed any collisions or close calls here? If so, do they know any of the conditions that caused it?
- Do the students have any suggestions as to how the crossing might be made safer or more convenient for pedestrians?
- Be sure to include any other related signs located nearby but not directly at the site (e.g., a pedestrian crossing ahead sign that might be half a block away)
- Once students are back in class, have them break into groups of three to compare their notes about each of the crossings

Analyze and critique

Have each group create a sheet on how to cross a street in their area. Each of the group members could be responsible for one of the crossing aids (signs, signals and road markings).

- Encourage students to write step-by-step instructions for crossing at an intersection:
  - If you need to cross ____ Street, look for (crosswalk/corner)
  - Stand at ____
  - Wait a step back from the curb
  - You will notice (sign/signal/marking)
  - etc.
- When students have developed a draft version of their project, consider inviting a Grade 7 class to participate in the final stages

Present

Students can present their project to the class or deepen their understanding by pairing up with a Grade 7 student-buddy.

Optional: Have each group present a draft version of their project to a group of Grade 7 students. Allow some time for the two groups of students to discuss the projects, ask questions and discuss next steps.

Decide how the two classes will proceed:

- The Grade 7 students could return to their class and let the Grade 4 students complete their projects
- The two groups could work together to complete their project and/or develop a means to present the material to the rest of the two classes
- The Grade 7 students could bring the project back to their class and develop their own version — and then share their work with the Grade 4 students

Reflect and connect

- Which of the two intersections feels safer to cross?
- Why?
- What do the signs, signals and road markings have to do with a pedestrian's feeling of safety?
- Why are pedestrians discouraged from crossing a street mid-block?
- Why are drivers more likely to expect/anticipate a pedestrian crossing at an intersection rather than mid-block?
- Why do we not have a crosswalk at every corner?

Activity — Problem-solving

Group the students into teams of about four. Explain that they are part of a team of traffic engineers given the challenge by the city to develop a new traffic light to reduce the number of crashes and pedestrian injuries at a busy intersection that includes two roads with heavy traffic, a bicycle lane and crosswalks.

Research

Students can use the library to conduct research, and if they have access to the internet, they can research ideas online.

Design

Have teams brainstorm and develop a plan for a new improved traffic light. Have them draw a detailed diagram of the traffic light and label the safety features. They must also explain how it might reduce pedestrian injuries.

Presentation

Students can use presentation software such as PowerPoint, or create posters, or paper handouts to present the new traffic light to the city (the class). It must be persuasive.

Pedestrian signs, signals and road markings

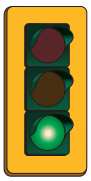
Pedestrian crosswalk ahead

Pedestrian crosswalk — yield to people crossing

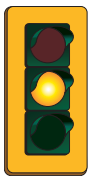
School crosswalk — yield to pedestrians — if there is a crossing guard, follow directions

School zone — reduce speed when children are present

Signal lights ahead



Steady green — continue if the intersection is clear

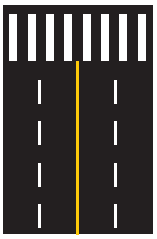


Steady yellow — slow down and stop before the intersection unless you can't safely stop in time

Solid line — do not change lanes

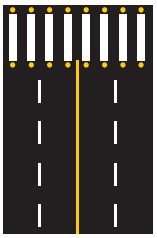
Broken line — lane changing is allowed when safe

Stop line — stop before this line



Pedestrian crosswalk — stop for pedestrians in the crosswalk

Pedestrian crosswalk — stop for pedestrians in the crosswalk



Pedestrian-activated crosswalk with illuminating lights in pavement — stop for pedestrians in the crosswalk

Observations/Questions

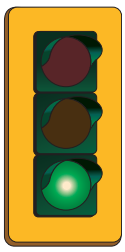
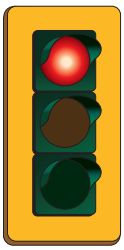
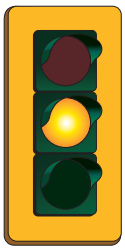
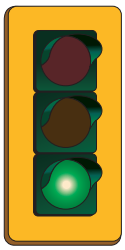
Activity sheet — Pedestrian crossings checklist

	Intersection #1	Intersection #2
intersection of which streets		
stop sign		
traffic light		
crosswalk		
pavement markings		
flashing light		
crosswalk sign		
crosswalk ahead sign		
school sign		
parked cars near, or very close to the intersection		
clear view of approaching traffic		
curb extension (to shorten the crossing distance)		
recollection of any pedestrian injuries here		
feeling of safety: not feeling safe — 1 feeling very safe — 5		
general observations		

Reflect and connect

- Show the students the images of *pedestrian signs and signals* (see page 52 for examples)
- Ask students which of the sings and signals are familiar to them, and which are new to them
- Review what each sign/signal means
- Will visitors from foreign countries know what these signs mean?
- What other signs and signals could be added to the list?

Activity sheet

 Railroad Crossing	 Yield	 Stop	 No Bikes	 Do Not Enter
 Traffic Light	 Walk	 Don't Walk	 Wrong Way	 Speed Sign
 Stop	 Wait	 Go	 Hospital	 Bike Route

Bingo

Use all the signs and signals to play bingo. Give students a worksheet with all the road signs. Review the traffic signs and their meanings.

- Have students randomly cut 14 signs and signals and place them in the bingo squares
- The teacher will need a complete set of the 14 cut and placed in a container
- To start the game, pull a sign from the container, and call and show the sign
- Have students use a bingo chip to cover the sign if they have it
- Have students call out bingo when they have either a complete horizontal, vertical or diagonal row

Activity sheet

	FREE SPACE	

Safe route to school

Time requirement

This learning plan will take three sessions to complete.

Inquiry question

How can I use planning to reduce risk?

Learning objectives

Students will:

- Choose between two options for the better/safer walking route to school
- Plan the journey to school as a means of reducing risk
- Identify cardinal points (north, south, east and west) and use them on a map
- Engage in problem-solving to help find the best route from home to school
- Understand and document safe pedestrian practices that are new to the students
- Create a checklist/chart to assess which route has the lower risk
- Student's decision for their best route to school is backed up with justified assessments of reduced risk
- Student map portrays a reasonably accurate depiction of the streets and crossings between the two destinations (e.g., their home and the school)

Materials/resources

- *Pedestrian safety skills* activity sheet on pages 61 and 62
- Map of neighbourhood between home and school (city map, school district map, Google maps, etc.)
- Colour markers or highlighters
- Pedometer app or clip-on pedometer for each student (optional)
- *Safe route to school checklist* activity sheet on pages 58 and 59

Reflect and connect

Everyone benefits from walking. Discuss what the benefits include. Examples might be improved fitness, cleaner air, etc. Statistics show the vast majority of school-aged kids are not getting enough physical activity — only 35% of children and youth in Canada between the ages of 5 and 17 reach the recommended physical activity levels as outlined in the Canadian 24-Hour-Movement Guidelines for Children and Youth. Walking to school is an excellent way to get exercise. But walking to school needs to be safe and easy.

Distribute *Pedestrian safety skills* (pages 61 and 62). Ask students to look over the list to identify which of the items are already known to them, and which of the items list pedestrian safety skills that are new to them. As a class, discuss some of these new skills. What do the students think they have risked by not knowing these rules?

- Does everyone live the same distance from school? How do you know?
- Is there only one way to get from your home to the school?
- Could you give someone else directions to get from your home to the school? Does it matter whether you tell them the steps in order and if you are specific when you give the directions?
- Have the students turn to a classmate and share their directions from home to school. Have them use only words, no gestures, no sketches, etc. (Discuss with students the challenges of giving directions using only words.)

Explore

Introduce the topic of risk assessment, and explain to the students that risk assessment involves three steps:

- Identifying things that could cause harm (hazards)
- Assessing how likely these are to actually happen and how bad/severe the consequences could be (the risk)
- Looking for ways to minimize the risks, or make them smaller
  - Is it possible to eliminate any of the risks completely?

Explore and Experience

Explain that you will be asking the students to compare two walking routes to school.

Note: If students are not able to walk to school, the assignment could be to determine a best walking route to a destination near to the school or home.

If students live very close to school (e.g., there is only one road linking their home to the school), they could be asked to assess a best route to the library or other destination.

As a pedestrian safety activity, students who cycle are suggested to focus on the walk to school.

Students may work individually, or in pairs with a student who lives very close to them.

- Have the students map two possible routes from home to school using Google maps https://www.google.com/maps or MapQuest http://www.mapquest.com/
- List the stages for each option, for example:
  - Walk along ____ Street
  - Use the crossing at ____ Street
  - Walk through ____ Park
  - Turn north at the corner of ____ Street and continue walking
- What pedestrian hazards are they aware of? Is there traffic congestion? Are some times of the day worse than others? Do heavy vehicles use the roads around the school? Are the roads in a good condition around the school? Is there a pedestrian-safe parent drop-off zone? Are there lights at crosswalks?
- Use the *safe route to school checklist* activity sheet on pages 58 and 59 to assess which route has the lower risk, due to a combination of:
  - The presence of sidewalks
  - A barrier or space between the sidewalk and traffic (e.g., a grass verge, bushes, parked cars)
  - Crosswalks
  - Pedestrian lights
  - Slower traffic speeds
  - Lighter traffic volume

Questions

- What is the distance in kilometres for both routes?
- How long will it take to walk each one?
- How many steps will it take to walk each one? (There are an average of 1,312 steps to 1 kilometre.)
- How many more/less steps are needed to reach the 12,000 steps goal?

Activity sheet: Activity — safe route to school checklist

How walkable is the route to school?

1. Did you have room to walk?
   - ❑ Yes
   - ❑ Some problems
     - ❑ Sidewalks were broken or cracked
     - ❑ Sidewalks were blocked with poles, signs, trees, garbage cans, etc.
     - ❑ No sidewalks, paths or shoulders
     - ❑ Too much traffic
     - ❑ Something else _____
     - ❑ Location of problems _____
2. Was it easy to cross streets?
   - ❑ Yes
   - ❑ Some problems
     - ❑ Traffic signals too long or did not give enough time to cross
     - ❑ No traffic signals
     - ❑ No crossing guards
     - ❑ Parked cars blocked view of traffic
     - ❑ Trees, plants, poles or garbage cans blocked view of traffic
     - ❑ Too much traffic
     - ❑ Something else _____
     - ❑ Location of problems _____
3. Did drivers behave well?
   - ❑ Yes
   - ❑ Some problems
     - ❑ Backed out of driveway without looking
     - ❑ Did not yield to pedestrians crossing the street
     - ❑ Drove too fast
     - ❑ Made a right turn without checking for pedestrians
     - ❑ Was distracted (using cellphone, eating, etc.)
     - ❑ Drove through traffic light
     - ❑ Something else _____
     - ❑ Location of problems _____

Activity sheet: Activity — safe route to school checklist, continued

4. Was your walk pleasant?
   - ❑ Yes
   - ❑ Some problems
     - ❑ Barking, scary dogs
     - ❑ Scary people
     - ❑ Not well-lit
     - ❑ Litter or other garbage
     - ❑ Poor air quality due to traffic exhaust
     - ❑ Something else _____
     - ❑ Location of problems _____

Question and Investigate

Ask students to consider other factors they need to be aware of in your community (e.g., bears, trucks, highways) and add them to their list.

- Encourage the students to walk along both routes with their parent or guardian to confirm and itemize the list of risk-assessment factors, and discuss the two options
- Encourage students to notice the sounds of nature and be mindful of what the surroundings are, and to show gratitude for the outdoors
- Encourage students to also consider local information and sources of support along both routes: friends' homes, dogs not bound by leash or yard, cautionary places to avoid, etc.
- Have students assess both routes and identify the place/location on both routes in which they (and/or their parents) consider to have the highest risk of danger; identify the risks
- Ask students to discuss which of the school access points are safest, away from vehicle drop-off and pickup locations
- Have students draw a final map presenting their decision as to which is the better route, along with a short outline of the key factors in the assessment and identifying the risks they discovered

Develop, design and present

Invite students to present their maps to the class and discuss some of the factors involved in making the decision:

- Was it difficult to choose between the two routes?
- What is the distance in kilometres for each route?
- How long will it take to walk each one?
- How many steps will it take to walk each one? (There are an average of 1,312 steps to 1 kilometre.)
- How many more/less steps are needed to reach the 12,000 steps goal?
- Who has the longest/shortest distance to school?
- If both routes seemed similar, what was the deciding factor?
- How did their parent or guardian contribute to the decision?
- Did the presentations draw attention to specific items/places along the routes that they believe require attention from the municipality/region (e.g., add a crosswalk here, add a stop light here). Did more than one presentation find the same risks?
- Obtain feedback from classmates and then revisit their maps and edit/update their maps

Go beyond

- Buddy with a Grade 2 class and have the students share and discuss their maps and a safe route to school
- In groups of three or four, have students write a persuasive letter to the city identifying risks and a potential solution to the risks they identified on their way to school (e.g., add a crosswalk here, add a stop light here)
- Post a large map of Canada on a bulletin board and determine the number of kilometres it takes to cross the country; students can add up their walking kilometres individually, as a class or whole school and see how quickly they can "walk across Canada"

Activity sheet — Pedestrian safety skills

before crossing a street	
❑ seek to cross at a traffic light or a crosswalk	❑ obey all traffic signals
❑ never cross mid-block even if a friend calls to you to cross over	❑ always STOP, LOOK, LISTEN and LOOK AGAIN
❑ wait a step back from the curb	❑ look left, look right, look left again to double-check
❑ make eye contact with drivers and cyclists — and wait until they have stopped — before crossing	❑ wear bright / reflective clothes if walking in the evening or in the rain

while crossing	
❑ watch out for cars turning a corner, or entering and exiting a laneway	❑ while crossing, continue to look left, right and then left again to double-check for turning traffic
❑ make eye-contact with drivers before crossing to ensure they see you and they have stopped	❑ walk — don't turn — in a straight line
❑ remove headphones or put your phone conversation on hold	

when at a pedestrian-controlled crossing	
❑ don't assume that a walk signal or green light means that the cars will automatically stop	❑ don't walk until all traffic has stopped

Activity sheet — Pedestrian safety skills, continued

when crossing a multi-lane street	
❑ make eye-contact with drivers in EACH lane	❑ while crossing, check that drivers in EACH lane see you and have stopped before you step into that next lane
❑ don't assume all drivers are paying attention — just because one driver has stopped it is not a guarantee that all other drivers will stop too	

when crossing an intersection with a traffic circle	
❑ never take short cuts across a traffic circle	❑ do not walk diagonally across the centre

when walking along roads without sidewalks	
❑ walk on the left side of the road to see (and be seen by) traffic	❑ walk in a single file — don't fool around or shove
❑ stay safely away from trucks because truck drivers have limited visibility and trucks require extra space for turning	❑ walk a safe distance from the road away from the traffic
❑ be aware of ditches and other hazards	

when crossing railway tracks and crossings
❑ be cautious

Speaking to communicate

Time requirement

This learning plan will take one session to complete.

Inquiry question

Inquiry question: How can storytelling be used to convey an important message? What is an important role of Elders? Why is it important to follow rules? How can a talking stick be used to practise listening and communicating?

Learning objectives

Students will:

- Understand the rationale behind road safety rules
- Write a story that conveys an important message
- Conduct a personal assessment of how pedestrian safety is a part of their own experience.
- Participate in role play
- Make a talking stick and use it to practise listening and communicating
- Explain the possible consequences of not following a pedestrian safety rule
- Recognize causes and consequences of events, decisions, or developments (cause and consequence)

Materials and resources

- Pedestrian safety skills activity sheets from learning plan 1
- Paper fortune teller instructions
- Optional craft: wooden dowel(s) for each student or teams, colourful ribbons, beads, feathers, leather cord
- **Cree Story:** *The Granddaughter who was Eaten by a Big Fish* (6:15 min.)

Explore

Explain to the students that there are many safety rules to remember and follow. Ask them why they should follow the rules. What are the consequences if they do not follow them? Explain how adults in all societies have the responsibility of keeping children safe — they do this by explaining rules and consequences.

Explain that oral traditions are especially important among First People in passing on their cultures and their wisdom and rules. Explain to the students how Elders are role models and are shown a special kind of respect because of their knowledge, wisdom and life experiences. The stories they tell bring life from the past to the present in a way that not only tells, but also teaches. A story that teaches is or conveys an important message is called a parable. One of the most well-known parables for children is the story of the boy who cried wolf. It is a message to children about the dangers of lying. Ask the student to listen carefully to the story and identify the message it is telling.

You may read the story to students, play the audio version, or tell it from memory. Should you decide to tell the story, read it over a few times to get a general sense of the plot. Try a practice run of telling it out loud. The actual words of the story are not as important as the general concepts and characters.

Watch and Listen

Cree Story: *The Granddaughter who was Eaten by a Big Fish* (6:15 min.)

This is a story about Gookum (Cree word for "grandmother") and her mischievous granddaughter, Beulah. Beulah was a very curious little girl. She was always wandering off from the camp, looking for adventures. Gookum was always telling her to listen. One day, Gookum asked Beulah to get some water from the lake so she could make soup.

"Whatever you do, don't go swimming in the lake alone," said Gookum.

"Why not?" asked Beulah.

"Because there is a giant fish in that lake, and he will catch you and swallow you up if you swim too far."

"Eeeeeya, Gookum. I'm not afraid of a big fish."

So, Beulah went off to collect the water. Oh, it was a nice warm day. The sun shone brightly.

A squirrel chattered as she walked along the path.

"Go away, silly squirrel. I am busy."

A butterfly flew around the girl. She ran around in circles trying to catch the butterfly until it flew away. "I am really hot now," Beulah said to herself.

Finally, Beulah came to the lake. She went to the big rock where Gookum had showed her to stand to get water. She dipped her buckets in the lake. They filled up quickly. Those buckets were heavy now. She had to be very careful when she carried them to the shore, they were so heavy. With a cup, she scooped out the little sticks and leaves that floated on the top. She was ready to carry them back now.

Carrying the buckets made Beulah tired. She lay down next to the water, in a nice spot on a large flat rock. The sun shone on her. She was very hot, so she took off her shirt.

A blue jay landed in a tree next to the path.

The blue jay squawked at her.

"You noisy old bird. Stop disturbing me." The blue jay flew away.

Beulah decided to have a quick swim, just to cool off before she took the water back for Gookum. She removed all of her clothes and dived in.

The water was nice and cool. Beulah was a good swimmer. She decided she would swim out as far as she could. As she swam out, Beulah saw a huge silver flash in the water. It was a great big fish, and with one gulp, it swallowed her whole! Beulah found she was trapped in the stomach of the huge fish Gookum had warned her about.

"Oh no," she cried. "I should have listened to Gookum!"

Beulah had been gone a long time. Gookum thought that she had found an adventure and forgotten to get water. There was no point in worrying about her — there were chores to be done around camp. She cut wood and made dinner. When Beulah wasn't home by night, Gookum was worried, but she knew the little girl was able to take care of herself in the woods.

The next day, Beulah still was not back. Gookum needed food, so she gathered the fishing net and went down to the lake. She caught six fish. One was a huge creature that stretched as long as her arms and more. That big fish would feed a whole family for a week.

She started cutting up all the fish. When she finally got to the big fish, she slid the knife into the belly. Beulah jumped out, very much alive.

At first, Gookum was startled, but she quickly realized it was Beulah, who was covered head to toe in slimy, sticky fish innards.

She shook her head at Beulah, and began to laugh at her. "I told you, I told you not to swim in the lake." Beulah bowed her head and said nothing. She just went to the lake to clean off all the smelly fish slime.

Reflect and connect

- Why didn't Gookum want her granddaughter to swim in the lake?
- What was Beulah's reaction when she was told not to swim in the lake? Do you think that was the right way to act?
- Why did Beulah disobey Gookum? Do you think there may have been other ways for her to cool off without swimming in the lake?
- How did Gookum react when she discovered Beulah in the big fish? How do you think she felt?
- Do you think Beulah learned something? What did she learn?
- What did you learn?

Engage

In the story, Beulah is visited by three animals on her trip to the lake: a squirrel, a butterfly and a blue jay. Remind the class about Beulah's encounters with these three animals, and how she treated them. Now have the class imagine that the animals were trying to remind the girl of what Gookum had said.

What would the animals be trying to tell Beulah? For example, the blue jay may say, "Squawwwk... Gookum told you not to swim."

(optional activity) Create a Talking Stick

Students can do this activity in pairs, groups or individually for use at home. Provide each student with a six-inch wooden dowel, colourful ribbons, beads, feathers and some leather cord. The students can wrap the ribbon around the dowel and use tape or glue to secure the ends. On one end of the dowel, tie the piece of leather cord, letting the ends hang down loose. Decorate the cord with beads and tie a knot to the end of the cord to keep the beads in place. Tape feathers to the ends of the leather cord, and to the other end of the talking stick. Keep finished talking sticks in an accessible spot to be used during class discussions and reading circles.

Speaking to communicate

Explain to students that some First People use a talking circle to create a safe environment in which participants can share their point of view with others. It is an opportunity to learn to listen and respect the views of others. The intention is to open hearts to understand and connect with one another.

Have the students sit in a circle. The circle represents completeness. Place an object (e.g., feather, rock or one of the talking sticks) in the middle of the circle. Explain the rules:

- Everyone's contribution is equally important
- State what you feel or believe starting with 'I statements', e.g., 'I feel …'
- All comments must be addressed directly to the question or the issue, not to comments that another person has made
- When a person has the talking object, it is their turn to share thoughts, without interruption, and others have the responsibility to listen
- The talking object is then passed to the next person in a clockwise direction
- If someone does not want to speak, they pass the talking object to the next person

Give the talking object to a student who is comfortable speaking to a group. Ask that student to share what one of the animals was trying to tell Beulah. When the first student finishes sharing, he or she passes the talking object to the student on the right. Tell students that anyone who doesn't want to speak can simply pass the talking object to the next person. Students should continue passing the talking object until each person has had a chance to speak.

Go beyond — role play

After the class has discussed what the animals might have been saying to Beulah, ask the students, in teams of four, to act out a skit exploring these encounters. Encourage the actors to take on characteristics of the animals they are portraying (granddaughter, squirrel, butterfly, blue jay).

Create a story to convey an important lesson

Have students choose a road safety rule(s) and write a story about to give an important safety message to the readers. Follow the format of the story *The Granddaughter who was Eaten by a Big Fish*.

Story template:

- A mischievous child
- Elder who says not to do something
- Child asks why
- Elder explains rule
- Child does it anyway and suffers the consequences

- Elder saves child
- Child understands that rules must be followed for safety and elders experience should be listened to

Storytelling

- Have students read/tell their stories to the class
- Buddy with a younger class to read/tell their stories to
- Buddy with a Grade 1 or Grade 2 class and have students review the *pedestrian safety skills* activity sheet on pages 70 and 71 with the younger students and explain why they should be followed
- Each student with a younger buddy will review the rules as a question and then discuss and write a reason why it should be followed

Reflect, analyze and connect

Explain that you will review road safety rules from the previous units. List a rule as a question and a reason why it should be followed.

Activity sheet — Because statement worksheet

At a crosswalk why STOP, LOOK, LISTEN and LOOK AGAIN?	because....
Why should young children walk with, and hold the hand of an adult?	because....
Why shouldn't you fool around or shove when walking on a sidewalk?	because....
	because....
	because....
	because....
	because....

Activity sheet — Pedestrian safety skills

before crossing a street	
❑ seek to cross at a traffic light or a crosswalk	❑ obey all traffic signals
❑ never cross mid-block even if a friend calls to you to cross over	❑ always STOP, LOOK, LISTEN and LOOK AGAIN
❑ wait a step back from the curb	❑ look left, look right, look left again to double-check
❑ make eye contact with drivers and cyclists — and wait until they have stopped — before crossing	❑ wear bright / reflective clothes if walking in the evening or in the rain

while crossing	
❑ watch out for cars turning a corner, or entering and exiting a laneway	❑ while crossing, continue to look left, right and then left again to double-check for turning traffic
❑ make eye-contact with drivers before crossing to ensure they see you and they have stopped	❑ walk — don't turn — in a straight line
❑ remove headphones or put your phone conversation on hold	

when at a pedestrian-controlled crossing	
❑ don't assume that a walk signal or green light means that the cars will automatically stop	❑ don't walk until all traffic has stopped

Activity sheet — Pedestrian safety skills, continued

when crossing a multi-lane street	
❑ make eye-contact with drivers in EACH lane	❑ while crossing, check that drivers in EACH lane see you and have stopped before you step into that next lane
❑ don't assume all drivers are paying attention — just because one driver has stopped it is not a guarantee that all other drivers will stop too	

when crossing an intersection with a traffic circle	
❑ never take short cuts across a traffic circle	❑ do not walk diagonally across the centre

when walking along roads without sidewalks	
❑ walk on the left side of the road to see (and be seen by) traffic	❑ walk in a single file — don't fool around or shove
❑ stay safely away from trucks because truck drivers have limited visibility and trucks require extra space for turning	❑ walk a safe distance from the road away from the traffic
❑ be aware of ditches and other hazards	

when crossing railway tracks and crossings
❑ be cautious

Activity — *Make a paper fortune teller*

- Give each student a handout on how to make a paper fortune teller
- Students follow the instructions using a square piece of paper
- They colour each outside section a different colour, and put numbers on the inside sections
- On the inside tabs, they write a why rule and a because answer from the list on the board
- Students can play their fortune teller game with each other and also take the paper fortune teller home to play with family members

Reflect and connect

Ask the students to recall the first lesson when they completed the road safety Venn diagrams. Can they remember the road safety practices that were enclosed within their "me" oval?

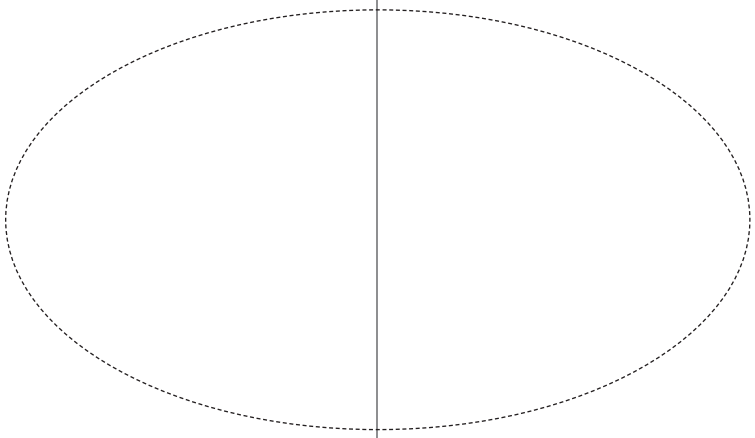
Redistribute the students' pedestrian safety activity sheets from Learning Plan 1. Allow the students a few minutes to read over both sides of their sheet.

As a class, discuss:

- Are there a few more, or a lot more, road safety practices that they can add to the columns?
- Has the "me" circle shifted on the page — in other words, are there some changes in the road safety practices that they perform?
- On the bottom right quadrant, ask the students to add to the list of pedestrian safety skills that they have learned.
- Optional: ask students to compose a reflective writing piece about what they have learned (using a couple of examples), and describe how their "me" oval may have shifted since beginning the unit

Pedestrian safety practices

Names _____ Date _____

What I know	
Unsafe pedestrian practices	**Safe pedestrian practices**
	
What I want to learn	**What I have learned**

Stop, think, go

Time requirement

This learning plan will take two sessions to complete.

Inquiry question

What are the risks pedestrians face and how can they be prevented? How can I protect myself and others from potentially unsafe situations?

Learning objectives

Students will:

- Demonstrate problem-solving skills
- Identify problems and make decisions

Materials and resources

- Statistics on reflective clothing

Reflect and connect

Did you know that November tends to be the most dangerous month of the year for pedestrians?

Most all safety-focused organizations recommend the use of reflective gear or clothing to reduce or prevent pedestrian accidents. Used in tandem with other pedestrian safety measures like crossing only at designated locations and facing oncoming traffic while walking, reflective gear does appear to be a major factor in preventing pedestrian accidents.

Irene Dixon, the creator of Reflective Advantage — a reflective garments line — wants to prevent future crashes by making pedestrians more visible. For example, she has a commuter scarf with reflective material sewn and stuck to both sides that comes in different colours and styles. They light up like a Christmas tree.

A B.C. father made safety gear designed specifically for children. He says, "It does not matter if you are a kid or an adult trade worker — if you are not wearing bright, high-visibility clothing, you are at a greater risk of an accident."

Questions

- Many kinds of special clothing and accessories are available to help increase visibility at night. Do you need high-tech clothing or just clothing that is light in colour?
- How difficult is it for a driver to see a pedestrian at night and how long does it take to stop a car to avoid an accident?

Explore

- Have students form groups of about three
- Give each group a scenario. Ask each group to demonstrate their problem-solving skills by using the problem-solving traffic light to:
  - **Red:** Stop and identify the problem. What does my friend want me to do? Is it something good or bad? Kind or mean? Healthy or unhealthy? Legal or illegal? Is it something you would do if your parents were watching?
  - **Yellow:** Wait and think: What could happen if I do it? Imagine any possible good results: Will you be doing something positive? Will you be helping someone? Imagine any possible bad results: Can you get hurt? Can you get in trouble? Can someone else get hurt or in trouble?
  - **Green:** Go! Make a decision and a plan. Should I do it? Will you be proud of your choice afterward? Would your parents be proud of your choice?

RED:	Stop and identify the problem. (What happened) What factors may have contributed to the crash – consider the pedestrian, the driver, the environment and the vehicle.
YELLOW:	Wait and think. Look at all the choices and their consequences (why did the crash happen) – consider the pedestrian, the driver, the environment and the vehicle.
GREEN:	Go! Make a decision and a plan (what could have prevented the tragedy).

Problem-solving Scenarios

You're playing video games with your friends when one of them mentions a 5K race that's coming up. You've never run a race before and aren't sure you should start now, but your friend says, "I bet we can do it. Look, I printed out this training plan. Let's start tomorrow."

You are going home with a friend's mom. She has parked on the other side of the road from the school and yells out for you to quickly run across the road because she is in a hurry and has the baby in the car. You know that it is safer to use the crosswalk further up the road. What should you do?

You are showing your friend how to play soccer on the edge of the road. Your friend misses the ball and it starts rolling out into the middle of the road. Your friend shouts at you to go and get the ball before it gets squashed. What should you do?

You and a friend are waiting for the 'walk' signals at the traffic lights. Your friend says that it is taking too long and you both should just run across after the next car. What should you do?

Some children are riding their skateboards on the sidewalk and practising jumping the curb. They are not wearing helmets or safety gear. What should you do?

You are walking home from school on the sidewalk next to a busy road. Your friend is wearing headphones and listening to music and wants you to listen too. You know that you both should be listening out for traffic. What should you do?

Unit review

Time requirement

This learning plan will take one session to complete.

Inquiry question

What have I learned about pedestrian safety and my responsibility to myself and others?

Learning objectives

Students will:

- Review what they learned about pedestrian safety
- Conduct a self-assessment/self-reflection
- Take a quiz

Quiz Time

As a class, discuss the following questions and the appropriate answers.

1. Which door should you use to get in and out of your car?
   a. Any door
   b. The door closest to the sidewalk
2. What is the Danger Zone on a bus?
   a. The bus is safe and the driver will look after me
   b. Any bit of a bus that is not the door you walk through — 3 metres around the bus
3. Where should your driver park when they drop you off at school or for the bus?
   a. The same side of the road the school is on or where the bus will stop
   b. The opposite side of the road
4. Where is the safest place to cross the road near school?
   a. The crosswalk
   b. At any place in the road

5. What is the speed limit in a school zone?
   a. 30 kilometres/hour
   b. 50 kilometres/hour
6. Before you cross the road, you should:
   a. Stop, look, listen and look again
   b. Send a text message to your friend
7. Should you play with a ball near the road?
   a. Yes
   b. No
8. The bus is coming. Where should you wait for the bus?
   a. About 3 metres back from the edge of the road on the same side as the bus
   b. Right on the edge of the road to be able to enter the bus quickly
9. Your friends ask you to cross the road away from the crosswalk because they think it's cool. What should you do?
   a. Say OK, just this once?
   b. Say no way, I will catch up with you later
10. Your driver is waiting for you across the road. What should you do?
   a. Run across the road
   b. Cross at a crosswalk

Reflect and Connect (you will need a beach ball and strips of paper)

Brainstorm with the class what they learned in this unit and have them turn what they have learned into questions. Write all the questions they brainstorm on pieces of paper and give each student one or two.

Have the students form a large circle. Grab a beach ball and toss it to one of the students. Ask the student one of the brainstormed questions. The student answers the question and then tosses the ball to another student and asks one of the prepared questions. Continue this process as time allows.

Possible questions:

- What is one thing you learned in this unit?
- Why should pedestrians wear reflective clothing?
- What can you do to try to prevent injuries while walking?

- How can you prevent getting hit by a car when you are crossing the street? (Answer: Look all ways.)
- Why is it important to look all ways?
- What are you looking for?
- What can happen if you're not careful or not looking?
- How do drivers sometimes break the rules and put people in danger? (Answers are likely to include driving too fast, being distracted, not wearing a seatbelt.)
- Does anyone know the speed limit outside our school? Do we think drivers stick to that limit? Are there any signs or road markings that remind drivers the school is here, and that they should drive carefully?
- Does anyone have ideas about how we can encourage drivers to drive more safely in the area? What about persuading parents to drive more safely? (Answers are likely to include posters, ads, letters to parents, talking to our parents.)
- So, we look all ways because….

Self-assessment/self-reflection

Have students write a short reflective writing piece about what they learned in this unit about peer pressure, about being a safe pedestrian, about the hazards pedestrians face and about making safe choices.

Campaign for pedestrian safety (see and be seen)

Time requirement

This learning plan will take two sessions to complete.

Inquiry question

How can I protect myself and others from potentially hazardous pedestrian situations? What can I do to campaign for a pedestrian-safe route to school?

Learning objectives

Students will:

- Collaboratively develop a strategy and write a slogan and a persuasive presentation for it, to raise awareness and advocate for pedestrian safety with an aim to promote the safety of oneself and others
- Review statistics on crashes involving pedestrians

Materials and resources

- Statistics on crashes involving pedestrians

Suggested procedure

Discussion

Article to review From the Times Colonist

In B.C.'s Lower Mainland, traffic incidents in which at least one pedestrian was involved rose from 1,700 in 2012 to 2,300 in 2016 . That's a 35% increase. In Calgary, one pedestrian is hit every day on average, half of them in crosswalks. Almost nine out of 10 collisions take place in clear weather, and 72% occur on dry, bare roads.

Current statistics for B.C. are available from ICBC QuickStats.

Are the drivers the only ones at fault? Ask the students if they have done, or have seen children doing, dangerous or unsafe things while walking.

Explore

As a class, brainstorm all the dangerous, distracted behaviours that children do/have done/could do while walking. Brainstorm how we can make our streets and highways more pedestrian-friendly.

For example:

- Put your device down, look, and make eye contact with drivers before crossing — remember to watch out for cars that are turning or backing up
- Always walk on sidewalks or paths and cross at street corners, utilizing traffic signals and crosswalks
- Be aware of others who may be distracted and speak up when you see someone who is distracted
- If you need to use a cellphone, stop on the sidewalk and find a safe area to talk; look up and pay extra attention when using headphones and turn the volume off when crossing the street
- Remove headphones when crossing the street
- Don't use your skateboard on a sidewalk — always use a skate park
- Make eye contact with drivers before crossing the street even on a walk signal
- Wear reflective clothing
- Walk, don't run

Explore, design and present

In groups of two or three, ask students to conduct research on strategies to keep pedestrians safe. Each group can come up with their own strategy. This can be something that is being done somewhere already or something new like mandatory reflective clothing, a crossing guard at every crosswalk, crosswalks that light up when pedestrians are on them, etc.

Have the teams create a slogan for their strategy and a persuasive presentation for the city (class) with their recommendations. They can write, paint, draw, film or design advertisements campaigning for pedestrian safety (awareness of where and how to both see and be seen). At the end of the presentations, have the class, as pretend city representatives, discuss the presentations and whether or not they were convinced to adopt the strategy to keep pedestrians safe.

Or have students create Public Service Announcements (PSAs). Explain to the class that PSAs are messages, often in the form of TV commercials, that share a message about health or safety concerning the general public. Show some samples on pedestrian safety from the PSA website. Discuss how making the public aware might change people's attitudes and behaviour.

Go Beyond

Make a pedestrian safety display in the school reception area for parents, or create online versions and share them through the school website, email newsletter or social media. You could also invite parents to a special assembly and present your advertisements. You could also display the posters in the community.

Extensions

- Select some or all of the posters to be shared with the Grade 2 classes to give them another tool for learning pedestrian safety skills
- Have students create a video "infomercial" explaining their project (use some basic footage of the site to eliminate the need for the student groups to be on-site when filming)
- Have students adapt their project into a comic book or a flip book
- Plan a walk-to-school day for your class or have it be a school-wide event. A walk-to-school day builds community awareness and parent support for safer routes to school. Co-ordinate with community members.
- Invite a police officer to talk to the students about seeing and being seen
- Invite a police officer to come and talk to the class about speeding
- Invite older students to discuss their best routes to school on a large map
- Plan a day for families to meet up about 15 minutes before class at a safe and convenient location a few blocks from the school — walk to school together along a best route that the students have helped to plan
- Ask students about other sidewalk users (for example, joggers, dog-walkers, strollers, wheelchairs) — how do the students change their behaviour when they encounter these other sidewalk users?
- Go for a short walk around the neighbourhood to record how many signs students can find. Look for signs on school property. Do they follow the same guidelines as the ones in the handouts? Are there enough signs? (Note: Signage on school property might be independent of municipal or provincial traffic standards.)

- Ask students how the road safety rules relate to rules they know in other games
- Ask students if they can identify some games that have potential for unsafe behaviour near the street (for example, games that involve potentially running out into the road: soccer, tag, playing catch)
- As part of a field trip, visit a nearby road that has no sidewalks and/or a railway crossing
- Organize school-wide walking school buses or bike trains — parents, grandparents, or high school student volunteers share responsibility to lead scheduled 'walking buses' to pick up students along set routes to and from school

Feedback and suggestions?

ICBC welcomes your questions, suggestions, and feedback at learningresourcefeedback@icbc.com.

unit 2
passenger safety

Determining prior knowledge

Time requirement

This learning plan will take one session to complete.

Inquiry question

What do I already know about hazards and potentially unsafe situations in relation to passenger safety?

Learning objectives

Students will:

- Depict, share, discuss at least one rule about passenger safety
- Identify when and why they or someone they know has not followed a passenger safety rule
- Conduct a self-assessment/self-reflection

Materials and resourcess

- Whiteboard or flip chart
- Picture of a Grade 4 student in a booster seat

Reflect and Connect

- Ask students what they know about being safe in a vehicle
- Ask students to list some passenger safety rules; record these ideas in a chart or on a whiteboard
- Ask the students if they follow the rules — what are the repercussions if they don't?

Self-assessment/self-reflection

Have students write a short reflective writing piece about an experience where they or someone else did not follow a passenger or driving safety rule.

- Summarize the experience
- Why was the passenger safety rule not followed?
- How did the experience make them feel?
- What were the possible consequences?
- What could they do differently next time?

Buckle up

Time requirement

This learning plan will take two sessions to complete.

Inquiry question

Why is it important to buckle up?

Learning objectives

Students will:

- Participate in discussions about the importance of seatbelts for all vehicle riders
- Identify reasons why passengers need to use a seatbelt
- Collect, organize and interpret data
- Ask questions and make predictions and share observations orally
- Make and record predictions and observations
- Collect, organize and interpret data
- Compare experiment results and share with others
- Conclude and illustrate and write experiment results

Materials and resources

For each group of students

- Two golf balls
- Marker
- Egg cartons cut into three (four slots each)
- Tape
- *Predictions and results* activity sheet on page 90
- Statistics on death/injuries related to no seatbelts or incorrect seatbelts

Reflect and connect

Did you know that each year in B.C., an average of 1,300 children aged 9 and under are injured, and five children are killed in motor vehicle crashes? Every time a child travels as a passenger in a motor vehicle, they are at risk of being involved in a collision. (Source: ICBC.)

Your chances of surviving a motor vehicle accident increase dramatically if you are wearing your seatbelt properly. Seatbelts hold you in place upon impact. Occupants in the vehicle who are not properly restrained can cause significant injury to themselves, other occupants or the driver during a collision.

Passengers and drivers in British Columbia are required to properly wear a seatbelt. Each unrestrained occupant risks being faced with a violation ticket. (Source: ICBC — Child car seats.)

- Discuss seatbelts
- What does a seatbelt do? (Answer: Keeps you securely fastened in your seat.)
- Why is it a law?

Experiment

Explain that students are going to conduct an experiment to see what happens when an egg carton containing golf balls without seatbelts stops suddenly, changes direction and crashes into an object. Then they will compare the results when an egg carton containing golf balls with seatbelts stops suddenly, changes direction and crashes into an object.

- Organize the students into groups of three and give each group an experiment worksheet
- Question: Discuss the purpose of the experiment; have the teams write the purpose of the experiment, what they wonder
- Hypothesis: Using the experiment worksheet, have them make and record their hypothesis (predictions)
- Procedure: Have the groups place the two golf balls in the egg carton and then push the carton along the floor to determine:
  - What happens to the golf balls when the egg carton with the untaped (no seatbelt) balls suddenly stops/changes directions/crashes?
- Tape the golf balls into the box and repeat the experiment:
  - What happens to the golf balls when the egg carton with the taped (with a seatbelt) balls stops suddenly/changes directions/crashes?

- Results: Have the teams complete the results section of the worksheet
  - What happened to the golf balls when the egg carton with the untaped (no seatbelt) balls suddenly stopped/changed directions/crashed?
  - What happened to the golf balls when the egg carton with the taped (with a seatbelt) balls stopped suddenly/changed directions/crashed?
- Conclusion: Have teams write a conclusion
  - What did they learn from the experiment?
  - What does this experiment tell us about passenger safety?

Predictions and results activity sheet

Names _____ Date _____

Question (purpose of the experiment, what we wonder)

What happens when the vehicle with golf balls:

- Stops suddenly without a seatbelt
- Changes direction without a seatbelt
- Crashes without a seatbelt
- Changes direction with a seatbelt
- Crashes without a seatbelt
- Crashes with a seatbelt

Hypothesis (what we predict will happen, what the results will be)

- Stops suddenly without a seatbelt
- Changes direction without a seatbelt
- Crashes without a seatbelt
- Changes direction with a seatbelt
- Crashes with a seatbelt
- Crashes with a seatbelt

Materials (what do you need to conduct the experiment)

Procedure (the steps need to be taken to conduct the experiment)

Results (what happened)

- Stops suddenly without a seatbelt
- Changes direction without a seatbelt
- Crashes without a seatbelt
- Changes direction with a seatbelt
- Crashes without a seatbelt
- Crashes with a seatbelt

Conclusions (what we learned from the experiment)

- Stops suddenly without a seatbelt
- Changes direction without a seatbelt
- Crashes without a seatbelt
- Changes direction with a seatbelt
- Crashes without a seatbelt
- Crashes with a seatbelt

I used to think… But now, I think…

This thinking routine helps students reflect on *how and why* their thinking about a topic has changed. To begin, ask students to consider what "I used to think…" to explain their initial opinions and/or beliefs about traffic safety. Then prompt students to share how their thinking has shifted, starting with "But now, I think…" Ask students to elaborate on why their thinking has changed.

Boost me up

Time requirement

This learning plan will take one session to complete.

Inquiry question

Why do I need a booster seat? How long do I need it for?

Learning objectives

Students will:

- Measure heights using a metre ruler
- Compare heights using a graph chart
- Identify the need for a booster seat
- Identify the difference between their height and 145 centimetres
- Design a zoo enclosure for an animal 145 centimetres tall

Materials and resources

- Metre ruler
- *Chart of average heights of children* on page 93

Reflect and connect

- Do the students use a seatbelt or a booster seat? Or both?
- Do their parents sit in a booster seat? Why not? (Answer: Because seatbelts are designed to fit adults.)
- Why do seatbelts not fit the average Grade 4 student?
- Do they have older sisters or brothers who have grown out of booster seats? How did the family know that it was time for them to stop using a booster seat?
- Do they know when they will no longer need a booster seat? Answer: When they have reached the height of 145 centimetres (4'9").
- Given the average height of children, at what age will the average child no longer need a booster seat?

Average height of children
Age 1 year: 76 centimetres
Age 2 years: 88 centimetres
Age 3 years: 95 centimetres
Age 4 years: 103 centimetres
Age 5 years: 110 centimetres
Age 6 years: 116 centimetres
Age 7 years: 121 centimetres
Age 8 years: 127 centimetres
Age 9 years: 132 centimetres
Age 10 years: 137 centimetres
Age 11 years: 143 centimetres
Age 12 years: 150 centimetres

Experience

Measuring 145 centimetres

- Show students the metre stick. Ask them what they think it measures. Tell students that a metre stick is 1 metre long; 1 metre is the same as 100 centimetres.
- Explain they must be 1 metre and 45 centimetres tall before they no longer need a booster seat
- Measure items in the classroom to determine what is 145 centimetres
- Reinforce the height rule for booster seats by having children user a metre ruler to measure each other and determine who needs a booster seat or use a measurement chart on the wall
- Create a graph of students heights
- Ask questions like: Who is the tallest? Shortest? Are there any students the same height? How many centimetres must each child grow before they no longer need a booster seat?
- Be sure to reinforce that booster seats are not babyish — it's OK if you aren't 145 centimetres (4'9") tall yet! You can see very cool things from your booster seat and, most importantly, your booster seat keeps you safe.

Collaborate and Design

Design a zoo enclosure:

- Have the students work in teams of three or four to design a zoo enclosure for an animal that is 145 centimetres tall (the animal can be real or imaginary)
- Teams brainstorm and give the attributes of their animal. How tall does the enclosure need to be to keep the animal in? How much room does the animal need? Why? How long? How wide?
- Have the teams draw their animals and their enclosures. List all the heights/lengths on their presentation.

Presentation

- Teams present their animals and enclosures to the class

Slow down!

Time requirement

This learning plan will take two sessions to complete.

Inquiry question

Why is speed one of the leading causes of death on B.C. roads?

Learning objectives

Students will:

- Be able to travel at slow, medium and fast speeds while moving to a rhythm or beat
- Identify speed limit traffic signs
- Explain the importance of limiting speed in school zones, near playground and in town
- Identify signs and signals and their meaning

Materials and resources

- Small hoop or rings (anything that can be a steering wheel)
- Cones or markers
- Music that alternates between a very slow, a medium tempo and a very fast tempo
- Images of school zone speed limit, in-town speed limit and highway speed limit
- Statistics on death/injuries related to speeding


MAXIMUM
50
km/h


MAXIMUM
70
km/h


30 km/h
8 AM - 5 PM
SCHOOL DAYS


MAXIMUM
30
km/h

Reflect and connect

Speed is one of the leading causes of death on B.C. roads. It is also a behaviour that is very easy to eliminate — **Just. Slow. Down.** Speed increases the risk of vehicle collisions — it comes with a high price. Crashes causing damages and injuries take a huge toll on insurance and other costs; however, from a public safety perspective, the greatest cost of speed is trauma and human life.

Speed is a significant factor in the number of fatalities and the number and severity of the injuries that result from road crashes. It is clear that reduced speeds not only reduce the likelihood of a crash but also reduce the severity of injuries when crashes occur. (Source: Government of B.C.)

Inquiry

Lead a discussion about traffic on the road, moving slow versus fast, which side of the road is used for passing, and spacing between vehicles. Review the concepts of fast, medium and slow speeds. When do vehicles go fast and when do they go slow?

In Canada, we measure speed on the road in kilometres per hour. Ask if anyone knows the speed limits for vehicles. What is the speed limit for trains? (Answer: 100 kilometres/hour.) Are vehicles allowed to go the same speed on every road? Explain that vehicles are to go slow (30 kilometres/hour) in school zones, and can go fast (100 kilometres/hour) on the highway and medium-fast (50 kilometres/hour) in town.

- Show the speed limit signs and add them to the word wall

Questions

- How fast is 100 kilometres/hour? It takes about 36 seconds for a train or vehicle to go 1 kilometre. One kilometre is 10 football fields or roughly the distance you can walk in 15 minutes.
- How far is it from the school to home? How long does it take you to walk/drive?
- How far do you think a train travelling at 100 kilometres/hour will travel before it stops? Answer: More than 1 kilometre!
- Explain that children are sometimes injured by trains and vehicles — people don't expect the train or vehicle to come that quickly, or they think they can cross the road or tracks before the train or vehicle comes

Problem-solving

Write the following problems on the board and then ask students to decide what further information, if any is required to complete the problem.

- A car travelled 3 kilometres. How long did it travel?
- Sam walked 5 kilometres. What was Sam's average speed?

Explain that an average speed can be determined if the length and time of the motion are known. Likewise, the length of motion can be known if the average speed and the time of the motion are known. Write the following problems on the board and ask the student to solve them using the problem-solving formulae:

Problem-solving formula

Distance = Speed × Time

Speed = Distance/Time

Time = Distance/Speed

Have students work in teams to solve the problems.

- A car drove 8 kilometres in 12 minutes. What was the average speed?
- If the speed limit is 50 kilometres/hour, and the car drove for 2 hours at 10 kilometres over the speed limit, how far did the car go?
- How long will it take a car going 100 kilometres/hour to go 3 kilometres?
- How long will it take a car going 50 kilometres/hour to go 3 kilometres?
- Tom rode his bike at 2 kilometres/hour for 12 kilometres. How long did it take him to finish his ride?
- Mary walks to school every day. Calculate her average speed in kilometres per hour if it takes her 30 minutes to walk 1.5 kilometres.

Activity — Design a road safety technology

Begin by reading and discussing **the Evolution of Road Safety**.

Then have the students, in groups of two or three, design a new technology that could save pedestrian lives. They will begin by brainstorming all the information/research/people they need to design this technology. How will it save pedestrian lives? Why is the technology needed? What problem will it solve? Teams can use the library to conduct research or can also research ideas online.

Have the teams illustrate and label their design, create a slogan for their strategy and a persuasive presentation on why their new technology will save lives and why it should be implemented. The presentation can be in any format they choose. For example:

- A PowerPoint presentation
- A poster
- A video
- A web page
- A magazine article
- A Public Service Announcements (PSA). PSAs are messages, often in the form of TV commercials, that share a message about health or safety concerning the general public. Samples can be found on the PSA website.

Have the students present their new technology at a parent night or school assembly or at a community forum.

The Evolution of Road Safety

As we take a look back at the evolution of road safety, it's interesting to see how much has changed, most of which within the last 200 years. From the horse-drawn carriage to sensors, cameras, and Bluetooth technology, a lot has happened in the road safety sphere over the past few decades and I can't wait to see what happens in the future.

Horse and carriage accidents

While the term "road safety" instantly conjures up images of today's modern cars, road accidents were occurring even before the invention of the motor vehicle.

The humble horse and carriage, when used as both a goods and passenger conveyer, combined with a lack of road rules resulted in numerous accidents, injuries and deaths.

You might think roads with slower and fewer vehicles would lessen the risk of accidents, but the ease in which people could be ejected from an open cart, combined with a vehicle that is powered by a horse, which is susceptible to spooking from the smallest of actions, means that carriage accidents resulted in legitimate injuries and even death. Goods were also severely destroyed when thrown from a cart.

The invention of the car

The invention of the first car is preceded by two important inventions:

- 1807 — François Isaac de Rivaz designed the first car that was powered by an internal engine fuelled by hydrogen
- 1865 — Siegfried Marcus built the first gasoline-powered combustion engine

De Rivaz's design and Marcus' build were simply elements of what could be, until Karl Benz combined the two ideas and developed a petrol-powered automobile around 1885.

Not long after we started driving cars, however, we also started getting injured by them. The following inventions were designed to reduce that risk.

Indicators

We chastise those who neglect to use them today, but did you know that electric turn signals were not fitted in cars until 1938? Mechanical turning signals were developed earlier, and before those, hand signals were used to indicate your intentions to other drivers.

Lap seatbelt

The lap seatbelt is also referred to as a "two-point" seatbelt, as it extended across the waist from one side of a person to the other. The concept is similar to the modern-day aircraft seatbelt. This design was invented in the early 1900s.

Australia

Australian law required all car occupants to use fitted seatbelts in 1973. It became compulsory in Victoria and South Australia a few years earlier.

Canada

In 1976, Ontario became the first Canadian province to introduce mandatory seatbelt laws. The rest of the country subsequently followed.

United Kingdom (U.K.)

In the U.K., many governments fought for seatbelt legislation (in terms of compulsory wearing) throughout the 60s and 70s. Fitting became mandatory in 1967, but wearing did not become mandatory until 1983.

United States (U.S.)

The U.S. introduced mandatory seatbelt installation as early as 1961 (in Wisconsin); however, the first state to pass the law of mandatory wear was New York in 1984. Laws vary considerably state by state.

Three-point seatbelt

The three-point seatbelt is just that: a belt that is, in appearance, a combination of the lap belt combined with a diagonal 'sash' belt. The three-point seatbelt is standard in most vehicles today.

Volvo introduced the three-point seatbelt in 1959. Volvo patented the design, but "in the interest of safety, made it available to other car manufacturers for free" (Source).

You might notice in slightly older cars that the centre seat in the back still has a lap seatbelt. Newer cars have replaced this belt, too, with the more modern (and safer) three-point seatbelt.

Road signs

Did you know that Detroit was the first U.S. city to use stop signs, lane markings and traffic signals? Around 1908, the city realized the sheer volume of people driving around with no experience (remember, anyone could drive without restrictions) and no boundaries — in terms of signage — was resulting in what the city believed to be avoidable deaths.

The first traffic lights

Traffic police would control the flow of traffic until 1914, when the first set of red and green traffic lights were successfully installed in Cleveland, Ohio. The first three-colour traffic light was invented by police officer William Potts in Detroit, Michigan in 1920.

Airbags

Airbags have had a rather long history. The idea was first conceived in 1941, and a decade later, American John W. Getrick patented the first airbag use.

By the 70s, traction slowed, as it was discovered that airbags didn't work as effectively with lap seatbelts. As three-point seatbelts grew in popularity, manufacturers began creating airbag solutions to work in conjunction with this safer belt.

In the U.S., all cars produced after 1998 require airbags. Since then, an average of 2,000 lives a year are saved by airbags.

Reverse cameras

Rear-facing technology is a great tool for those of us who rely on a little more help when reversing and parking. It is also helpful for those with small children by literally giving us eyes in the back of our heads. Audio cues alert you to close obstacles while the camera helps make some manoeuvring tasks easier.

Bluetooth

No matter how much it's drilled into our heads, there are still people foolish enough to think it is OK to continue using a hand-held device — like a smartphone — while behind the wheel. Bluetooth technology lets us answer calls and change the music without looking away from the road or taking our hands off the wheel.

The future of road safety

Now that we've caught up to the present, there's no better time to take a quick look into the future of road safety.

Video technology begins to replace mirrors

In June 2016, Japan became one of the first countries in the world to replace side mirrors with video technology. The goal is to eliminate potentially hazardous "blind spots" as well as removing a mirror's obstruction due to weather conditions like rain or glare.

Technology replaces drivers

Of course, no conversation about the future of road safety can happen without mentioning autonomous or driverless vehicles. Autonomous vehicles are advancing at a steady rate through many small victories, rather than fewer and larger breakthroughs.

Physical Education Activity — Danger zone

In this game, students will listen to the music. If the music is slow (school zone) the students will move slow. If the music speeds up (highway) the students can move fast.

- Place the cones or markers in each of the four corners in the gymnasium. Divide the students into teams of four and have them go to one of the cones in the corner. This will be their driveway. Give them a hoop or ring to be a steering wheel.
- When the music starts, everyone pulls out of their driveway (cone area) and drives slowly (walks)
- As the song goes faster, the students can too! If they want to pass anyone, do so on the left. This is just like you are passing on the highway.
- When the music is very fast, the students will be running as fast as they can — the teacher continues to give feedback to students on safe spacing and moving
- Students return their "steering wheels" to their "driveways"

Reflect and connect

- Discuss and review the concepts of slow versus fast
- When they were speeding, did they have the same control they had when walking?
- Why is it important for vehicles to go slow in a school zone?
- Why do they think that police officers monitor speed and give speeding tickets to drivers going too fast?
- Why do they think that speed bumps are placed in zones where vehicles should go slow?
- Why is it dangerous for pedestrians if vehicles are speeding?

We have learned that speed is one of the leading causes of death on B.C. roads, and that speed is a significant factor in the number of fatalities and the number and severity of the injuries that result from road crashes. It is also a behaviour that is very easy to eliminate — **Just. Slow. Down.**

Questions

- If it is that easy to eliminate, why does speeding continue to occur?
- What are police, ICBC and cities doing to try to prevent speeding?

Distracted driving

Time requirement

This learning plan will take two sessions over a one-week period to complete.

Inquiry question

What is distracted driving?

Learning objectives

Students will:

- Role-play to build an understanding of passenger safety and responsibility
- Identify distracted driving
- Identify safety risks associated with distracted driving
- Ask questions and make predictions and share observations orally
- Make and record predictions and observations
- Collect, organize and interpret data
- Compare experiment results and share with others
- Conclude and illustrate and write experiment results
- Conduct a self-assessment/self-reflection
- Reflect on their thinking

Materials and resources

- Five chairs (two in front and three behind)
- Distracted driving statistics

Role Play

- Organize the five chairs to represent the seating arrangements of a car (two in front and three behind)
- Ask for a student volunteer to be the driver of the car, two students to be the back-seat passengers and one student to be the front-seat passenger

Role-play driving to school with:

- The back-seat passengers sitting quietly
- The front-seat passenger giving directions such as:
  - Drive
  - Traffic signal ahead — slow down
  - Stop
  - Go
  - Turn right
  - Pedestrian crossing ahead — slow down and watch for pedestrians
  - Go
  - Turn left
  - Slow down — school zone
  - Traffic signal ahead — slow down
  - Stop
  - Go
  - Turn right into the parking lot
  - Pull up along the curb and stop

Role-play driving to school again, this time with:

- The back-seat passengers making a lot of noise and asking the driver questions
- The front-seat passenger giving directions such as:
  - Drive
  - Traffic signal ahead — slow down
  - Stop
  - Go
  - Turn right
  - Pedestrian crossing ahead — slow down and watch for pedestrians
  - Go
  - Turn left
  - Slow down — school zone
  - Traffic signal ahead — slow down
  - Stop
  - Go
  - Turn right into the parking lot
  - Pull up along the curb and stop

Question

- What did you notice about the driver with quiet passengers?
- What did you notice about the driver with noisy passengers who were asking questions?
- What might happen if a driver wasn't able to concentrate on driving?
- What other things might distract the driver?

Go beyond

Travelling through distractions — gymnasium or playground game

Divide the class into two teams: those who travel and those who throw balls.

Team One — walking students:

- Students walking across the playing field simulate cars and pedestrians
- Select three student volunteers to walk across the playing field to demonstrate
- Students begin on the end of the field
- Signal the students to cross from one end of the playing field to the other
- As they walk, students try to avoid balls rolled towards them
- If a student is touched by a ball or another player, they are to join the group of students rolling the balls
- Have half the students walking while the other half are rolling the balls

Team Two — students who roll balls: Students rolling the balls are simulating possible dangers that we might encounter when travelling, such as pedestrians, cyclists and animals crossing the street.

- Place the students rolling the balls on the sides of the playing field
- Give each student one ball
- Students must roll their ball in order to touch the students crossing the playing field
- Before students roll their ball, they must give a verbal or non-verbal warning of their intention by calling out the name of the student they intend to hit or giving an arm signal as a warning
- Once a ball has been rolled, it must be retrieved by the thrower

In order to encourage students to reflect on the various distractions they encounter when travelling, the game must be played three different times. The first time, students walking across the playing field will do so without distractions, simulating an ideal travelling situation. The second time, students crossing will have a hearing impairment — they will be listening to an iPod or the teacher will play very loud music, simulating travelling situations with hearing distractions such as driving a car with loud music. The third time, students crossing the playing field will have a visual impairment — they will be blindfolded, simulating visual distractions when travelling such as texting.

Teacher note:

Always be wary of student safety. You might choose to add safety guidelines before and during the game if necessary.

Investigate, reflect and connect

Sadly, each year in B.C., 78 people die in crashes involving distracted driving and 68 people die in crashes involving impaired driving.

Distracted driving is a serious problem. It is estimated that over 9,500 drivers are using a hand-held device while driving at any given time in B.C., with 40% of those drivers texting behind the wheel. In B.C., the fine for a distracted driving violation ticket is $368, along with 4 penalty points that will be applied to a driver's record. On a first infraction, these points will also result in a driver paying a further $210 ICBC Driver Penalty Point premium, for a total of $578 for a first infraction. Drivers with two or more convictions could pay $2,400.

According to data from the Insurance Corp. of B.C., between 2010 and 2016, police handed out more than 300,000 tickets for distracted driving.

Impaired driving is a serious problem. B.C. has the toughest drinking and driving laws in Canada. If you're caught driving impaired (over .05 blood alcohol concentration), you could lose your driver's licence and vehicle from 24 hours to 90 days, pay fines from $600 to $4,060, do jail time, and face mandatory rehabilitation and even the Installation of ignition interlock in your vehicle.

If your blood alcohol concentration (BAC) is .05%, it means you have 50 milligrams of alcohol in 100 millilitres of blood. Roughly one drink in one hour will keep you under .05%. Learn the facts behind impaired driving in B.C.

According to data from the Uniform Crime Reporting (UCR) survey, police reported 90,277 impaired driving incidents in Canada in 2011 — about 3,000 more than in 2010.

Question, predict and investigate

- Brainstorm and record all the things that might distract a driver
  - Texting
  - Talking on the phone
  - Using an app
  - Checking the GPS
  - Reading a map
  - Applying makeup
  - Searching for music on the radio or music player
  - Eating or drinking beverages
  - Hands-free calling
  - Passengers
  - Turning around to talk to someone
  - Drug or alcohol use
- Are there environmental factors that might distract a driver?
  - Searching for a parking spot
  - Weather conditions
- Are there personal driver related factors that might distract a driver?
  - Stress
  - Anger or sadness
  - Alcohol, drugs, medication
  - Overtired
  - Not well
  - Hungry
  - Driving too fast
- Are there vehicle-related factors that might distract a driver?
  - Cracked windshield
  - Engine trouble
  - No headlights

Using the brainstormed list, have each student create a tally sheet to take home. Predict what might be the most common distraction and predict how often distractions might occur. Have each student take home the tally sheet and have them record each instance of distracted driving they see and bring it to school every day for a week. Are some distractions harder to detect than others?

Explain that all distractions are impairments — they impair the driver from concentrating and focusing.

Make a giant wall poster with all the distractions/impairments. Every morning, review the results from each student and note the instances on the wall poster.

Activity sheet

Distractions/Impairment	Predictions	Results
Texting		
Talking on the phone		
Using an app		
Checking the GPS		
Reading a map		
Applying makeup		
Searching for music on the radio or music player		
Eating		
Passengers		
Turning around to talk to someone		
Extreme weather conditions		
Alcohol or drugs		
Stress, anger, or sickness		
Cracked windshield		
Vehicle problems (low on gas or low tire, for example)		

Reflect, connect and predict

- How many instances of distracted driving did the students see? Which was the most common?
- Can the students anticipate some of the safety risks associated with distracted driving?

Explore

- In B.C. the violation ticket is $368. If the minimum wage is $13.85 an hour, how many hours would you have to work to pay for one violation ticket? Driver penalty point premiums are $175? How many hours would you have to work to pay for that driver penalty point premium?

Graph

- Graph the results on large poster paper and hang the poster on a bulletin board
- How many violation tickets would the class have handed out?

Collaborate, design and present

- Group the students into teams of four and have them write an anti-distracted driving slogan and poster
- Invite parents into the classroom and have the students present their slogans, posters and results of their survey

Campaign to end distracted driving

Have the students present their findings at a parent night or school assembly.

Family pledge

Have the students take home 'the truth about distracted driving' pledge and have a parent or guardian sign it.

Activity sheet

The truth about distracted driving

The facts

- The distracted driving law applies whenever you're in control of your car—even when you're stopped at a light or in bumper-to-bumper traffic.
- You're five times more likely to crash if you're on your phone.
- Studies show that drivers who are talking on a cellphone lose about 50 per cent of what's going on around them, visually.

The rules

- Any violation of the law costs drivers a $368 fine and four driver penalty points.
- Hands-free means a wireless or wired headset or speakerphone.
- If you're using a headset or headphones, remember that drivers can only wear them in one ear. Motorcyclists however, can use two earphones while riding.
- Drivers in the Graduated Licensing Program (GLP) are not allowed to use personal electronic devices at any time, including hands-free phones.

Tips for drivers

- It can wait. No call or text is so important it's worth risking your life.
- If you can't leave your phone alone while driving, turn it off and put it in the trunk of your car to avoid the temptation.
- Assign a designated texter. Ask your passengers to make or receive calls and texts for you.

Pledge

I _____ **pledge to leave my phone alone while driving.**
(first name only)

TS405N (082016)

Reflect

I used to think… But now, I think…

This thinking routine helps students reflect on *how and why* their thinking about a topic has changed. To begin, ask students to consider what "I used to think…" to explain their initial opinions and/or beliefs about traffic safety. Then prompt students to share how their thinking has shifted, starting with "But now, I think…" Ask students to elaborate on why their thinking has changed.

Self-assessment/self-reflection

Have students write a short reflective writing piece about an experience with distracted driving.

- Summarize the experience
- What was the distraction?
- How did the experience make them feel?
- What were the possible consequences?
- What would they do differently next time?

Stop, think, go!

Time requirement

This learning plan will take one session to complete.

Inquiry question: How can I take responsibility for passenger safety?

Learning objectives

Students will:

- Demonstrate problem-solving skills
- Identify problems and make decisions
- Be a passenger safety ambassador

Materials and resources

- Statistics on children injured/killed in crashes in B.C.

Explore

Did you know that each year in B.C., an average of 1,300 children aged 9 and under are injured, and five children are killed in motor vehicle crashes? Every time a child travels as a passenger in a motor vehicle, they are at risk of being involved in a collision. (Source: Child car seats)

There are four stages of child seating and restraint systems in total:

- **Infants:** required to sit in rear-facing car seats until they are at least 12 months old and over 9 kilograms (20 pounds)
- **Toddlers:** required to sit in forward-facing car seats when the child is at least a year old and over 9 kilograms (20 pounds); they should continue to be buckled into this type of seat until they weigh 18 kilograms (40 pounds)
- **Under 9:** required to be in booster seats with seatbelts when the child is under 9 years of age or until they have reached the height of 145 centimetres (4'9")
- **Youth:** A properly adjusted seatbelt is the last stage for anyone over 9 years of age

Explain to the class that passenger safety is everybody's responsibility, but the greater responsibility is on the driver. Every person must take responsibility for looking after their own safety. On the board, brainstorm with the class a list of potential safety issues that may confront students as a passenger. As a class, develop a list of potential strategies students may use to reduce the risks. What could you do if your strategies did not work? For example, what could you do if the driver ignored you?

Problem-solving

- Have students form groups of about three
- Give each group a scenario. Ask each group to demonstrate their problem-solving skills by using the problem-solving traffic light to:
  - **Red:** Stop and identify the problem. What does my friend want me to do? Is it something good or bad? Kind or mean? Healthy or unhealthy? Legal or illegal? Is it something you would do if your parents were watching?
  - **Yellow:** Wait and think: What could happen if I do it? Imagine any possible good results: Will you be doing something positive? Will you be helping someone? Imagine any possible bad results: Can you get hurt? Can you get in trouble? Can someone else get hurt or in trouble?
  - **Green:** Go! Make a decision and a plan. Should I do it? Will you be proud of your choice afterward? Would your parents be proud of your choice?

RED:	Stop and identify the problem. (What happened) What factors may have contributed to the crash – consider the pedestrian, the driver, the environment and the vehicle.
YELLOW:	Wait and think. Look at all the choices and their consequences (why did the crash happen) – consider the pedestrian, the driver, the environment and the vehicle.
GREEN:	Go! Make a decision and a plan (what could have prevented the tragedy).

Problem-solving scenarios

What strategies could you use in these scenarios to ensure every passenger stays safe?

- Your driver is texting while driving
- Your driver is trying to find a destination in a navigation system while driving
- A passenger in the vehicle is tired and removes the seatbelt to lay down and sleep
- Your driver is busy and does not notice that the passengers in the back seat did not buckle up?
- You want to go to your friend's place, but your driver has been drinking alcohol
- Real-Life Scenario: A driver turned a corner and the passenger door flew open — a baby in a car seat flew out the door and bounced on the highway. Fortunately, the baby was protected in the car seat and was unharmed. In this scenario, who is at fault? What do you think happened? How could this have happened? What could have prevented it? (Answer: The driver is responsible for ensuring passengers wear seatbelts.)

Presentation

Have teams present their scenarios and solutions to the class.

Question and investigate

With the class brainstorm a passenger safety checklist. Examples could include:

- Are all passengers buckled in securely and correctly? Double-check.
- Are the doors locked?
- Is the route planned in advance?
- Is the driver free from distractions?
- Is the driver free from impairments?

Turn the brainstormed list into a checklist and give each student a copy to take home and use at the beginning of every ride.

Activity sheet — Analyze and critique

What could you do if your passenger safety checklist did not work? For example, what could you do if the driver ignored you when you reminded them to put their cellphone away?

Ready, set, go.... safety checklist	
Are the doors locked?	
Are all the passengers buckled in? Check and double-check.	
Is the driver free from distractions?	
Is the driver free from impairments?	
Did the driver put the cellphone away?	
Is the route planned in advance?	
	
	
	
	
	

Unit review

Time requirement

This learning plan will take one session to complete.

Inquiry question

What have I learned about my responsibility to myself and others while riding in a vehicle?

Learning objectives

Students will:

- Review what they learned about passenger safety
- Participate in a talking circle
- Conduct a self-assessment
- Conduct a self-reflection
- Scenario-based team presentations

Connect and reflect (you will need a beach ball and strips of paper)

Brainstorm with the class what they learned in this unit and have them turn what they have learned into questions. Write all the questions they brainstorm on pieces of paper and give each student one or two.

Have the students form a large circle. Grab a beach ball and toss it to one of the students. Ask the student one of the brainstormed questions. The student answers the question and then tosses the ball to another student and asks one of the prepared questions. Continue this process as time allows.

Possible questions:

- What is one thing you learned in this unit?
- Who is responsible for passenger safety?
- Why should passengers not distract the driver?
- Who is responsible for passenger safety?

Speaking to Communicate

Review with students that a talking circle is used with some First People to create a safe environment in which participants can share their point of view with others. It is an opportunity to learn to listen and respect the views of others. The intention is to open hearts to understand and connect with one another.

Have the students sit in a circle. The circle represents completeness. Place a talking object (e.g., feather, rock, stick) in the middle of the circle. Explain the rules:

- Everyone's contribution is equally important
- State what you feel or believe starting with 'I statements', e.g., 'I feel …'
- All comments must be addressed directly to the question or the issue, not to comments that another person has made
- When a person has the talking object, it is their turn to share thoughts, without interruption, and others have the responsibility to listen
- The talking object is then passed to the next person in a clockwise direction
- If someone does not want to speak, they pass the talking object to the next person

Talking circle topic: What is one important thing you learned about being a responsible passenger? What does 'responsible passenger, responsible driver' mean?

Self-reflection

I used to think… But now, I think…

This thinking routine helps students reflect on *how and why* their thinking about a topic has changed. To begin, ask students to consider what "I used to think…" to explain their initial opinions and/or beliefs about traffic safety. Then prompt students to share how their thinking has shifted, starting with "But now, I think…" Ask students to elaborate on why their thinking has changed.

Self-assessment

Have students write a short reflective writing piece about what they learned from their passenger safety checklist and what they learned about their responsibility to keep themselves and others safe while in a vehicle.

Campaign for passenger safety

Time requirement

This learning plan will take two sessions to complete.

Inquiry question

How can I protect myself and others from potentially hazardous passenger situations?

Learning objectives

Students will:

- Collaboratively create a PSA to raise awareness and advocate for pedestrian safety with an aim to promote the safety of oneself and others
- Review statistics on crashes involving passengers
- Demonstrate that doing something is better than doing nothing at all

Materials and resources

- Poster-making supplies

Reflect and connect

Did you know that each year in B.C., an average of 1,300 children aged 9 and under are injured, and five children are killed in motor vehicle crashes? Every time a child travels as a passenger in a motor vehicle, they are at risk of being involved in a collision. (Source: ICBC.)

Explore, design and present

In groups of two or three, have students collaboratively create Public Service Announcements (PSAs) about passenger safety. Each group can choose their area of interest (buckle up, distracted driving, speeding, drinking and driving).

- Explain to the class that PSAs are messages, often in the form of TV commercials, that share a message about health or safety concerning the general public. Show some samples from the PSA website. Discuss how making the public aware might change people's attitudes and behaviour.

- Show the students some advertisements advocating for passenger safety. Ask students to consider how effective these advertisements are and who they might appeal to. Ask students if they think any of these advertisements change perceptions about wearing seatbelts and driving safely.
- Explain that students will be working in pairs or small groups to produce a PSA
- Have the teams present their PSAs

Go beyond

- Make a display in the school reception area for parents or create online versions and share them through the school website, email newsletter or social media; you could also invite parents to a special assembly and present your advertisements
- Display the posters in the community

Extensions

- Have students create a video "infomercial" explaining their project (use some basic footage of the site to eliminate the need for the student groups to be on site when filming)
- Have students adapt their project into a comic book or a flip book
- Encourage students to write a letter to the local municipality/region to share their recommendations for improving the safety of the local crossing(s)
- Invite a local police officer to come talk to the class about distracted driving
- Invite an Elder or a member of the community to come into the classroom and share a story

Feedback and suggestions?

ICBC welcomes your questions, suggestions, and feedback at learningresourcefeedback@icbc.com.

unit 3

bicycle safety

Determining prior knowledge

Time requirement

This learning plan will take one session to complete.

Inquiry question

What do I already know about bicycle safety and bicycle safety rules?

Learning objectives

Students will:

- Depict, share, discuss at least one rule about bicycle safety
- Identify when and why they or someone they know has not followed a passenger safety rule
- Conduct a self-assessment/self-reflection

Materials and resources

- *Bicycle safety practices* activity sheet on page 126
- Pictures of children riding bicycles wearing helmets
- See how many crashes involving cyclists and motorcyclists are happening across B.C.
  - Cyclists
  - Motorcyclists

Reflect and connect

Begin a discussion around bicycle safety. If possible, make a link to any stories or current topics or recent events in the community.

- Ask students about bicycles
- Ask students what they know about bike safety
- Ask students to list some bike safety rules; record these ideas in a chart or board
- Ask students if they think they are safe cyclists

- How do you know when someone (including yourself) is not being a safe cyclist?
- Discuss the difference between "not knowing a bicycle rule" versus "choosing not to follow a bicycle safety rule"
- Discuss the difference between the law and a guideline; for example, in B.C. it is the law to wear a bicycle helmet

Explore

- Distribute the bicycle safety practices activity sheet on page xx.
- Explain to the students that you are looking for honest responses so that the entire class can benefit and that the responses will be kept anonymous; the students are asked to write their names on the activity sheet so that they can be collected, tallied up anonymously and then returned at the end of the unit
- Explain to the students the *full task before they begin*, because the positioning of the responses on the page affects the next stage
  - Have the students fill in the columns with as many skills/attributes/behaviours as they can recall
  - Unsafe bicycle practices are listed on the left and safe bicycle practices are listed on the right
  - As they complete the sheet, they should position items that are true for them inside the circle, and items that are not true for them outside the circle
  - When finished, students should trace over the dashed line of the circle; the practices listed inside the circle describes all the practices that are true for them — students can label this circle "me"

Investigate

Ask students to count the number of items inside each of the two columns and write the number on the line next to the title.

Reflect, connect and analyze

Which column had the most entries? What do the students think that suggests about their bicycle safety knowledge?

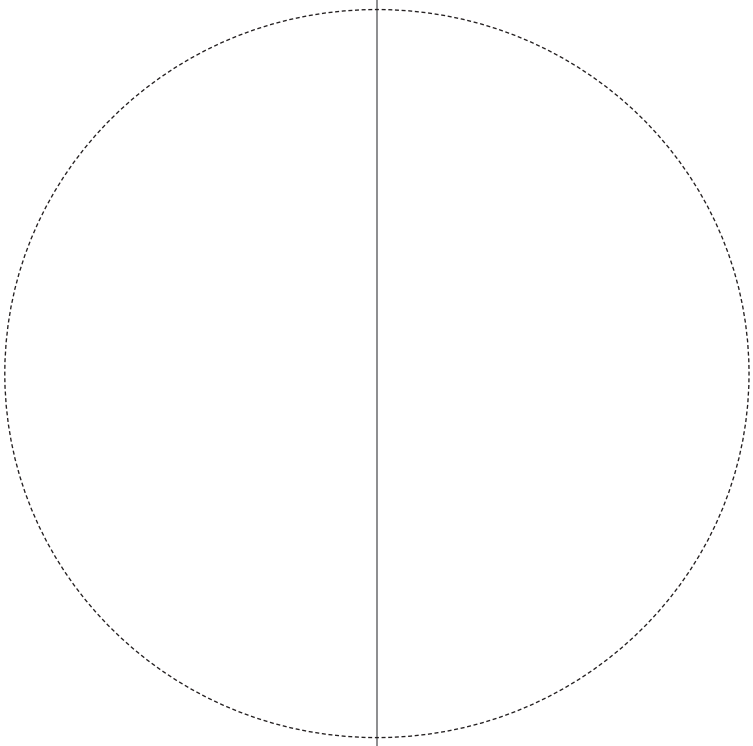
- Do they know more about bicycle safety?
- Do they know the rules in a positive language, or in a "don't do" format?
- How many items are inside the circle labeled "me"?
- Collect the sheets and tally the number of practices within the safe and the unsafe side of the "me" circle; to save time, consider selecting five or six sheets at random and tallying only those sheets
- Record these numbers on the board (or overhead projector)
- Calculate — or have the students calculate — the percentage of safe practices from this sample or create a bar graph with the data

Discuss these results and emphasize the importance of following ALL bicycle safety rules and safe practices 100% of the time.

Collect these handouts and explain to the students that they will be exploring a variety of topics later on in this unit and the rationale for choosing to follow road safety rules.

Bicycle safety practices (activity sheet)

Names _____ Date _____

What I know	
Unsafe bicycle practices	Safe bicycle practices
	

Word wall

Time requirement

This learning plan will take one session to complete.

Inquiry question

How can I develop my pedestrian sense vocabulary and use it in reflective writing?

Learning objectives

Students will:

- Use the words on the word wall to compose a reflective writing piece
- Recognize words on the word wall
- Participate in games to develop bicycle and bicycle safety vocabulary
- See patterns and relationship in words, thus building phonics and spelling skills
- Conduct a self-assessment/self-reflection

Materials and resources

- Cards to write words for the word wall

Explore

To encourage vocabulary development and reinforce language skill, have students help you create a word wall with bicycle safety words (bicycle, helmet, signal). The word wall can be as simple or as complex as you want. For the simplest word wall, use a sentence strip pocket chart where you can cut the words to size and slip them into the pockets. If there is no board space or wall space available, hang a clothesline across the room and clothespin the words to the line.

Experience

Brainstorm bicycle words. Write all the words on cards for the word wall. As you place the words on the word wall, discuss how each one relates to being safe on a bicycle.

- Read the word wall with the class
- Use the words from the word wall in a spelling quiz or charades game

Self-assessment/self-reflection

Have the students compose a reflective writing piece using words from the word wall about an experience where they, or someone they know, was not a safe cyclist.

Bicycle believe it or not

Time requirement

This learning plan will take two sessions to complete.

Inquiry question

What are the parts of the bicycle and how does each part work together to keep a cyclist safe?

Learning objectives

Students will:

- Demonstrate how to properly fit a bicycle
- Demonstrate a five-point bicycle safety check
- Label the parts of a bicycle
- Explore bicycle subsystems, define the properties each has on its own, and how each works with the whole system
- Design a bicycle with enhanced safety features

Materials and resources

- *Bike parts* activity sheet on page 135
- A bicycle
- *Bike safety equipment* video (3:19 min.)
- *Pictures of bicycles through the ages* on page 130

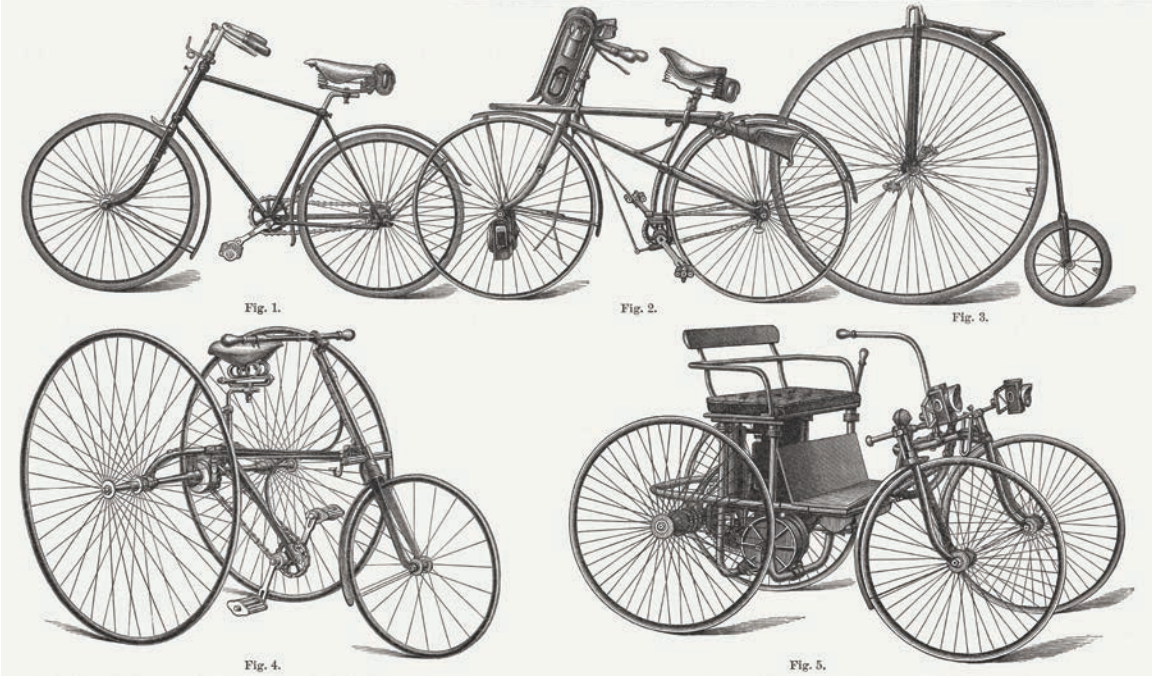


Fig. 1.
Fig. 2.
Fig. 3.
Fig. 4.
Fig. 5.

Reflect, connect and investigate

- Bring a bike into the classroom
- Brainstorm the parts of the bicycle and how each part keeps the cyclist safe; add the words to the word wall
- For example:
  - Frame — supports and balances the cyclist
  - Tires — move the bike, need to be checked often for bulges, cuts, cracks or worn spots
  - Tire valve — where air is put into the tires
  - Spokes — support the tires
  - Chain — moves the power from the pedals to the rear wheel
  - Pedal — where cyclist puts feet to move the bike
  - Seat — where the cyclist sits
  - Handlebar grip — where cyclist puts hands
  - Fenders — keep mud and water off the cyclist
  - Rear and front caliper brakes — lets cyclist stop the bike
  - Bell — warning signal
  - Red rear reflector — makes the cyclist more visible
  - Rear red light — must be mounted and visible to the rear
  - Front white light — must be mounted on the front
- Discuss basic maintenance tips

A properly fitted bike is the difference between an uncomfortable ride and lifelong satisfaction as a cyclist.

To fit a bike:

- Stand over the top tube with your feet flat on the ground
- Lift the front wheel — you should be able to lift it 2.5 to 5 centimetres 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

Experience

- Have two or three students of different heights sit on the bike and determine who it properly fits, and who it fits poorly
- Why is it important to be able to reach the pedals? The brakes?
- Watch the *Bike safety equipment* video (3:18 min.)

Watch and listen

Bike safety equipment video (3:18 min.)

Dante and Tiara show how important it is to have the right equipment such as an appropriate helmet and how to wear it properly, as well as the importance of clothing, eye protection, gloves and proper shoes. As Tiara tunes her guitar, Dante demonstrates how to tune a bicycle by checking that the brakes and tires are in good condition including air pressure (PSI). Tiara recommends panniers instead of using a backpack and demonstrates how to check that your bicycle's the right size.

Reflect and connect

- When getting ready to ride a bicycle, what do you need to be wearing?
- Bike helmet that fits properly — it's the law
- No hood, hat, or baseball cap underneath the helmet because your helmet won't fit right and it interferes with peripheral vision
- Closed shoes — no open toes, flip-flops or bare feet, and laces and pant cuffs secured — that way they won't get caught in the chain
- Glasses to protect your eyes from bugs, dust or rain, and gloves in cold or rainy weather
- Bike rack panniers instead of riding with a backpack — storing books in panniers lowers the centre of gravity, making the bike and rider more stable

What equipment is required to ensure that people (pedestrians, cyclists, drivers) on your route can see and hear you?

- Clothes in bright colours or with reflective materials for rainy weather, dark days or evenings
- Bell or horn to warn other cyclists and pedestrians that you're coming
- Working lights — if you're riding on a rainy or dark day, you need a white light on the front of your bike, a red light on the back, and a red rear reflector. Remember — cyclists are difficult to see at night. Don't assume that drivers or pedestrians can see you, even if you can see them.

What's the five-point bicycle safety check that you and/or your parents should review before every ride?

Make sure your:

- Brakes and gears work properly
- Bike is the right size for you and that the seat height is adjusted properly — while riding, your knees should be slightly bent when the pedal is at its lowest point
- Tires are inflated properly — compare the air pressure with the PSI (pounds per square inch) reading on the side of the tire
- Tire wheel nuts and handlebars are secure — not wobbly
- Helmet fits properly and is safely adjusted

Explore and investigate

- Most bicycles have two wheels (bi means two), and most bicycles have two pedals, a frame, handlebars and a seat; there's also a chain that helps the back wheel move
- A bicycle with one wheel is called a unicycle (show a picture and discuss safety considerations)
- A bicycle with three wheels is called a tricycle (show a picture and discuss safety considerations)
- A bicycle with four wheels is a quadracycle (show a picture and discuss safety considerations)
- Would you be surprised to know that there was a bicycle that could be ridden by 52 people at the same time? It was 140 feet long and had 26 wheels. The longest two-wheeled bicycle was 67 feet long and held 35 people!
- The earliest bicycle was a wooden scooter-like contraption called a celerifere; it was invented about 1790 by Comte Mede de Sivrac of France. In 1816, Baron Karl von Drais de Sauerbrun, of Germany, invented a model with a steering bar attached to the front wheel, which he called a Draisienne. It has two wheels (of the same size), and the rider sat between the two wheels, but there were no pedals; to move, you had to propel the bicycle forward using your feet (a bit like a scooter).
- Early tires were wooden — metal tires were an improvement, and solid rubber tires were added later.
- A chain with sprockets was added to the bicycle in the 1880s; this was called the "**safety bicycle**"; air-filled tires were also added in the 1880s

- Can you imagine riding a bike with a front wheel nearly twice as tall as you? A bike like this was popular a long time ago and was known as the high-wheel bicycle, or penny farthing (display a picture of the penny farthing.) Unfortunately, the penny farthing wasn't safe. With such a large front wheel, it was easy for a rider to lose balance and go flying head first over the handlebars. Also, there were no brakes. Imagine going really fast down a hill without brakes!
- Have you seen a bicycle built for two? (show a picture and discuss safety considerations)
- Have you seen a bicycle built for four? (show a picture and discuss safety considerations)
- There are electric bicycles and even bicycles that, when you pedal, a generator turns, which charges a battery that can be used as a power source

Activity

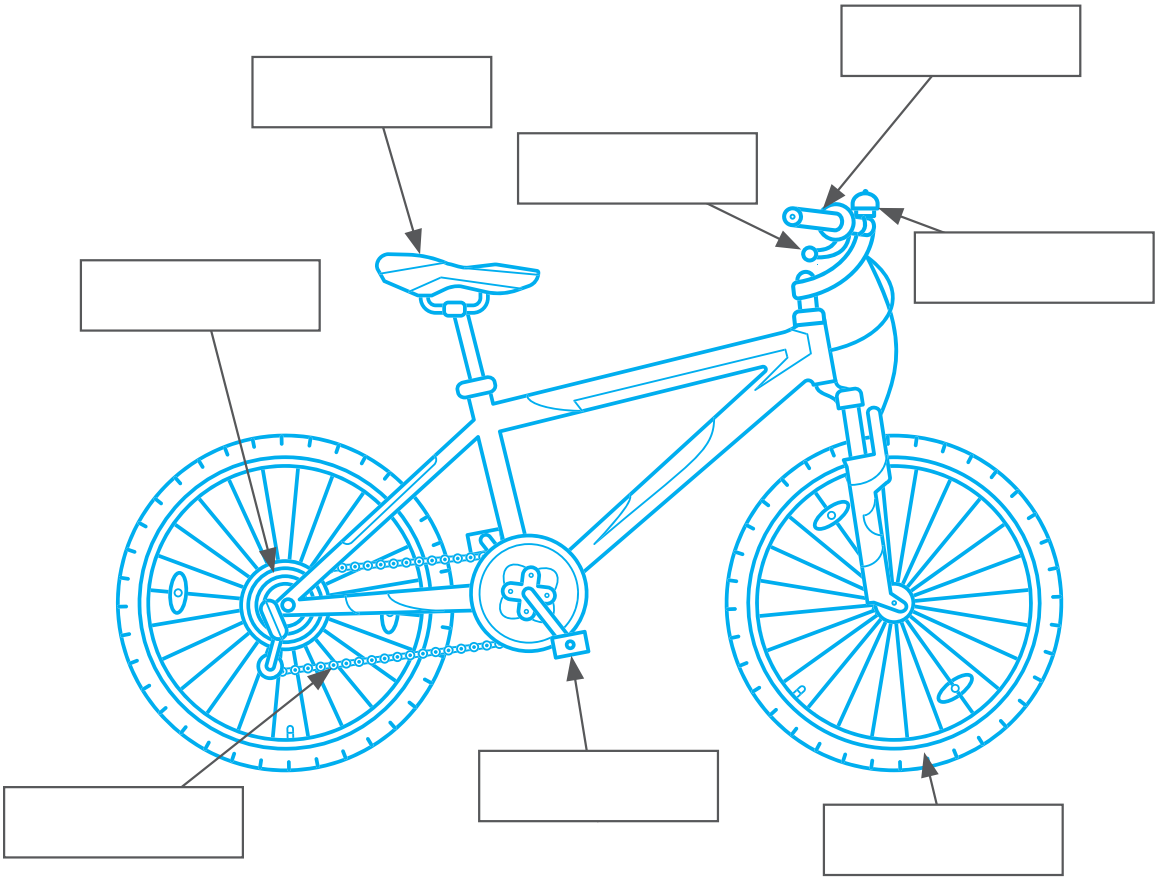
Add the new words (tricycle, unicycle, quadracycle, electric bicycle, penny farthing) to the word wall.

Label the parts of a bicycle

Review the parts of the bicycle. Have the students label the bicycle parts.

Activity sheet — Bike Parts

Cut and paste the parts of the bike onto the picture.



bell	brake lever	seat	tire
pedal	chain	gears	handlebar

Collaborate, explore, invent and present

Group the students into teams of about four. Explain that they are part of a team of engineers given the challenge by the city to design a bicycle with enhanced safety features.

Students can use the library to conduct research, and if they have access to the internet, can also research ideas online.

Have students brainstorm with their team to develop a safe bicycle. Draw a detailed diagram of it and label it. Explain how it might reduce cycling accidents. What are the safety features?

Students can use presentation software such as PowerPoint, or create posters, or paper handouts to share their invention with the rest of the class.

Ready to ride

Time requirement

This learning plan will take two sessions to complete.

Inquiry question

What do I need to know about bicycle safety? What equipment do I need? What are the rules of the road?

Learning objectives

Students will:

- Engage actively as listeners and viewers to develop an understanding of bicycle safety
- Describe how they practise bicycle safety skills
- Depict an understanding of bicycle safety skills
- Demonstrate an understanding of correct helmet fit and can describe the basic bike safety equipment
- Conduct an experiment to determine how helmets protect the brain
- Conduct a self-reflection/self-assessment

Materials and resources

- *Getting ready to ride* video (2:16)
- *Proper bike equipment* activity sheet on page 144
- Helmets
- Balloons
- ICBC statistics on deaths/injuries related to bicycle crashes
- *Balloon brain* activity sheet, page 142
- Handouts to take home:
  - *Children and bicycles: not a toy, but a first vehicle...* handout on page 146 and 147
  - *Scooters, skates, and boards* handout on page 148 and 149
  - Bike Sense manual (online resource available for B.C. cyclists from http://www.bikesense.bc.ca/)

Reflect and connect

Did you know that each year, nearly 1,000 people die from injuries sustained in bicycle crashes, with head injuries accounting for more than 75% of these deaths? (Consumer Reports, 1990.) An effective way to prevent head injury from these accidents is to use bicycle helmets. You only have one head and you need it!

- Who has a helmet? What colour is it? Is it reflective?
- Who has ever cycled to school?
- Ask students similar questions about scooters, inline skates and skateboards

Watch and Listen

Video 2: *Getting ready to ride* video (2:16)

Dante introduces rules for safe bike riding, including how to use brakes and ride without wobbling. He shows how to use the shoulder check and hand signals to indicate when a bike is stopping or changing directions. He then talks about safe route planning to avoid busy streets and to be aware of where the crosswalks and traffic lights are situated.

Reflect and connect

Before going out on your bike, what skills do you need to ride safely? Know how to:

- Use your brakes for slowing down and stopping
- Shoulder-check: look over your shoulder to check beside and behind while riding in a straight line
- Communicate with hand signals, voice and/or a bell
- Make a turn: the steps include shoulder-check, signal, shoulder-check again, look left, look right and then look again towards where you're riding
- Plan your route using a map and/or what you know about your neighbourhood. Choose quiet roads. Plan to cross at major streets at traffic lights or pedestrian-controlled crosswalks. Try to avoid rush hour traffic.

What are the hand signals?

- Stop — Left arm outstretched, bent at elbow with forearm and hand pointing down, wide palm facing drivers
- Left turn — Left arm outstretched, pointing in the direction you are turning, wide palm facing forward

- Right turn — Right arm outstretched, pointing in the direction you are turning, wide palm facing forward
- Alternate right turn — Left arm outstretched, bent at elbow with forearm and hand pointing up, wide palm facing forward

What's the purpose of the alternate right turn?

- Although this isn't used often, it's worth knowing that it's possible to make a right-turn signal with the left arm. Some cycling manuals suggest this signal because it can be more easily seen by drivers, because a cyclist's left hand is closer to the sight line of an approaching driver.

When getting ready to ride a bike, what do you need to be wearing?

- A bike helmet that fits properly — it's the law
- No hood, hat, or baseball cap underneath the helmet — it interferes with proper helmet fit and peripheral vision
- Closed shoes — no open toes, flip-flops or bare feet, and laces and pant cuffs secured — that way they won't get caught in the chain

Reflect and connect

- What is the most important organ in your body? (Answer: Your brain.)
- What are some things your brain controls? (Answer: Higher functions like thinking memory and emotion, but also basic physical functions like breathing, heartbeat, balance and sensation.)
- What happens if you hit your head during a bicycle crash? (Answer: Your brain may be hurt.)
- Is your skull enough to protect your brain from the impacts that can occur in a bicycle crash?
- What is the purpose of a well-fitting bicycle helmet? (Answer: A bicycle helmet is specifically designed to protect your brain from impacts with a car, tree or pavement.)
- Why may a poorly adjusted helmet not protect your head as well? (Answer: Because it might slip around your head, might leave some parts exposed, might fall off during a crash.)

What does a helmet do?

- 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

Helmet tips

- Only buy a helmet that meets a standard (for example, 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 a bright colour — you want to be seen
- Choose a helmet with adjustable straps and a quick release buckle. Always buckle the straps. A helmet that 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

Did you know?

Did you know that each year on average 2,000 people are injured from bicycle crashes, with head injuries accounting for more than 60% of these injuries? An effective way to prevent head injury from these accidents is to use bicycle helmets. Did you know that, under the *Motor Vehicle Act*, a person operating a bicycle:

- Must not ride on a sidewalk unless authorized by a bylaw made under section 124 or unless otherwise directed by a sign
- Must not, for the purpose of crossing a highway, ride on a crosswalk unless authorized to do so by a bylaw made under section 124 or unless otherwise directed by a sign
- Must ride as near as practicable to the right side of the highway
- Must not ride abreast of another person operating a cycle on the roadway
- Must keep at least one hand on the handlebars
- Must not ride other than on or astride a regular seat of the cycle
- Must not use the cycle to carry more persons at one time than the number for which it is designed and equipped
- Must not ride a cycle, skateboard, roller skates, inline roller skates, sled, play vehicle or other similar means of conveyance when it is attached by the arm and hand of the rider or otherwise to a vehicle on a highway

- Commits an offence if that person operates or rides as a passenger on a cycle on a highway and is not properly wearing a bicycle safety helmet
- On a highway between 1/2 hour after sunset and 1/2 hour before sunrise must have the following equipment:
  - A lighted lamp mounted on the front and under normal atmospheric conditions capable of displaying a white light visible at least 150 metres in the direction the cycle is pointed
  - A red reflector of a make or design approved by the Insurance Corporation of British Columbia for the purposes of this section
  - A lighted lamp, mounted and visible to the rear, displaying a red light

Experiment — Balloon Brain

Have a few of the students bring their helmets into the classroom or borrow helmets from a local bicycle store. Organize students into teams of four. Give each team a helmet, two balloons and an experiment worksheet. Explain that they are going to conduct an experiment to determine the effects of wearing a helmet. Students will drop a water balloon without a helmet from shoulder height, and then a balloon with a helmet from shoulder height. Have the students predict the results.

Procedure

- Give teams an experiment worksheet
- Have them complete the question (purpose) of the experiment, the hypothesis (what they predict the results will show), the materials needed and the procedure
- Have the students fill one balloon with water. Have them use a marker to draw a face on balloon brain. In the schoolyard, have them drop the balloon brain from shoulder height onto the pavement.
- Have the students fill a second balloon with water until it fits snugly inside a helmet. Draw a face on the balloon and do up the strap snugly. In the schoolyard, have them drop the balloon brain from shoulder height onto the pavement.
- Record the results on the worksheet and the conclusion (what they learned from the experiment)
- Have teams share their results and what they learned

Activity sheet — Balloon brain

Question (purpose of the experiment, what we wonder)

Hypothesis (what we predict will happen, what the results will be)

Materials (what do you need to conduct the experiment)

Procedure (the steps taken to conduct the experiment)

Results (what happened)

Conclusion (what we learned from the experiment)

Reflect and connect

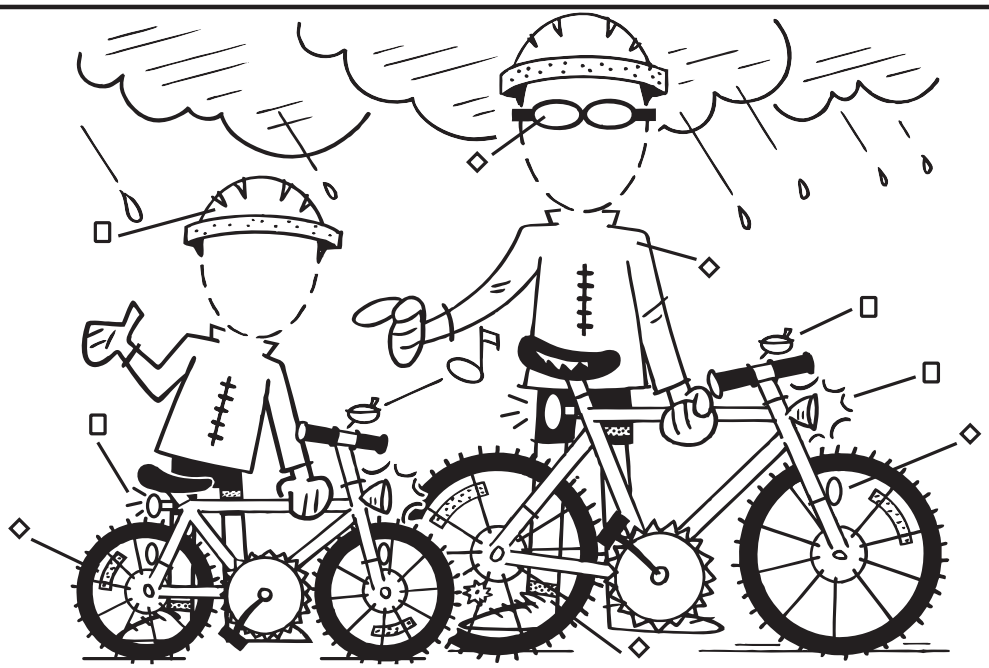
Helmets save lives. They absorb the blow that would otherwise hit the skull — in a collision with a tree, a telephone pole, another vehicle, or the ground when cyclists fall off their bikes. One writer described helmets as "brain buckets for cyclists". In over half of all bicycle incidents, the cyclist's 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 small child.

Distribute handout C8 and have students label the safety components.

Activity sheet

NAME _____ DATE _____

proper bike equipment



word key:

ankle band reflector	safety glasses	red rear reflector	reflective clothing	helmet
white front light	rear red light	front reflector	side reflector	bell

Go beyond

- Invite a senior student to demonstrate some of what was shown in the video and allow students to ask questions
- Invite a cyclist to visit your class with their bike to demonstrate correct helmet fit and safe cycling equipment
  - To be effective, the bicycle helmet must fit correctly and be worn properly; when in doubt, check with a bike shop for the proper adjustment of an approved cycling helmet
  - To test if the helmet fits correctly, gently push up at the front/centre to ensure that the forehead remains covered by the helmet
- Invite a skateboarder to come in and bring their skateboard helmet and demonstrate correct fit — have these senior students compare the helmets and ask your students why the helmets are not the same
- Have the cyclist and skateboarder pretend to ride their bike/skateboard and then simulate a fall
  - A skater will tend to fall backwards and a cyclist will tend to fall forward, which is why skaters' helmets are designed to provide more protection for the back of the head

Self-assessment/self-reflection

Have the students complete a self-assessment/self-reflection. Have students write a short reflective writing piece about a bicycle safety rule they learned from the videos that they had not been aware of.

- Summarize the rule
- Why is it important?
- What are the possible consequences if the rule is not followed?
- What will they do differently next time they go riding?

Children and bicycles: not a toy, but a first vehicle…

Even if a child can balance on the bike and ride in a straight line, it may be too soon for him or her to go on a busy road. Generally, children under nine or 10 lack the decision-making skills to be safe cyclists and should not ride on busy roads without an accompanying adult. You can prepare children to be safe cyclists by helping them practise riding skills and teaching them about safety equipment and the rules of the road. The following information can help. (see also www.bikesense.bc.ca)

A bicycle must be the right size

- A child should be able to straddle the bike with both feet flat on the ground.
- The seat should be at hip height when the child stands beside the bike.
- Beginners should be able to put both feet on the ground while sitting on the seat.
- While a child is seated and has both feet on the pedals, the low pedal leg should be bent slightly at the knee.

Bicycle safety equipment

- In B.C., all cyclists are required by law to wear an approved helmet. Helmets should meet Snell, ANSI, or CSA standards. Bicycle helmets differ from skateboard helmets. If falling, a skater will tend to fall backwards and a cyclist will tend to fall forward, which is why skaters' helmets are designed to provide more protection for the back of the head.
- Helmet must fit squarely and snug, on top of the head not slanting forward or backward.
- A visible cyclist is a safer cyclist. Light or reflective clothing makes riders easier to see.
- If a child's bike has no chain guard, tuck pant leg into socks or use a pant leg clip.
- A child's bike should have: a horn or bell, rear red light or reflector, and a white front light (for riding at twilight, at night, and in poor weather conditions).

Learning to ride

Beginners

- The safest place to learn to balance and steer a bike is away from the road.
- Before learning to go on the road, a child should be able to ride in a straight line, ride at different speeds, turn, stop, make a shoulder check (i.e., look back over their shoulder while continuing to ride in a straight line), signal while riding, and be able to make emergency stops.
- Supervised practice is the safest way to learn.

Cycling on the road

- Stop and look before cycling out of a driveway or lane. The majority of children's bicycle crashes are caused by the child riding out onto a road without looking.
- Ride single file.
- Keep to the right as much as is safe and practicable.
- Never carry passengers on a bike.
- Look behind for traffic before signalling.
- Make correct turning and stopping signals (left turn, right turn, slowing/stop).
- Obey rules of the road.
- Shoulder check at regular intervals.
- Keep both hands on the handlebars unless signalling.
- Obey all traffic signs and signals.
- Yield the right-of-way to pedestrians.
- When passing another cyclist, look behind for approaching traffic and use a bell, horn, or voice to indicate you are about to pass.

To shoulder check

1. Keep both hands on the handlebars and scan backwards over the left shoulder for traffic.
2. If the way is clear, signal and proceed with the turn, still shoulder checking.
3. If traffic will obstruct the turn, wait until the way is clear, then check again and if still clear, proceed.

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 cyclists mistakenly think that the signal is like a magic wand and that drivers will see the signal and automatically stay out of the way.

Scooters, skates, and boards

With so many different styles of recreational travel—scooters, skateboards, and in-line skates—it's important to play safe while enjoying these fun activities. As kids across the country rediscover these fun and speedy means of transportation, injuries are on the rise.

Did you know?

In-line skaters can travel fast. Falling at a speed of 20 km/h can result in death.

Over half of in-line skaters, scooters, and skateboarders are injured because they lose control and fall.

Children age eight and under should not use scooters without close adult supervision.

Get trained

- Check with a recreation facility in your community to find out where you can learn to skate or scooter. If no courses are available, ask a good skater for some basic tips.
- Learn how to control your speed and turns, and how to brake and stop quickly. Be prepared to fall. It happens to even the most experienced riders!
- Before using your scooter, in-line skates or skateboard, check thoroughly for hazards such as:
  - loose, broken, or cracked parts
  - sharp edges on metal boards
  - slippery top surface
  - wheels with nicks and cracks. Defects should be corrected by a qualified repairperson.

Look first

- Watch out for vehicles, cyclists and rough or slippery surfaces.
- ALWAYS yield to pedestrians.
- Skate on the right: pass pedestrians, cyclists and other skaters on their left.
- Alert people as you approach: call out "passing on your left", "passing on your right", etc.
- Know the dangers of the driveway. Always stop before crossing a driveway obscured by bushes or a fence, scan by looking left, ahead, right and then left again. The driveway is a dangerous intersection that can pose a safety risk.

Where to roll?

- Use your scooter, in-line skates or skateboard only where it's safe and legal in your community: designated roadways in parks, bicycle paths, etc.
- Do not skate or scooter after dark.
- Avoid water, oil, sand, or gravel surfaces.
- Keep your equipment in good working order.
- Never hitch a ride from a vehicle, bus, truck, or bicycle.
- Limit use of your scooter or skateboard to one person at a time.
- Use caution when going downhill. If a steep hill is encountered, walk, don't ride to the bottom.

What to wear?

Always wear the right gear to avoid injuries. Be sure protective gear fits properly and does not interfere with your movement, vision or hearing.

- Helmets can reduce the risk of head injury by 85 per cent. Because skaters tend to fall backwards and cyclists tend to fall forward, skaters' helmets are designed to provide more protection for the back of the head. It's recommended you wear helmets specially designed for in-line skating. Check the label on your helmet, make sure it is ASTM, SNELL or ANSI rated.
- Wrist guards distribute the forces of impact during a slide, reducing injury. Try to fall forward, and keep your hands in front of you.
- Knee and elbow pads distribute the impact of the fall much like wrist guards and allow you to slide safely. If you start to fall, drop to your knees and hold your hands out in front.

Be smart

Learn the basics of your skateboard, in-line skates or scooter.

- Always wear protective gear.
- Watch for hazards.

Riding for real

Time requirement

This learning plan will take two sessions to complete.

Inquiry question

What does it mean to be a safe cyclist? What hazards do cyclists face? What are the rules of the road? What are the most common cyclist injuries? How might they be prevented?

Learning objectives

Students will:

- Determine prior knowledge
- Identify rules of the road
- Identify safe ride scenarios
- Complete a self-assessment/self-reflection

Materials and resources

- *Because statement* activity sheet on page 157
- *Picture a rule* activity sheet on page 160
- Videos
  - *Bike handling skills* (2:34 min.)
  - *Riding for real* (2:49 min.)
  - *Riding for real* (1:44 min.)

Watch and listen

Video 1: *Riding for real* (2:49 min.)

Tiara focuses on safe biking with friends, pointing out the dangers of parked cars, and looking out for inattentive drivers. Children show safe cycling by riding in single file, hands on the handlebars, and moving in the same direction as the traffic and what to do when at a crosswalk or turning.

Reflect and connect

When riding your bicycle, what are the key points to remember?

- Follow all traffic signs — the rules of the road are the same for bikes and cars
- Ride on bike paths, or on the right side of the road
- Ride 1 metre from parked cars, or 1 metre from the curb to avoid storm drains and debris at the side of the road
- Pay attention — be prepared for the unexpected. Always be ready to stop.
- Be aware of car doors that might open into your path, and for pedestrians who might step out into the road to cross
- Keep both hands on handlebars (unless you're signalling) with two fingers over the brake levers
- Ride in a predictable straight line so that other road users know what to expect — don't ride up on sidewalks or wobble
- When biking with friends, ride in single file
- Think for yourself, even when riding with a friend or adult
- Don't assume that drivers or pedestrians can see you, even if you can see them
- Communicate before stopping or changing direction — use your hand signals, a bell and/or your voice ("passing on your left")
- At crosswalks, it's safest to get off your bike and walk across as a pedestrian
- Make eye contact with drivers at intersections before you cross to make sure that they can see you
- When you're walking or biking make sure that cars have stopped in ALL lanes before proceeding

Watch and listen

Video 2: *Bike handling skills* (2:34 min.)

Tiara and children show safe bike skills (braking, shoulder checks, using hand signals, and riding in a straight line). Children are encouraged to pay attention to where they're going and to always let others know what they're doing by using hand signals, voice and bell.

Reflect and connect

Before going for a ride, what do you need to ride safely?

Know how to:

- Use your brakes for slowing down and stopping
- Shoulder-check: look over your shoulder to check beside and behind while riding in a straight line
- Communicate with hand signals, voice and/or a bell
- Make a turn: the steps include shoulder-check, signal, shoulder-check again, look left, look right and then look again towards where you're riding

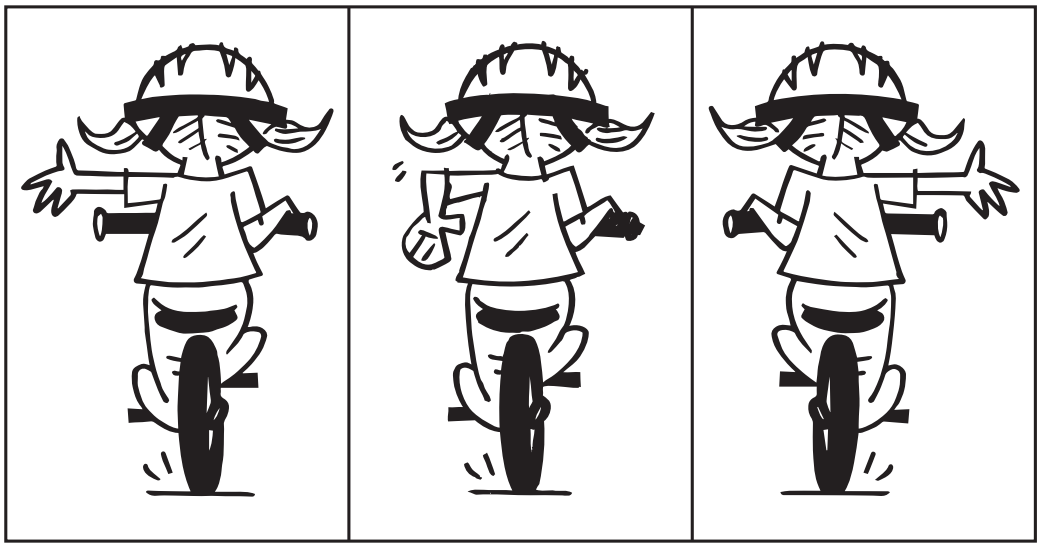
What are the hand signals?

- Stop — Left arm outstretched, bent at elbow with forearm and hand pointing down, wide palm facing drivers
- Left turn — Left arm outstretched, pointing in the direction you are turning, wide palm facing forward
- Right turn — Right arm outstretched, pointing in the direction you're turning, wide palm facing forward

Activity sheet

NAME _____ DATE _____

getting ready to ride



left **stopping/slowing** **right**

Watch and listen

Video 3: *Riding for Real* (1:43 min.)

Dante explains how to ride safely, showing ways of being safe and courteous while biking. Dante also reminds children to look out for the unexpected (like a ball rolling onto the bike path, or drivers not paying attention). He talks about how important hand signals and shoulder checks are, and how to cross at crosswalks.

Reflect and connect

When riding your bicycle, what are the key points you must keep in mind?

- Ride on bike paths, or on the right side of the road
- Pay attention — always expect the unexpected and be ready to stop
- Keep both hands on handlebars (unless you're signalling) with two fingers over the brake levers so you're ready to stop in an emergency or if something unexpected occurs
- Ride in a predictable straight line so that other road users will know what to expect — don't ride up on sidewalks or wobble
- When biking with friends, ride in single file
- Think for yourself, even when riding with a friend or adult
- Don't assume that drivers or pedestrians can see you, even if you can see them
- Communicate before you stop or change direction — use your hand signals, a bell and/or your voice ("passing on your left")
- At crosswalks, it's safest to get off your bike and walk across as a pedestrian
- Make eye contact with drivers at intersections before you cross to make sure that they see you
- When you're walking or biking make sure that cars have stopped in ALL lanes before proceeding

Experience — Hand signals

- Review the bicycle riding hand signals
- Review the steps to making a shoulder check before making a turn (for example, look over your shoulder to check beside and behind while continuing to ride forward in a straight line — not zig-zagging)
- Play Simon Says to practise the hand signals

Question and investigate

Brainstorm bicycle safety rules. Write each one on a chart or on the board. For example:

- Make sure your bike is the right size for you
- Always wear a helmet and shoes
- Wear bright clothing so people can see you
- Ride on the right side of the road
- Ride single file
- Obey traffic signs
- Use hand signals
- Always shoulder-check or look all ways before you move
- Give the right-of-way to pedestrians

Brainstorm distractions while cycling

- Wearing headphones
- Steering the bicycle one-handed while carrying something in the other hand
- Talking to your friend who is also on a bicycle while riding in traffic

Ask questions about why the rules are important for safety.

- Why do you need to wear a helmet? What could happen if you don't? How should you wear it? Why should you never buy a second-hand helmet?
- What is a concussion? What happens to your brain when you have a concussion?
- Why do you need to bike a safe distance from parked cars? Why do you need to ride about 1 metre from the curb?
- What do you need to think about when you cross railroad or streetcar tracks on your bike?
- Why's it a good idea to get off your bike and use your traffic-safety skills for walking when you cross a street at a crosswalk?
- Why it is important that your bike is the right size for you?
  - You may not be able to put your feet on the ground and may fall
  - You may not be able to balance properly if you have trouble reaching the pedals
  - You may have trouble stopping because you cannot reach the hand brake lever
- Discuss what bike injuries could happen if the safety rules are not followed
- Are the rules the same for scooters, inline skates and skateboards?

Discuss Hazardous road conditions

- Narrow streets, no bike lanes: ride as far to the right as possible
- Walk your bike through busy intersections
- Obstructions to visibility (curves, grades, corners): Ride slowly. Keep scanning. Ride or walk your bike on the sidewalk if you can.
- Poor lighting conditions (darkness, bright sunlight, glare of headlights): Avoid riding at night whenever possible, but if you must, be certain you have the required front light and rear reflectors. Also wear light-coloured clothing: a reflective vest is a wise investment.
- Bad weather (rain, sleet, fog, snow): Just as motorists do, slow down for these conditions and make sure you're visible with appropriate clothing and equipment. Allow extra time for brakes to work and realize that motorists cannot see well in bad weather conditions.
- Railroad tracks: Railroad tracks should always be crossed at a 90-degree angle. Any other angle may cause your bike tire to get caught in the rail. Be sure traffic is clear before crossing.
- Loose surfaces (gravel, leaves, dust, sand, snow), slick surfaces (water, mud, wet metal, wet paint, wet wood, oil, ice): Slow down. If these conditions are unavoidable, be sure your turns are made before or after you cross them so you and your bike won't go down on them.
- Raised surfaces or objects (metal plates, lane markers, reflectors, raised driveways): Keep an eye on the road in front of you as well as on the traffic around you. Always scan.
- Holes (potholes, entrances, drains, grates): Scan the ground ahead in order to turn away from these problems. Be careful riding through puddles; sometimes there are potholes underneath. If time or traffic doesn't allow turning, a quick jump by squatting down and then pulling up on the handlebars can get you over one of these obstacles.
- Sharp objects (glass, sharp rocks, pins, staples, wire, sharp pieces of metal): If you are forced to ride over sharp objects, stop your bike and clean the tire to avoid a puncture in your tire tube.

Explore, reflect and connect

Have students complete the *because statement* activity sheet on page 157 for using the bicycle safety rules.

Activity sheet — Because statement

I wear my helmet	Because....

I plan my route	Because....

I signal left and signal right	Because....

I walk my bike when crossing the road	Because....

I don't assume that driver or pedestrians can see me, even if I can see them	Because....

I use white in the front and red in the back and read rear reflectors	Because....

I use a bell or horn to warn other cyclists and pedestrians that I am coming	Because....

I wear clothes in bright colours or with reflective materials for rainy weather, dark days or evenings	Because....

Activity sheet — Because statement, continued

	Because....

	Because....

	Because....

	Because....

	Because....

	Because....

Reflect, connect, extend

Revisit the Venn diagram from Activity 1. Have the students add to the column — what I have learned.

Experience — picture a rule

- Complete the *picture a rule* activity sheet on page 160

Self-assessment/self-reflection

Have the students complete a self-assessment/self-reflection. Have students write a short reflective writing piece about a bicycle safety rule they learned from the videos that they had not been aware of.

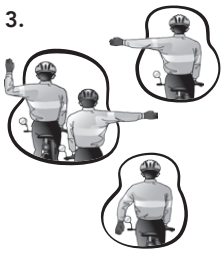
- Summarize the rule
- Why is it important?
- What are the possible consequences if the rule is not followed?
- What will they do differently next time they go riding?

Activity sheet

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. 	_____ _____ _____ _____	5. 	_____ _____ _____ _____
2. 	_____ _____ _____ _____	6. 	_____ _____ _____ _____
3. 	_____ _____ _____ _____	7. 	_____ _____ _____ _____
4. 	_____ _____ _____ _____	8.	Draw your own rule _____ _____ _____

Healthy travel

Time requirement

This learning plan will take one session to complete.

Inquiry question

What are the health and environmental advantages of riding a bicycle instead of driving in a vehicle?

Learning objectives

Students will:

- Estimate the cost of being driven to and from school each day
- Explore the effects vehicles have on the environment

Materials and resources

- Statistics on vehicle carbon dioxide emissions in Canada
- Statistics on vehicle pollution in Canada

Reflect and connect

Have students brainstorm all the reasons they can think of for choosing to bicycle to school instead of ride in a vehicle. (health and physical activity benefits, reducing pollution….)

Write the following words on the board or chart paper.

- Environment
- Transportation
- Pollution
- Traffic jam
- Greenhouse effect

Discuss that riding to school provides physical health and environmental benefits by:

- Providing exercise for the rider
- Reducing traffic congestion
- Reducing noise and air pollution
- Reducing greenhouse emissions

Explore, investigate, reflect and connect

Discuss how using alternative forms of transportation is something people can do to protect the environment. Explain that auto exhaust is one of biggest contributors of air pollution. Have students suggest non-polluting changes we could make in our community to make it easier to bike to school.

Discuss the health and environmental advantages of riding a bicycle instead or driving a vehicle to school. Health professionals recommend at least 30 minutes of moderate-intensity physical activity each day. This is enough to maintain good health, even if the exercise is broken up into short 10-minute bursts. Riding to school or taking your bike on short neighbourhood trips is a convenient and practical way to incorporate regular exercise into your day.

Did you know that automobiles account for about 30–40% of the county's total carbon dioxide emissions? Carbon dioxide is the main contributor to the greenhouse effect — the slow warming of the earth's atmosphere. Bike riding uses minimal fossil fuels and is a pollution-free mode of transport. Bikes reduce the need to build, service and dispose of cars. Cycling 10 kilometres would save 1,500 kilograms of greenhouse gas emissions each year.

By biking to school, you help keep our air clean by decreasing the amount of air pollution. When just one person bikes to work or school for a year instead of driving, our lungs and our planet are saved from 78 pounds of pollution. The more people use bicycles, the cleaner our air will be.

Look at the school parking lot. If bicycles were used instead, how much more space would there be for playgrounds or a school garden?

HASTeBC

Investigate

Have students estimate the cost of being driven to and from school each day.

- Estimate daily round-trip commute kilometres
- Multiply daily round-trip commute kilometres by five (five school days in a week)
- Multiply the weekly kilometres by four to get an average monthly kilometres
- Estimate monthly vehicle costs (price of a vehicle or monthly payments, gas, insurance, repairs, etc.)
- Then estimate the cost of a bicycle and bicycle repairs

Note: The family car costs up to 55 cents per kilometre to run. In comparison, the cost of buying and maintaining a bike is around 1% of the cost of buying and maintaining a car.

Safe bicycle route to school

Time requirement

This learning plan will take two sessions to complete.

Inquiry question

How can I use planning to reduce risk?

Learning objectives

Students will:

- Choose between two options for the better/safer cycling route to school
- Plan the journey to school as a means of reducing risk
- Identify cardinal points (north, south, east and west) and use them on a map
- Engage in problem-solving to help find the best cycling route from home to school
- Understand and document safe cycling practices that are new to the students
- Create a checklist/chart to assess which route has the lower risk

Materials/resources

- *Pedestrian safety skills* activity sheet, on page 167 and 168
- *Safe route to school checklist* on page page 169
- Map of neighbourhood between home and school (city map, school district map, Google maps, etc.)
- Colour markers or highlighters

Reflect and connect

- *Pedestrian safety skills* activity sheet, on page 167 and 168
- Ask students to look over the list to identify which of the items are already known to them, and which of the items list pedestrian safety skills that are new to them
- As a class, discuss some of these new skills — what do the students think they have risked by not knowing these rules?

- Are the rules the same for bicyclists?
- What other rules should be considered when on bike, for example, walking bikes across a crosswalk?

Explore

Introduce the topic of risk assessment, and explain to the students that risk assessment involves three steps:

- Identifying things that could cause harm (hazards)
- Assessing how likely these are to actually happen and how bad/severe the consequences could be (the risk)
- Looking for ways to minimize the risks, or make them smaller
  - Is it possible to eliminate any of the risks completely?

Explore and Experience

Explain that you will be asking the students to compare two bicycle routes to school.

Note: If students are not able to bike to school, the assignment could be to determine a best walking route to a destination near to the school or home.

If students live very close to school (e.g., there is only one road linking their home to the school), they could be asked to assess a best route to the library or other destination.

Students may work individually, or in pairs with a student who lives very close to them.

- Distribute neighbourhood maps, or have the student retrieve a map from a municipal or online source
- Internet mapping sites have begun integrating bicycling as an option when one needs enters a location for directions
- Begin by mapping two possible bicycle routes between home and school. (They may have completed this activity in unit 2 — pedestrian safety. If so, they can revisit their map and review it to see if they would make any changes with a bicycle.)
- List the stages for each option, for example:
  - Bike along _____ Street
  - Use the crossing at _____ Street
  - Bike through _____ Park
  - Turn north at the corner of _____ Street and continue biking

- Create a checklist/chart to assess which route has the lower risk due to a combination of:
  - The presence of sidewalks
  - A barrier or space between the sidewalk and traffic (e.g., a grass verge, bushes, parked cars)
  - Crosswalks
  - Pedestrian lights
  - Slower traffic speeds
  - Lighter traffic volume

Activity sheet — Pedestrian safety skills

before crossing a street	
❑ seek to cross at a traffic light or a crosswalk	❑ obey all traffic signals
❑ never cross mid-block even if a friend calls to you to cross over	❑ always STOP, LOOK, LISTEN and LOOK AGAIN
❑ wait a step back from the curb	❑ look left, look right, look left again to double-check
❑ make eye contact with drivers and cyclists — and wait until they have stopped — before crossing	❑ wear bright / reflective clothes if walking in the evening or in the rain

while crossing	
❑ watch out for cars turning a corner, or entering and exiting a laneway	❑ while crossing, continue to look left, right and then left again to double-check for turning traffic
❑ make eye-contact with drivers before crossing to ensure they see you and they have stopped	❑ walk — don't run — in a straight line
❑ remove headphones or put your phone conversation on hold	

when at a pedestrian-controlled crossing	
❑ don't assume that a walk signal or green light means that the cars will automatically stop	❑ don't walk until all traffic has stopped

Activity sheet — Pedestrian safety skills, continued

when crossing a multi-lane street	
❑ make eye-contact with drivers in EACH lane	❑ while crossing, check that drivers in EACH lane see you and have stopped before you step into that next lane
❑ don't assume all drivers are paying attention — just because one driver has stopped it is not a guarantee that all other drivers will stop too	

when crossing an intersection with a traffic circle	
❑ never take short cuts across a traffic circle	❑ do not walk diagonally across the centre

when walking along roads without sidewalks	
❑ walk on the left side of the road to see (and be seen by) traffic	❑ walk in a single file — don't fool around or shove
❑ stay safely away from trucks because truck drivers have limited visibility and trucks require extra space for turning	❑ walk a safe distance from the road away from the traffic
❑ be aware of ditches and other hazards	

when crossing railway tracks and crossings
❑ be cautious

Activity sheet — Safe route to school checklist

How cyclable is the route to school?

1. Did you have room to bike?
   - ❑ Yes
   - ❑ Some problems
     - ❑ No dedicated bike lanes
     - ❑ Bike lanes were shared with traffic
     - ❑ The route was blocked with poles, signs, trees, garbage cans, etc.
     - ❑ No paths or shoulders
     - ❑ Too much traffic
     - ❑ Something else _____
     - ❑ Location of problems _____
2. Was it easy to cross streets?
   - ❑ Yes
   - ❑ Some problems
     - ❑ Traffic signals too long or did not give enough time to cross
     - ❑ No traffic signals
     - ❑ No crossing guards
     - ❑ Parked cars blocked view of traffic
     - ❑ Trees, plants, poles or garbage cans blocked view of traffic
     - ❑ Too much traffic
     - ❑ Something else _____
     - ❑ Location of problems _____
3. Did drivers behave well?
   - ❑ Yes
   - ❑ Some problems
     - ❑ Backed out of driveway without looking
     - ❑ Did not yield to pedestrians crossing the street
     - ❑ Drove too fast
     - ❑ Made a right turn without checking for pedestrians
     - ❑ Drove through traffic light
     - ❑ Something else _____
     - ❑ Location of problems _____ Did drivers behave well?

Activity sheet — Safe route to school checklist, continued

4. Was your bicycle ride pleasant?
   - ❑ Yes
   - ❑ Some problems
     - ❑ Barking, scary dogs
     - ❑ Scary people
     - ❑ Scary traffic
     - ❑ Not well-lit
     - ❑ Litter or other garbage
     - ❑ Poor air quality due to traffic exhaust
     - ❑ Something else _____
     - ❑ Location of problems _____

Question and Investigate

Ask students to consider other factors they need to be aware of in their community (e.g., bears, trucks, highways) and add them to their list.

- Encourage the students to bike along both routes with their parent or guardian to confirm and itemize the list of risk-assessment factors, and discuss the two options
- Encourage students to also consider local information and sources of support along both routes: friends' homes, dogs not bound by leash or yard, cautionary places to avoid, etc.
- Encourage students to notice the sounds of nature and be mindful of what the surroundings are, and to show gratitude for the outdoors
- Have students assess both routes and identify the place/location on both routes in which they (and/or their parents) consider to have the highest risk of danger; identify the risks
- Ask students to discuss which of the school access points are safest, away from vehicle drop-off and pickup locations
- Have students draw a final map presenting their decision as to which is the better route along with a short outline of the key factors in the assessment and identifying the risks they discovered

Develop, design and present

Invite students to present their maps to the class and discuss some of the factors involved in making the decision:

- Was it difficult to choose between the two routes?
- What is the distance for each route?
- Who has the longest/shortest distance to school?
- If both routes seemed similar, what was the deciding factor?
- How did their parent or guardian contribute to the decision?
- Did the presentations draw attention to specific items/places along the routes that they believe require attention from the municipality/region (e.g., add a crosswalk here, add a stop light here). Did more than one presentation find the same risks?
- Obtain feedback from classmates and then revisit their maps and edit/update their maps

Go beyond

- Buddy with a Grade 2 class and have the students share and discuss their maps and a safe biking route to school
- In groups of three or four, have students write a persuasive letter to the city identifying risks and a potential solution to the risks they identified on their way biking to school (e.g., add a crosswalk here, add a stop light here)
- HASTEBC resources
  - Parent Advisory Council Presentation
  - Regular Walk and Wheel to School Program
  - School Site Walkabout
  - School Travel Survey

Unit review

Time requirement

This learning plan will take two sessions to complete.

Inquiry question

What have I learned about bicycle safety and my responsibility to myself and others?

Learning objectives

Students will:

- Correctly identify and explain the rationale for each of the bike safety skills
- Participate in a talking circle
- Conduct a self-reflection
- Conduct a self-assessment

Reflect and Connect (you will need a beach ball and strips of paper)

Brainstorm with the class what they learned in this unit and have them turn what they have learned into questions. Write all the questions they brainstorm on pieces of paper and give each student one or two.

Have the students form a large circle. Grab a beach ball and toss it to one of the students. Ask the student one of the brainstormed questions. The student answers the question and then tosses the ball to another student and asks one of the prepared questions. Continue this process as time allows.

Possible questions:

- What is one thing you learned in this unit?
- Why should you wear a bicycle helmet?
- Why do you need to wear a helmet? How should you wear it? Why should you never buy a second-hand helmet?
- Why do you need to bike a safe distance from parked cars? Why do you need to ride about 1 metre from the curb?

- What do you need to think about when you cross railroad or streetcar tracks on your bike?
- Why is it a good idea to get off your bike and use your traffic-safety skills for walking when you cross a street at a crosswalk?
- Why are there two versions of a right-turn hand signal?

Speaking to Communicate

Review with students that a talking circle is used with some First People to create a safe environment in which participants can share their point of view with others. It is an opportunity to learn to listen and respect the views of others. The intention is to open hearts to understand and connect with one another.

Have the students sit in a circle. The circle represents completeness. Place a talking object (e.g., feather, rock, stick) in the middle of the circle. Explain the rules:

- Everyone's contribution is equally important
- State what you feel or believe starting with 'I statements', e.g., 'I feel …'
- All comments must be addressed directly to the question or the issue, not to comments that another person has made
- When a person has the talking object, it is their turn to share thoughts, without interruption, and others have the responsibility to listen
- The talking object is then passed to the next person in a clockwise direction
- If someone does not want to speak, they pass the talking object to the next person

Talking circle topic: What is one important thing you learned about being a safe cyclist? Why is it important to follow the rules?

Self-reflection

I used to think… But now, I think…

This thinking routine helps students reflect on *how and why* their thinking about a topic has changed. To begin, ask students to consider what "I used to think…" to explain their initial opinions and/or beliefs about traffic safety. Then prompt students to share how their thinking has shifted, starting with "But now, I think…" Ask students to elaborate on why their thinking has changed.

Self-assessment

Have students write a short reflective writing piece about what they learned in this unit about being a safe cyclist, about the hazards cyclists face, about wearing safety equipment and making safe choices.

Campaign for bicycle safety

Time requirement

This learning plan will take two sessions to complete.

Inquiry question

How can I protect myself and others from potentially hazardous cycling situations? What can I do to campaign for a bike safe route to school?

Learning objectives

Students will:

- Conduct a survey to determine causes of bicycle crashes
- Collaboratively develop a strategy and write a slogan and a persuasive presentation for it, to raise awareness and advocate for cyclist safety with an aim to promote the safety of oneself and others
- Correctly identify and explain the rationale for each of the bike safety skills
- Design posters that demonstrate an understanding of safety rules

Materials and resources

- Posters that advertise and advocate for bicycle safety. Example:
  - Family bike riding wearing helmets
  - Child signalling
  - Child walking bike across the road

Collaborate, explore and analyze

Place the students in groups of three or four. On a large piece of poster paper, have the groups brainstorm why injures occur on bikes, skateboards, scooters, etc. List all the ideas they can think of. Next, have the groups review their ideas and highlight the most common reasons to report to the class. They can gather online research.

Explain to students that most contributing factors of bicycle crashes can be grouped into three categories:

- Lack of skills or knowledge
- Unsafe behaviour (cyclist and driver)
- A hazard in the environment

Give each student a survey sheet. Ask them to poll family, friends, classmates and other children in the school during recess and noon.

Explore, analyze, reflect and connect

Calculate

Calculate — or have the students calculate — the percentage of unsafe bicycle practices from this sample, or create a bar graph with the data.

Activity sheet

On a bicycle	tally	Reason (category 1, 2 or 3)
Hit another object when riding		
Fallen from a bike when riding		
Been injured after falling from a bike		
Been injured when riding on a road		
Been injured when riding off the road		
Been injured by a car when riding		
On a skateboard or scooter		
Hit another object when riding		
Fallen from a skateboard or scooter		
Been injured after falling from a skateboard or scooter		
Been injured when riding on a road		
Been injured when riding off the road		
Been injured by a car when riding on the road		

Explore, design and present

Campaign for bicycle safety. Using their knowledge of injuries related to bicycle, scooter, and skateboard crashes, have students create PSAs to persuade people to wear helmets when bicycle riding, and wear helmets and safety equipment when skateboarding or riding a scooter. Ride safe!

- Explain to the class that Public Service Announcements (PSAs) are messages, often in the form of TV commercials, that share a message about health or safety concerning the general public. Show some samples from the PSA website. Discuss how making the public aware might change people's attitudes and behaviour.
- Show the students some advertisements advocating for bicycle safety. Ask students to consider how effective these advertisements are and who they might appeal to. Ask students if they think any of these advertisements change perceptions about helmet wearing and other bicycle safety rules.
- Explain that students will be working in pairs or small groups to produce a PSA
- Make a display of the PSAs in the school reception area for parents or create online versions and share them through the school website, email newsletter or social media. You could also invite parents to a special assembly and present your advertisements. You could display the posters in the community.

Extensions

Read the Cree story Small Number and the Skateboard Park about how math is part of the world around us.

- Make up a board game based on the rules of the road
- In a physical science class, discuss the physics of gears, brakes, wheels and levers, etc.
- Invite a local bike shop mechanic to come in and demonstrate correct helmet fit and safety check for bicycles
- Use the bicycle safety equipment vocabulary in a spelling quiz or charades game
- Organize a bike-to-school day; have parent helpers at the school to help students lock up their bikes
- Have students create a video "infomercial" explaining their project (use some basic footage of the site to eliminate the need for the student groups to be on site when filming)
- Have students adapt their project into a comic book or a flip book

Feedback and suggestions?

- ICBC welcomes your questions, suggestions, and feedback at learningresourcefeedback@icbc.com.