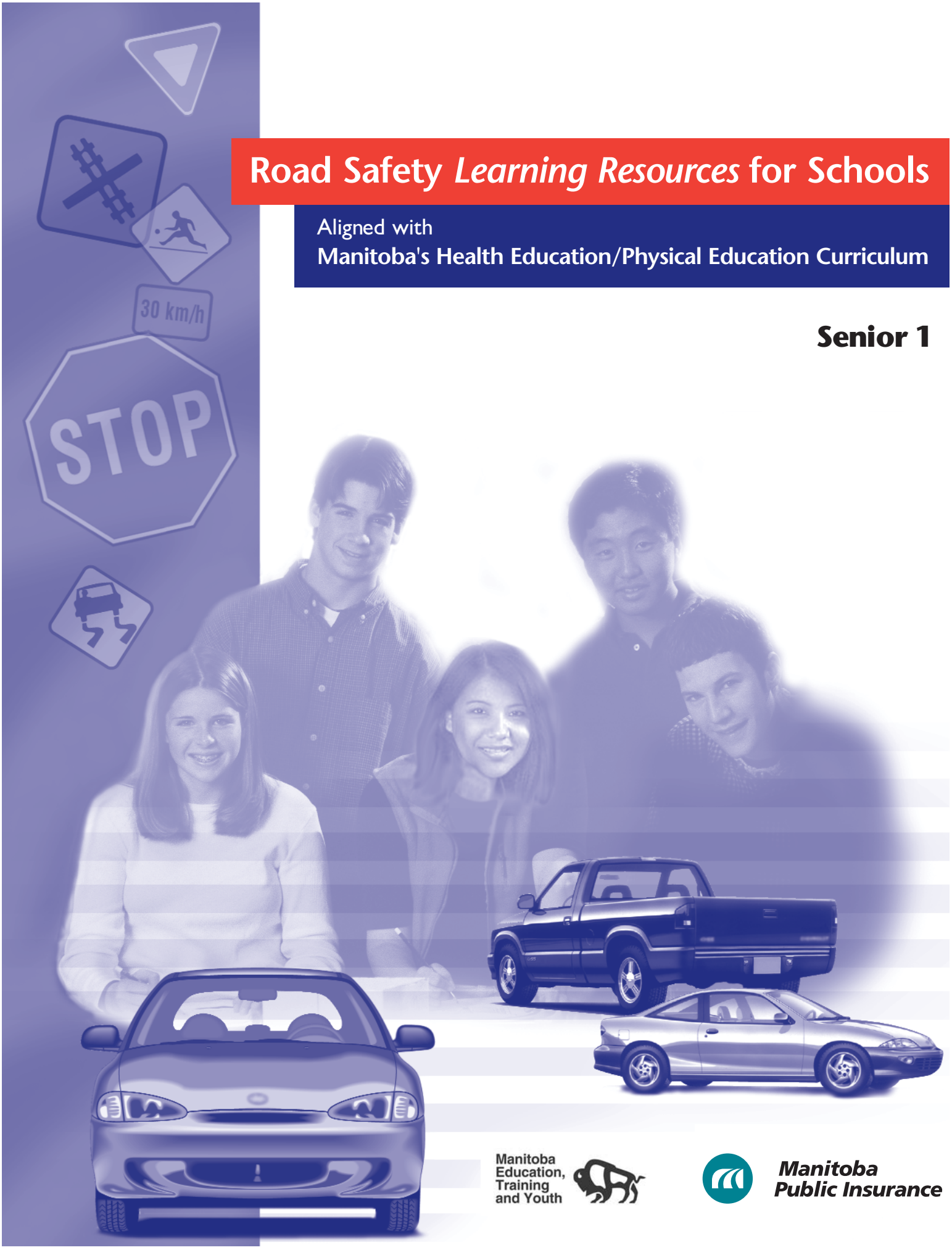
Road Safety *Learning Resources* for Schools

Aligned with
Manitoba's Health Education/Physical Education Curriculum

Senior 1



Manitoba Education, Training and Youth

Manitoba Public Insurance

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Many people within MPI, MET & Y and the wider professional community have contributed immensely to this program.

In particular, we would like to express our special thanks to the following:

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Our special thanks go to all the students and teachers who participated in piloting the materials in the classrooms. Their feedback has contributed immensely to the development of a more teacher/student user-friendly resource package for Manitoba Schools.

Stay Safe at all times,

Paul Allen
Manager, Road Safety Department
Manitoba Public Insurance

GRADE S1

TABLE OF CONTENTS

NOTE: Subject-specific Grade S1 teachers are encouraged to review the learning activities and insert the activities and their accompanying resources into relevant curricula to be taught throughout the school year.

INTRODUCTION

We are delighted to welcome you and your class to partake in the school-based road safety learning program. This program is a continuation of the Children's Traffic Club, which is now available in day care centres across Manitoba.

Unfortunately, the leading cause of death and injury for children 5 – 14 years of age in Manitoba is road-related. In many instances, simple precautions could have prevented the occurrence and severity of such incidents.

Research studies have shown that children's perceptions and sensory skills may sometimes put them at a disadvantage in traffic situations. In most instances, young children:

- Experience difficulties in judging speed and distance
- Assume that cars can stop instantly
- Have difficulty discriminating the direction of sounds
- Cannot perceive complicated traffic situations
- Think that if they can see a vehicle, then the driver can see them
- Have a lack of well-developed "peripheral vision"
- Concentrate on what interests them the most at a particular time

In order to reduce the potential risks that our children face on the roads, they must be taught to appreciate their role, rights and responsibilities with respect to their safety on our roads and in other related situations. This resource is designed to help educators provide students with the knowledge, skills and attitudes that will enable them to achieve the aforementioned objectives.

The Road Safety Program includes a series of learning activities and accompanying visuals and student worksheets. The learning activities reflect differentiated instruction (see *Success for All Learners*).

A Road Safety Scope and Sequence Matrix is provided. This matrix explains the "fit" between the Road Safety Learning Activities and relevant sections of the *Kindergarten to Senior 4 Physical Education / Health Education: Manitoba Curriculum Framework of Outcomes for Active Healthy Lifestyles*. There is a box in the bottom right-hand corner beside every specific Student Learning Outcome (SLO) that identifies the number of the learning activity or activities that addresses part or all of the SLO.

Teachers are to note that **not** all road safety content may be applicable to every community. Teachers are advised to use professional discretion in the selection of content. It is advisable to check what is taught of road safety in the previous grade.

Suggestions for Assessment are provided for every learning activity. There is a Teacher Road Safety Checklist provided at the end of each grade. This checklist can be used for ongoing observations and to determine student progress for assessment purposes. When planning their assessment, teachers are advised to refer to *Kindergarten to Senior 4 Physical Education/Health Education: Manitoba Curriculum Framework of Outcomes for Active Healthy Lifestyles, Appendix A: Assessment, Evaluation and Reporting*.

Road Safety is one aspect of the Safety General Student Learning Outcome #3 in the Framework document. The time allotted to teach Health Education in the classroom is limited. Curricular connections are provided for each learning activity. It is recommended that teachers use curricular connections in order to cover all the Road Safety Learning Activities. Teachers may wish to use some of the learning activities as Take-Home Activities for students to complete with their families. Road Safety is an ongoing concern and teachers are encouraged to review this topic with students on a seasonal basis.

This Road Safety Program provides teachers with a valuable, user-friendly resource that enhances the teaching of a topic that is important to daily living and active, healthy lifestyles.

SENIOR ONE
ROAD SAFETY
SCOPE and SEQUENCE

LEGEND

Number(s) of Learning Activity or Activities that address part or all of SLOs.

Content/ Curricular Connections	SAFETY General Student Learning Outcome (GLO) #3	Complementary GLOs	
		Personal and Social Management #4	Healthy Lifestyle Practices #5
	Specific Student Learning Outcomes (SLOs)	SLOs	SLOs
Knowledge: Strand A Physical Activity Risk Management 5. Alternative Pursuits (Science) a) Selected activities	q K.3.S1.A.5a Investigate potential safety risks inherent in selected alternative pursuits (e.g. ski hills, activities on ice and roads). Activities 1, 2, 3 and 6	**Knowledge:** Strand A Physical Development 3. Decision-Making/ Problem-Solving process (ELA and Science) qK.4.S1.A.3 Examine factors (e.g. family, values, health knowledge, peer influence, media, social trends, requirements, costs) that affect making decisions by self and/or others for active healthy lifestyles and/or career building Activities 1, 2, 3 and 6	

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ROAD SAFETY
SCOPE and SEQUENCE

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		Personal and Social Management #4	Healthy Lifestyle Practices #5
	Specific Student Learning Outcomes (SLOs)	SLOs	SLOs
Strand A Physical Activity Risk Management (continued)		Strand B Social Development 1. Social Responsibility (Social Studies and ELA) qK.4.S1.B.1a Describe ways to treat others (e.g. show respect, consideration, support, encouragement, affection, understanding, forgiveness) for the development of healthy and meaningful relationships (e.g. between parent/child, siblings, best friends, romantic relationships, marriage, at work, in the community). Activities 2 and 6 4. Avoidance and Refusal Skills (ELA) qK.4.S1.B.4 Identify examples of potentially dangerous situations (e.g. physical abuse, verbal abuse, harmful substances, peer pressure) and effective strategies for avoidance/refusal. Activities 2 and 6	

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SCOPE and SEQUENCE

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		Personal and Social Management #4	Healthy Lifestyle Practices #5
	Specific Student Learning Outcomes (SLOs)	**SLOs**	**SLOs**
Knowledge: Strand B Safety of Self and Others 1. Community Safety Awareness (Social Studies)	qK.3.S1.B.1 Evaluate the effectiveness of laws and policies that promote personal and community safety (e.g. driving age, drinking/driving, boating, domestic violence, vandalism, shaken baby syndrome). Activity 4		
4. Community Supports and Services (Social Studies)	qK.3.S1.B.4 Demonstrate the ability to access valid health information and health-promoting products and services available in the community (e.g. doctors, public health nurses, health agencies and associations related to road safety, youth advocates, school/community counselling programs, ombudsperson, Internet). Activities 1 and 5		3. Factors Affecting Substance Use q K.5.S1.D.3 Identify community agencies and resources available to support (e.g. addictions counselling services) the prevention of substance use and abuse. Activity 5

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ROAD SAFETY
SCOPE and SEQUENCE

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		Personal and Social Management #4	Healthy Lifestyle Practices #5
	Specific Student Learning Outcomes (SLOs)	SLOs	SLOs
Skills: Strand A Acquisition of Safety Practices… 1. Physical Activity	qS.3.S1.A.1 Apply rules and procedures for safe and responsible participation and use of equipment in selected, specific physical activities and environments (e.g., self-regulation, teamwork, promotion of fair play and inclusion). Activities 2 and 6		

ACTIVITY 1 Potential Driving Risks

Prescribed Learning Outcomes:
Safety SLOs:

K.3.S1.A.5a **Investigate potential safety risks inherent in selected alternative pursuits (e.g. ski hills, activities on ice and roads).**

K.3.S1.B.4 **Demonstrate the ability to access valid health information and health-promoting products and services available in the community (e.g. health agencies and associations related to road safety, youth advocates, Internet).**

Complementary SLOs:

K.4.S1.A.3 **Examine factors (e.g. family, values, health knowledge, peer influence, media, costs) that affect making decisions by self and/or others for active healthy lifestyles and/or career building.**

Activity Outcomes:
Students will be able to:

- Identify potential driving risks facing motor vehicle passengers and drivers.
- Demonstrate how to access valid health information and health-promoting products and services in the community that support motor vehicle drivers and passengers.
- Describe factors that affect motor vehicle driving.

Suggestions for Instruction:

NOTE:

1) Students need to be familiar with research skills, Internet use and oral presentations.
2) This activity may take 140-180 minutes.
3) The teacher may encourage students to select road safety issues relevant to their community.
4) Teachers may refer students to the list of Canadian Traffic Safety Web Sites included in this activity. For a current listing refer to CARSP/ACPSER – Canadian Traffic Safety Web Sites or http://www.cyberus.ca/~carsp/links_ca.htm

- Explain to students that this activity focuses on content related to motor vehicle ridership (responsible passenger) and obtaining a driver's licence.
- Introduce the topic by asking students the following True or False questions; or by reading a relevant newspaper article or poem on this topic. Be sensitive to the nature of the topic and students' experiences.

True or False Questions:

1) The leading cause of death for children/youth aged 16-19 years is motor vehicle collisions. (True. Source: Transport Canada-Child Injury Division, Health Protection Branch, Health Canada www.trafficinjuryresearch.com/faq/faq.htm)
2) Road conditions, the driver and the motor vehicle are all basics in safe motor vehicle driving. (True)
3) Age affects the driver's coordination and vision. (True. Young drivers have quick reflexes and better vision than older drivers. Young drivers have more collisions though, due to less driving experience and under-developed judgement related to driving.)

4) Nicotine and caffeine may affect a person's driving ability. (True. They are both stimulants.)

5) Joy and fear cannot affect a driver's alertness, concentration and decision making. (False)

6) If a driver has only had one or 2 alcoholic drinks, s/he is fine to drive. (False. Never drink and drive.)

7) A driver's visual acuity refers to his/her ability to distinguish details at a distance. (False. It refers to the ability to distinguish details up close and at a distance.)

8) The single most effective safety device during a traffic collision is an air bag. (False. A seat belt)

9) Wet leaves on the pavement reduce a motor vehicle's traction. (True)

10) Traction on unpaved roads is greater than on paved roads, especially when the unpaved roads are wet or oil sprayed. (False)

Source for questions 2-10: Today's Driving Manual. Propulsion International Inc., 1995.

- Discuss students' responses briefly.
- Explain that all motor vehicle driving risks can be classified as either *risk conditions or risk behaviours*.
- Ask students to define:
  a) *risk conditions - Definition*: circumstances in the environment (e.g. road surface - wet, gravel, potholes, winter roads) or weather (e.g. rain, fog);
  b) *risk behaviours - Definition*: actions by road users (e.g. speeding, talking on a cell phone).

  NOTE: See Glossary at the end of the unit.
- Explain to students that in pairs or small groups, they will select a topic, design a few questions they want to learn more about, collect information, and give an oral presentation.
- Have students divide into pairs or small groups.
- Present overhead Activity 1 Worksheet A: *Motor vehicle driving/ridership risks*.
- Introduce the Activity 1 Worksheet B1: *Potential motor vehicle driving/ridership risks* as an overhead.
- Explain that each small group will:
  1) select and record the topic for their oral presentation.
  2) design 3 questions that will guide their presentation.
     collect information on the questions from different sources.

     NOTE: Students may use the Internet, books and/or magazines.
  3) write the bibliographic information on sources used.
  4) decide how they will present their oral report to the class.

     NOTE: Students may use visual aids or PowerPoint to accompany their oral presentations.
- Demonstrate how to complete the assignment using Activity 1 Worksheet B2: *Potential motor vehicle driving/ridership risks - Example*.
- Introduce Activity 1 Worksheet C: *Sample evaluation of oral presentation* to students so they are familiar with the assessment rubric for this activity.
- Once students are finished, have the groups present their oral reports to the class.
- Emphasize to students the increased danger of combinations of driving risks, that is, the more driving risks, the greater likelihood of traffic collisions. For example, the higher the volume of music in the motor vehicle and the more passengers in the vehicle, the greater chance of a traffic collision.
- Have students present "Exit-tickets" that reflect on what they learned.

Suggestions for Assessment:

- Ask students to write reflections in their learning logs such as how their knowledge of a topic has changed, or to account for differences in information gathered from various sources used.
- Evaluate other students' oral presentations for content. A sample assessment rubric is provided in Activity 1 Worksheet C: *Sample evaluation of oral presentation.*
- Ask students to explain how they accessed information on their topic.
- Ask students to name factors that affect motor vehicle driving.
- Use the Teacher Road Safety Checklist to assess the students' abilities to identify and describe potential road risks facing motor vehicle drivers and passengers. (See Assessment Tool.)
- Use the Teacher Road Safety Checklist to assess the students' abilities to access valid, health information and health-promoting products and services in the community that support motor vehicle drivers and passengers. (See Assessment Tool.)

Cross-Curricular Connections:

- Physical Education/Health Education (personal and social management)
- English Language Arts (explore thoughts, ideas, feelings and experiences; manage ideas and information; comprehend and respond personally and critically to oral, literary and media texts; enhance the clarity and artistry of communication; celebrate and build community)
- Social Studies (citizenship)

Opportunities for Family/Community Involvement:

- Invite students to share their findings with students in younger grades.
- Invite students to discuss potential road risks facing motor vehicle drivers and passengers with their families.
- Invite first responders (i.e. police officers, RCMP, Band constables) to talk about potential road risks facing motor vehicle drivers and passengers.

Motor vehicle driving/ridership risks

- **Risk conditions:**
  - condition of motor vehicle (e.g. be familiar with the vehicle's instruments, gauges and controls; vehicle maintenance)
  - road conditions (e.g. gravel, narrow bridges, no road shoulders, winter roads)
  - weather conditions (e.g. rain, snow, ice, poor visibility)
  - physical health of driver (e.g. vision, hearing)
  - other physical conditions affecting a person's driving ability (e.g. fatigue, illness, stress and strong emotions that may affect driving ability)

- **Risk behaviours:**
  - driver's attitudes (e.g. safety-conscious versus risk-taking)
  - substance use/abuse (e.g. alcohol-depressant, stimulants, cannabis)
  - passenger attitudes and behaviours
  - peer pressure (e.g. risk-taking to belong to group, on a dare)
  - driving experience (e.g. years of driving experience)
  - driving distractions (e.g. talking on cell phones, listening to radio, friends in motor vehicle, eating, smoking)
  - undesirable driving traits - aggressive driver behaviours (e.g. tailgating, speeding)

- **Graduated Driver Licensing Program** (e.g. what, why, who and consequences)

- **Seat belt use in Manitoba** (e.g. what, why, who and consequences)

- **Auto theft in Manitoba**

Potential motor vehicle driving/ridership risks

Name: _____

Instructions: Complete the worksheet.

TOPIC:

STUDENT QUESTIONS	INFORMATION FOUND	SOURCES

Potential motor vehicle driving/ridership risks - Example

Name: _____

Instructions: Complete the worksheet.

TOPIC: **Aggressive driving as a driving risk behavior**

STUDENT QUESTIONS	INFORMATION FOUND	SOURCES
1. What is meant by "aggressive driving" behaviour?	- aggressive driving behaviour: is deliberate, likely to increase the risk of a traffic collision, motivated by impatience, annoyance, frustration, anger and/or effort to save time - operating a motor vehicle without regard for other people's safety - does not include road rage, which can be viewed as criminal offence	www.aggressive.drivers.com/board/messages/25/49.html
2. What types of driving behaviours does an "aggressive driver" display?	- driving behaviours displayed by aggressive driver include: tailgating, weaving in and out of traffic, improper lane changes, running stop lights and/or stop signs, passing on road shoulder, sustained horn-honking, yelling, rude gesturing, cutting off other drivers	www.aggressive.drivers.com/board/messages/25/49.html www.aloha.net/~dyc/articles/testimony.html
3. What factors determine the likelihood of aggressive driving behaviours being shown?	- relatively young drivers - male - traffic situations where driver has chance to get away with it - aggressive in other social situations - angry driver - believes they possess superior driving skills - progress slowed by unexpected traffic situation - culturally transmitted: "car culture" - learned from parents, peers, media (television, movies), and road experiences - believe significant others approve of such behaviours	www.aggressive.drivers.com/board/messages/25/49.html

Sample evaluation of oral presentation

Instructions: Please rate each evaluation criteria using the Scale:
1 = unsatisfactory 2 = satisfactory
3 = very good 4 = excellent

Name: _____

/ 24 **Content:**

___ Presentation well-organized – good introduction, informative, good conclusion
___ Evidence of detailed preparation
___ Material relevant to topic
___ Language appropriate and interesting
___ Stayed on topic
___ Use of visuals – effective, interesting

/ 24 **Delivery:**

___ All group members involved
___ Words spoken clearly
___ Rate of speech well paced
___ Volume – heard easily
___ Made eye contact with audience
___ Body language – stood straight and confidently

/ 12 **General Impression:**

___ Informative
___ Interesting
___ Creative

Total:

/ 60 marks

Canadian Traffic Safety Sites
Un répertoire de sites Internet canadiens traitant de la sécurité routière

The following links point to Canadian web sites that feature some aspect of traffic safety. Our Association would like to provide the most comprehensive list of such sites in Canada.

Consequently, if you know of a site that meets the criteria, and that we have not already listed, please fill out our on-line form and bring your selection to our attention.

Links are listed alphabetically; letter groups may be selected from the following:

Les hyperliens suivants vous permettent d'accéder à des sites Internet canadiens traitant de divers sujets liés à la sécurité routière. Notre association désirerait offrir la liste la plus complète de ce genre de sites au Canada. Par conséquent, si vous connaissez un site Internet qui rencontre ces critères et qui n'est pas inscrit, s.v.p. nous en aviser en complétant notre formulaire électronique

Les hyperliens sont classes par ordre alphabetique. De plus, ils sont groupes et accessibles suivant la premiere letter du nom du site Internet

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

A

Abbotsford Police Department

Abegweit Driving School Limited

Action Sudbury

Addictions Foundation of Manitoba

Advanced Driving Concepts

Against Drunk Driving, British Columbia

Alberta Centre for Injury Control and Research

Alberta Infrastructure

Alberta Motor Association

Alberta Trucking Association

Alberta Safety Council

Alberta Snowmobile Safety Association

Alcohol Policy Network

AlertDriving.Com

L'Association du camionnage du Québec

Association of Canadian Distillers

Association of Canadian Ergonomists

Association of International Automobile Manufacturers of Canada

Association québécoise du transport et des routes

Atlantic Provinces Trucking Association

Audi

auto123.com

Automobile Protection Association

B

Bacchus Canada

Belleville Police Service

Better Safe Than Sorry Child Safety Journal

Bicycle Newfoundland and Labrador

Bicycle Safety Tips

Bikers Down

Biokinetics and Associates Ltd.

BMW Canada

BMW Club of Canada Le Club BMW du Canada

British Columbia Automobile Association

British Columbia Injury Research and Prevention Unit

British Columbia Ministry of Transportation and Highways

British Columbia Safety Council

British Columbia Trucking Association

Brock University, Sleep Research Lab

Brockville Police Service

Burnaby RCMP

CAA-Québec

Calgary Police Service

Canada Safety Council

Canadian Association of Chiefs of Police

Canadian Association of Road Safety Professionals

Canadian Association of Technical Accident Investigators and Reconstructionists

Canadian Automobile Association

Canadian Automotive Rescue Society

Canadian Centre for Occupational Health and Safety

Canadian Centre on Substance Abuse

Canadian Coalition on Child Passenger Safety

Coalition canadienne pour la sécurité des enfants â bord d'une automobile

Canadian Council of Motor Transport Administrators

Canadian Council of Snowmobile Organizations

Canadian Driver

Canadian Hospitals Injury Reporting and Prevention Program

Canadian Motor Vehicle Arbitration Plan

Canadian Vehicle Manufacturers' Association

Canadian Motorcycle Association

Canadians For Safe and Sober Driving/ADD

Canadians for Responsible and Safe Highways

Canadian Institute for Health Information

Canadian Institute of Transportation Engineers

Canadian Street Rod Association

Canadian Traffic Education Centre

Canadian Transportation Equipment Association

Canadian Trucking Human Resources Council

Canadian Youth Against Impaired Driving

CANUTEC, Canadian Transport Emergency Centre

CarClick.com

Central Island Highway Patrol

Centre for Transportation Engineering & Planning, University of Calgary

Chariots.com

Chatham-Kent Police Service

CHIRPP Injury Reports

Citizens for Safe Cycling

Collision Analysis (Calgary) Ltd.

Commercial Vehicle Safety Alliance

Commission des transports du Québec

Compendium de données sur la mobilité automobile/Automobile Mobility Data Compendium

Coquitlam RCMP

C R Tyner & Associates Ltd

CSA International

Cycling BC

D

Daewoo Auto Canada Inc

DaimlerChrysler Canada

Dalhousie University DalTech, Vehicle Safety Research Team

Dangerous Goods, Transport Canada

Delta Police Department

Direction 2006

Discovery.ca Car Safety

Drinking and Driving, Worsley School

Driver Competency Assessment Protocols

Drivers.com

Driving School Association of Ontario

The Driving School Association of the Americas

Durham Regional Police Service

E

École Polytechnique de Montréal, Équipe de Sécurité Routière

Earning Your Wheels

Edmonton Bicycle Commuters' Society

Edmonton Police Service

Éduc'alcool

Electric Vehicle Association of Canada

Elgie Bus Lines Limited

Elmer the Safety Elephant/Elmer l'Éléphant prudent

Environment Canada

Esquimalt Police and Fire Department

Extreme Attitudes Against Drinking and Driving

F

La Fédération des clubs de motoneigistes du Québec

Fifty-Five Alive/Mature Driving

Ford Motor Company of Canada Limited

Forensic Engineering Inc.

Fredericton Police Department

free2drive

G

General Motors of Canada

Graham Ryan Consulting Ltd.

Groupe de recherche interdisciplinaire mobilité, environnement, sécurité

Guelph Police Service

Le Guide de l'Auto

H

Haliburton County Snowmobile Association

Halton Regional Police Service

Hamilton Road Safety Group

Health Canada Child Injury Division

Health in Action

Heavy Duty Distributor Council

Highway Star Magazine

Honda Canada

Hovey Accident Investigation Services Ltd.

Human Factors North Inc.

I

I Promise Program

Infiniti Canada

L'Institut de la sécurité routière

Industry Canada, Automotive and Transportation Branch

injuryfreezone

Intech Engineering Ltd.

International Road Dynamics Inc.

Insurance Bureau of Canada

Insurance Corporation of British Columbia

Insurance Information Centre of Canada/Centre d'information en assurances du Canada

iTRANS Consulting

ITS Canada

J

Jaguar Canada

Joint Program in Transportation, University of Toronto

K

Kelowna Transportation Division

Kia Canada Inc.

KidSafe Connection

Kids Safety Awareness Society

Kim Richardson Transportation Specialists

Kingston Police

L

Land Rover

Langley RCMP

Lexus Canada

London Police Service

L-P Tardif & Associates

M

MacInnis Engineering Associates

Manitoba Cycling Association

Manitoba Highways and Transportation

Manitoba Public Insurance

Manitoba Safety Council

Manitoba Trucking Association

Mazda Canada

Mercedes-Benz Canada

La Monographie Scientifique du Groupe de Travail Québécois sur les Troubles Associés à l'Entorse Cervicale/

Scientific Monograph of the Quebec Task Force on Whiplash-Associated Disorders

Mothers Against Drunk Driving

Motoring 2000

N

Nanaimo RCMP

National Research Centre, Centre for Surface Transportation Technology

Nelson City Police

Nepean's Drinking and Driving Site

New Brunswick Department of Transportation

New Brunswick Federation of Snowmobile Clubs

Newfoundland and Labrador Works, Services & Transportation

Newfoundland & Labrador Snowmobile Federation

Newfoundland Safety Council

New Westminster Police Service

Niagara Regional Police Service

Nissan Canada

Normie's S.T.O.P. Scrap Book

North Vancouver RCMP

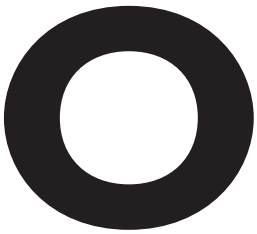
Northwest Territories Transportation

Nova Scotia Registry of Motor Vehicles

Nova Scotia Safety Council

Nova Scotia Transportation & Public Works

Nunavut Community Government and Transportation



Ontario Association of Chiefs of Police

Ontario Coalition for Better Cycling

Ontario Community Council on Impaired Driving

Ontario Cycling Association

Ontario Federation of Snowmobile Clubs

Ontario Good Roads Association

Ontario Public Health Association

Ontario Ministry of Health and Long-Term Care

Ontario Ministry of Transportation

Ontario Provincial Police

Ontario Traffic Conference

Ontario Trauma Registry

Ontario Trucking Association

Ontario Safety League

Ontario Students Against Impaired Driving

Operation Lifesaver/Opération Gareautrain

Operation Lookout

Opération Nez Rouge

Ottawa-Carleton Safety Council Motorcycle Courses

City of Ottawa Transportation

OttawaRiders.com

P

Pacific Infant/Child Restraint Advisory Committee

Pacific Traffic Education Centre

Peel Regional Police

Penticton RCMP

People Against Impaired Driving

PMG Technologies

Population & Community Health Unit

Porsche Cars North America Inc.

Port Alberni RCMP

Port Moody Police Department

Prince Edward Island Transportation and Public Works

Prince George RCMP

Prince Rupert RCMP

Private Motor Truck Council of Canada

Project Earth Risk Identification Lifeline (PERIL)

Q

Québec Ministère des Transports

Queen's University, BLEVE Research

R

Race Against Impaired Driving Team

Racing Against Drugs

Rail Safety, Transport Canada/Sécurité ferroviaire, Transports Canada

Railway Association of Canada/l'Association des chemins de fer du Canada

R.E.A.L.^{2} (Really Excited About Leadership and Life) Conference on Traffic Safety

Rick Hansen Institute

Rid Roads of Impaired Drivers

Road Safety, Transport Canada/Sécurité routière, Transports Canada

Road Safety Educators' Association

Road Watch

Royal Canadian Mounted Police/La Gendarmerie royale du Canada

Ryerson Polytechnic University, Vehicle Safety Research Centre

S

Saanich Police Department

Safe Grad Manitoba/Teens Against Drinking and Driving Manitoba

Safe Kids Canada

Safe Start

Safety on Zones (SOZ)

Saskatchewan Government Insurance

Saskatchewan Highways and Transportation

Saskatchewan Institute on Prevention of Handicaps

Saskatchewan Cycling Association

Saskatchewan Safety Council

Saskatoon Police Service

Scott Bus Lines Limited

SECURE School Bus Safety Program

Smart Risk Foundation

Snap, Buckle, Drive

SNOMAN (Snowmobilers of Manitoba) Inc.

Snowmobile Trail Officer Patrol

Snowmobilers Association of Nova Scotia

Société de l'assurance automobile du Québec

South Island Highway Patrol

Standards Council of Canada

Standing Senate Committee on Transport and Communications

Stratford Police Service

Street Legal, Edmonton Police Service

Street Legal, Saskatchewan

Students Against Drinking and Driving, Alberta

Students Against Drinking and Driving, Father Mercredi High School, Fort McMurray

Students Against Drinking and Driving, Saskatchewan

Students Against Drinking and Driving, St. Mary's High School, Vegreville, Alberta

Subaru Canada Online

Sudbury Regional Police Service

Sumas Highway Patrol

Sunnybrook Health Science Centre Trauma Program

Sûreté du Québec

Suzuki Canada Inc.

Swift Current Regional Highway Patrol

T

Target Risk

Today's Trucking

Toronto Against Impaired Driving

Toronto Police Traffic Services

Toyota Canada

Traffic Injury Research Foundation

Traffic Safety in Alberta

Traffic Safety Information Village

Transport Canada/Transports Canada

Transportation Association of Canada

Transportation Development Centre

Transportation Health & Safety Association of Ontario

TRIMAP Communications Inc.

Truck News

U

UMA Group Ltd.

Université de Montréal, Centre de recherche sur les transports

University of Manitoba Transport Information Group

University of New Brunswick, Transportation Group

University of Saskatchewan, Transportation Centre

University of Western Ontario, Multi-Disciplinary Accident Research Team

V

Vancouver Island Safety Council

Vancouver Police Department Traffic Services Squad

Vehicle Information Centre of Canada

Velo New Brunswick Cycling Information

Vélo Québec

Victoria Transport Policy Institute

Volkswagen

Volvo Canada

W

Waterloo Regional Police Service

WAY TO GO! School Program

West Vancouver Police

Wheel Monitor Inc.

Winnipeg Police Service

World of Wheels

X

Missing linx !

Y

Young Drivers

Yukon Community & Transportation Services

Z

More missing linkz !

While we try to ensure that the links to Canadian traffic safety sites are current, the Internet is very dynamic and site addresses may change between our verification checks. Please notify our Web Master of any broken links.

Bien que nous nous efforçons de tenir à jour les hyperliens qui permettent d'accéder aux sites Internet canadiens de sécurité routière, l'Internet évolue très rapidement et les adresses des sites peuvent changer entre nos vérifications périodiques. Le cas échéant, s.v.p. aviser notre Maître du site de tout problème rencontré avec les hyperliens.

The Canadian Association of Road Safety Professionals
L'Association canadienne des professionnels de la sécurité routière

http://www.cyberus.ca/~carsp/acpser.htm

ACTIVITY 2 How to Handle Driving Risks

Prescribed Learning Outcomes:
Safety SLOs:

K.3.S1.A.5a **Investigate potential safety risks inherent in selected alternative pursuits (e.g. ski hills, activities on ice and roads).**

S.3.S1.A.1 **Apply rules and procedures for safe and responsible participation and use of equipment in selected, specific physical activities and environments (e.g. self-regulation, teamwork).**

Complementary SLOs:

K.4.S1.A.3 **Examine factors (e.g. family, values, health knowledge, peer influence, media, costs) that affect making decisions by self and/or others for active healthy lifestyles and/or career building.**

K.4.S1.B.1a **Describe ways to treat others (e.g. show respect, consideration, support, encouragement, understanding) for the development of healthy and meaningful relationships (e.g. between parent/child, siblings, best friends, at work, in the community).**

K.4.S1.B.4 **Identify examples of potentially dangerous situations (e.g. physical abuse, verbal abuse, harmful substances, peer pressure) and effective strategies for avoidance/refusal.**

Activity Outcomes:
Students will be able to:

- Identify potential driving risks facing motor vehicle passengers and drivers.
- Describe responsible decisions that reflect safe driving in different scenarios.
- Describe factors that affect motor vehicle driving.
- Describe examples of potentially dangerous driving situations involving peer pressure, and effective strategies for avoidance and refusal.

Suggestions for Instruction:

NOTE: Students need to be familiar with assertiveness skills.

- Introduce the topic by presenting overheads of Activity 2 Worksheets A and B: *Driving scenarios*.
- Read each motor vehicle driving scenario and the 3 different responses on the overhead.
  Process: 1) Designate and label three corners of the classroom as 1, 2 and 3.
  2) Read the given scenarios.
  3) After each scenario, ask students to move to that corner of the room (1, 2 or 3) that most closely represents their own response to the situation.
  4) Students in each corner form a group and develop reasons for their selected responses.
  5) Each group presents their reasons for choosing the behaviour.

- Ask students if they know the names of the 3 types of behaviours discussed.
  (Answers:
  1) *aggressive* - try to get one's own way at the expense of others' feelings and possible negative consequences
  2) *assertive* – stand up for yourself, be honest, respect yourself and others' opinions
  3) *passive* – allow others to make decisions for you and not say what you really think or feel)
- Ask students to name factors that affect our driving decisions.
  (Possible answers:
  a) friends
  b) attitude about oneself (e.g. confident, independent)
  c) emotions
  d) role models
  e) skills/experiences
  g) family beliefs and values
  h) media and advertising)
- Discuss effective strategies for avoiding or refusing a dangerous driving situation using the 2 overheads and the handout, Activity 2 Worksheet C: *12 ways to say no*.
- Ask for a group of students to volunteer to role play assertive strategies for handling the 2 scenarios from Activity 2 Worksheets A and B: *Driving scenarios*.
- Explain to students that they are going to write driving scenarios that focus on a specific aspect of driver behaviour.
- Divide students into small groups.
- Have each group design a driving scenario on one of the topics listed below.
  1) speeding
  2) tailgating
  3) seat belt use
  4) driving distractions (e.g. radio, cell phones, smoking, eating)
  5) drinking and driving
  6) negative driving attitude (e.g. not giving the right-of-way to pedestrians, not being courteous, getting angry or frustrated easily)

  NOTE: Driving scenarios must include peer pressure directed at the drivers.
- Write the following questions on the chalkboard or a flipchart.
  For the written scenario, each group is to prepare responses to the following questions:
  1) What are the driving risks?
  2) What factors affect the driver's decision?
  3) What are all the driver's choices and the possible consequences?
  4) What would you, as the driver, say and do?
- Have groups switch their driving scenarios with other groups.

  HINT: Encourage students to refer to the handout of Activity 2 Worksheet C: *12 ways to say no* when deciding how to handle the written driving scenarios.
- Have each group role play the scenario it was given.
- Discuss any issues arising from these written scenarios as a class.
- Optional follow-up: Have students do a creative writing assignment (e.g. a poem or short story) that depicts driver and passenger choices and consequences.

Suggestions for Assessment:

- Ask students to name potential road risks facing motor vehicle passengers and drivers.
- Use the Teacher Road Safety Checklist to assess the students' abilities to identify potential road risks facing motor vehicle passengers and drivers. (See Assessment Tool.)
- Observe students' responses during group discussions.
- Use the Teacher Road Safety Checklist to assess if students make responsible decisions that reflect safe driving in different scenarios. (See Assessment Tool.)
- Ask students to describe assertive ways to handle peer pressure in different driving scenarios.
- Use the Teacher Road Safety Checklist to assess students' knowledge of effective strategies for avoiding/refusing (assertive behaviours) peer pressure. (See Assessment Tool.)
- Have students do a self-assessment activity by writing their own short, dramatic scripts on this topic and role playing them.

Cross-Curricular Connections:

- Physical Education/Health Education (personal and social management)
- English Language Arts (explore thoughts, ideas, feelings and information; comprehend and respond personally and critically to oral, literary and media texts; manage ideas and information; enhance the clarity and artistry of communication; celebrate and build community)
- Social Studies (citizenship)
- Law

Opportunities for Family/Community Involvement:

- Invite students to discuss with their friends and siblings how to handle potential driving risks and related peer pressure.
- Invite school peer leadership and/or Natural Helpers training programs to include the topic of how to handle potential driving risks as part of their programs.
- Invite students to contract with their parents, older siblings, and/or friends to use preventive strategies that involve never drinking and driving.

Driving scenarios

A. You are driving home from a party with your friends. A truck passes you and cuts in quickly without signalling, forcing you to brake hard. Your friends start cursing and commenting on the driving skills of the truck driver.

Would you:

1) make an insulting gesture to the truck driver and tailgate his vehicle for awhile?

2) honk your horn and slow down to allow reasonable distance between your car and the truck?

3) think a lot of things, but say or do nothing?

Driving scenarios

B. You are approaching an uncontrolled intersection on your way to play a hockey game. Another car approaches the same intersection on your right. You recognize the driver and passengers as players from the other team. They too are going to the same hockey game. Your friends tell you to race to the intersection and beat these teens to the rink.

Would you:

1) floor it to be the first vehicle through the intersection and arrive at the game first because winning is everything?
2) tell your friends that you'll save the competition for the ice and slow down for the intersection?
3) listen to your friends even though you don't want to, and speed up to get to the intersection and the game first?

12 ways to say no

- Say a simple "no" or "no way" in a convincing (assertive) manner. Repeat several times if necessary. You don't owe anyone an explanation.
- Say "no", state your position and take a stand. (e.g. I made a decision and have a right to my opinion.)
- Send an I-message. Say "no", state your feelings and your reasons. (e.g. I won't go because I get worried that we'll be in a car crash if you drink and drive.)
- Say "no" and add other reasons why the other person should not do it either. (e.g. You know your parents will not want you to drink and drive.)
- Safety in numbers. Find a friend and support each other in resisting peer pressure. (e.g. No, Pat and I agreed not to ride with you if you've been drinking.)
- Use others as an excuse. (e.g. My Mom can always tell when I've been drinking. ... I promised my girlfriend I wouldn't speed.)

Modified from: Insurance Corporation of British Columbia – The Road Sense Package. Grade 10-CAPP

12 ways to say no

- Turn the tables. (e.g. Why are you pressuring me?)
- Agree with the person who is calling you names. (e.g. Yeah I'm a chicken, but I'd rather be a live one!)
- Use humour to calm the situation. (e.g. No thanks, I turn into a maniac when I drink and drive.)
- Suggest other uses for the time and money. (e.g. Instead of going to that party, let's catch that new movie.)
- Use an avoidance tactic. Delay your decision. (e.g. Not now, maybe later.)
- Identify and correct false arguments. (e.g. That's not true… driving after a few beers is not safe.)

Modified from: Insurance Corporation of British Columbia – The Road Sense Package. Grade 10-CAPP

12 ways to say no

- Say a simple "no" or "no way" in a convincing (assertive) manner. Repeat several times if necessary. You don't owe anyone an explanation.
- Say"no", state your position and take a stand. (e.g. I made a decision and have a right to my opinion.)
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- Use others as an excuse. (e.g. My Mom can always tell when I've been drinking. ... I promised my girlfriend I wouldn't speed.)
- Turn the tables. (e.g. Why are you pressuring me?)
- Agree with the person who is calling you names. (e.g. Yeah I'm a chicken, but I'd rather be a live one!)
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- Use an avoidance tactic. Delay your decision. (e.g. Not now, maybe later.)
- Identify and correct false arguments. (e.g. That's not true ... driving after a few beers is not safe.)

Modified from: Insurance Corporation of British Columbia – The Road Sense Package. Grade 10-CAPP

ACTIVITY 3 Human Condition and Traffic Collisions

Prescribed Learning Outcomes:
Safety SLOs:
K.3.S1.A.5a Investigate potential safety risks inherent in selected alternative pursuits (e.g. ski hills, activities on ice and roads).

Complementary SLOs:
K.4.S1.A.3 Examine factors (e.g. family, values, health knowledge, peer influence, media, costs) that affect making decisions by self and/or others for active healthy lifestyles and/or career building.

Activity Outcomes:
Students will be able to:

- Identify potential driving risks involving human condition.
- Examine Manitoba traffic collision statistics to determine driver involvement in traffic collisions by human condition.

Suggestions for Instruction:

NOTE:

1) The teacher may photocopy the worksheets back-to-back.
2) Students need to have an understanding of mathematical reasoning, statistics, linear relations and probability.
3) Students may use a calculator or computer calculator.
4) This learning activity may take 140 minutes.
5) The teacher will need to review with students how to read a table and its components.

- Explain to students that this activity will examine the driving risk-human condition, and its contribution to traffic collisions.
- Introduce Activity 3 Worksheet A: *Drinking and driving* as an overhead.

  NOTE: Cover up the answers on the right-hand side of the overhead.
- Ask students to identify the correct responses to each question and then discuss as a class.

  NOTE: Explanation for answer to #2: Within minutes of drinking, alcohol is in the bloodstream and on its way to every body cell. You have to wait for your liver to burn off the alcohol, which it does at a fixed rate of about one measured drink per hour. However, people of low body weight, the young and the elderly process alcohol at a different rate than this. Activities like showering or drinking coffee may cause a false sense of alertness, but will not lower your blood alcohol content. Eating may slow down the rate of alcohol absorption in the bloodstream and drag out the period of intoxication.
- Introduce Activity 3 Worksheet B1: *What are the fatal facts?* as an overhead.

- Discuss with the class how to read the table.
  (Suggested questions: What is the purpose of this table? What are the column headings? What are the side headings? Where do the lines intersect? What does this tell you? How can you use this information to draw conclusions?)
- Complete the first question on Activity 3 Worksheet B1 as a class.
- Have students complete question 2 on the At-Fault Gauge individually.
- Once students have completed it, discuss the results to question 2.
  NOTE: Discuss how these results support the idea of a Graduated Driver Licensing Program.
- Ask students to complete the worksheet individually or in pairs.
- Once students have completed the worksheet, correct and discuss it as a class using Activity 3 Worksheet B2: *What are the fatal facts? - Answer key.*
- Introduce Activity 3 Worksheet C1: *Traffic collision fatality rates by human condition.*
- Ask students to complete the second worksheet individually or in pairs.
- Once completed, correct and discuss the worksheet as a class using Activity 3 Worksheet C2: *Traffic collision fatality rates by human condition - Answer key.*

Suggestions for Assessment:

- Ask students to list specific human conditions that pose driving risks.
- Use the Teacher Road Safety Checklist to assess the students' knowledge of specific human conditions that posed driving risks. (See Assessment Tool.)
- Correct the worksheet as a class using Activity 3 Worksheet B2: *What are the fatal facts? - Answer key.*
- Correct the worksheet as a class using Activity 3 Worksheet C2: *Traffic collision fatality rates by human condition - Answer key.*
- Use the Teacher Road Safety Checklist to assess the students' knowledge/interpretation of Manitoba traffic collision statistics that relate to driver involvement in traffic collisions by human condition. (See Assessment Tool.)
- Have students design posters displaying graphs of human conditions and traffic collisions and their results, based on the data found in these worksheets.

Cross-Curricular Connections:

- Mathematics (mathematical reasoning; statistics; linear relations; probability)
- English Language Arts (manage ideas and information; comprehend and respond personally and critically to oral, literary and media texts; celebrate and build community)

Opportunities for Family/Community Involvement:

- Invite students to share their learning with their friends and families.
- In school hallways, the Northern Store, the Band office, or the local RCMP detachment office, post the posters prepared by students that graph human conditions and traffic collisions.

Drinking and driving

Instructions: Identify the correct response or responses to each question.

QUESTIONS	ANSWERS
1. Visual/audio clues that a person has been drinking include: a) slurred speech b) loss of balance and coordination c) delayed reaction times d) a and c e) b and c	a,b,c
2. A person is at a party and has 6 beers. S/he finished the last one half an hour ago. The best way for this person to sober up quickly is to: a) take a cold shower b) drink coffee c) eat a plate of pasta d) all of the above e) none of the above	e *see explanation note on page S1-39
3. Which of the following will give a person the highest blood alcohol content? a) 45 ml (1 oz.) of liquor b) 145 ml (5 oz.) of wine c) 354 ml (12 oz.) of beer	a,b,c
4. Which percentage of all drinking drivers are male? a) 25 percent b) 55 percent c) 85 percent	c
5. What percentage of all injuries resulting from motor vehicle collisions in Manitoba are alcohol-related? a) 15 percent b) 25 percent c) 35 percent	b

Modified from: Insurance Corporation of British Columbia – The Road Sense Package. Grade 10-CAPP

What are the fatal facts?

Name: _____

Instructions: Compete the worksheet.

Driver Involvement in Fatal Traffic Collisions by Human Condition and Age Group 1999

HUMAN CONDITION	AGE GROUP										TOTAL
	<16	16-19	20-24	25-34	35-44	45-54	55-64	65-74	75>	NS	
Apparently Normal	1	11	14	18	25	15	17	8	8	0	117
Loss of Consciousness	0	0	0	0	0	0	0	0	0	0	0
Extreme Fatigue/Fell Asleep	0	1	0	0	0	0	0	0	0	0	1
Defective Eyesight	0	0	0	0	0	0	0	0	0	0	0
Defective Hearing	0	0	0	0	0	0	0	0	0	0	0
Medical Disability	0	0	0	0	0	0	0	0	0	0	0
Physical Disability	0	0	0	0	0	0	0	0	0	0	0
Mental Disability	0	0	0	0	0	0	0	0	0	0	0
Mental Confusion	0	0	0	0	0	0	0	0	0	0	0
Sudden Illness	0	0	0	0	0	0	0	1	0	0	1
Ability Impaired by Alcohol	0	4	2	5	1	1	0	0	0	0	13
Ability Impaired by Drugs	0	0	0	0	0	0	0	0	0	0	0
Had Been Drinking/ Suspected Alcohol Use[1]	0	2	1	2	2	2	0	0	0	0	9
Distraction/Inattention	0	0	0	3	0	1	3	2	1	0	10
Exceed Hours of Service	0	0	0	0	0	0	0	0	0	0	0
Total	1	18	17	28	28	19	20	11	9	0	151
At-fault rate/10,000 active licenced drivers	-.-	1.6	0.5	0.8	0.2	0.3	0.4	0.5	0.3	0.0	0.5

1. These statistics are understated and represent only those collisions where alcohol involvement was apparent.
Source: Manitoba Transportation and Government Services. *Traffic Collision Statistics Report 1999*, page 85.

QUESTIONS:

On the chart, notice the last two rows.

1. Consider the numbers in the row titled "Total".
   a. What are the numbers about?

   b. Which age groups have the highest totals?

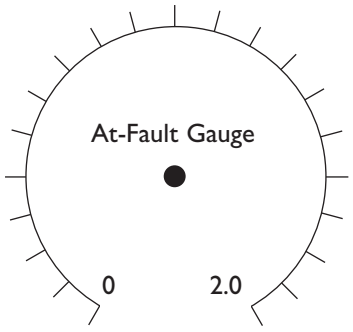
   c. How does the Total for the Age Group 16-19 compare to the other age groups?

Name: _____

d. In one way, it is unfair to compare the Total for an Age Group such as 16-19 with an Age Group such as 25-34, just because of the range in the groups. Explain, and then describe a way that the chart designers could have corrected for that.

2. Consider the numbers in the row titled "At-fault-rate/10,000 active licenced drivers".

a. At-Fault Gauge



Low Risk High Risk

Locate and mark 0.5, 1.0 and 1.5 around the At-Fault Gauge.

Using the figures in the "At-fault rate/1,000 active licenced drivers" row, locate the number on the At-Fault Gauge for the following age groups:

a) 16-19 years b) 20-24 years c) 25-34 years

d) 35-44 years e) 75> years

Follow this procedure for <u>each</u> age group:

i) Use a paper clip as the "needle" for your gauge. Straighten out one end of the paper clip. Insert this end through the dot in the centre of the gauge. Lay the "needle" flat on the gauge.

ii) Use your finger to move the needle on the At-Fault Gauge.

iii) Point the needle at the correct value for the specific age group.

iv) Now mark and label the needle location for the specific age group.

Make a statement that relates the At-fault rate numerical value to the degree of risk.

Name: _____

b. What is the mathematical meaning of those values?

c. The chart does not say how many drivers there are in each age range. However, they needed to know that number to calculate the at-fault rate per 10,000 licenced drivers. They would divide the number of at-fault drivers in fatal traffic collisions by the total number of drivers, and then multiply by 10,000 to get the rate per 10,000 drivers.

Can we calculate the number of drivers from the data in the table? Not really. We know the number of drivers involved in fatal traffic collisions, but not the number who were at fault. Imagine that ALL the drivers listed in the Total row were at-fault, and calculate the number of drivers in each range based on that value. The last one is done below, to demonstrate:

Age 75+ :

$$\text{rate} = \frac{\text{total}}{\text{number of drivers}} \qquad 0.3 = \frac{9}{d}$$

(How do we solve for d? Try an easier question: Suppose it said 6 = 24 /d. How would we find d? We would do 24/6.)

9 /0.3 = d d = 30

30 x 10,000 = 300,000

There are 9 traffic collisions total, with 30 groups of 10,000 drivers in that category (or 300,000 drivers).

Age 16-19:

Age 20-24:

Age 25-34:

Age 35-44:

Name: _____

d. Even though the total number of fatal traffic collisions is lower for ages 45-54 than for ages 35-44, the rate per 10,000 drivers is more. How can this be? Use the specific values you obtained in question 2b to explain.

e. Fatal traffic collisions clearly involve a higher proportion of young drivers than older drivers. Why might that be? Give two reasons.

f. When do the stats suggest that drivers are no longer "young"? In other words, at what age should drivers no longer pay inflated insurance rates because of their age group's traffic collision probabilities?

3. There are two rows of data that suggest that alcohol may have contributed to drivers' involvement in fatal traffic collisions. Add them together.
   a. What percentage of all drivers involved in fatal traffic collisions was affected by alcohol?

   b. What percentage of drivers involved in fatal traffic collisions was not affected by alcohol?

Name: _____

c. How could so many drivers not influenced by alcohol be involved in fatal traffic collisions?

d. How could being affected by alcohol increase the chance of drivers being involved in a collision that is not their fault?

What are the fatal facts? – Answer key

Activity 3 Worksheet B2

Name: _____

Instructions: Compete the worksheet.

Driver Involvement in Fatal Traffic Collisions by Human Condition and Age Group 1999

HUMAN CONDITION	AGE GROUP										TOTAL
	<16	16-19	20-24	25-34	35-44	45-54	55-64	65-74	75>	NS	
Apparently Normal	1	11	14	18	25	15	17	8	8	0	117
Loss of Consciousness	0	0	0	0	0	0	0	0	0	0	0
Extreme Fatigue/Fell Asleep	0	1	0	0	0	0	0	0	0	0	1
Defective Eyesight	0	0	0	0	0	0	0	0	0	0	0
Defective Hearing	0	0	0	0	0	0	0	0	0	0	0
Medical Disability	0	0	0	0	0	0	0	0	0	0	0
Physical Disability	0	0	0	0	0	0	0	0	0	0	0
Mental Disability	0	0	0	0	0	0	0	0	0	0	0
Mental Confusion	0	0	0	0	0	0	0	0	0	0	0
Sudden Illness	0	0	0	0	0	0	0	1	0	0	1
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At-fault rate/10,000 active licenced drivers	-.-	1.6	0.5	0.8	0.2	0.3	0.4	0.5	0.3	0.0	0.5

1. These statistics are understated and represent only those collisions where alcohol involvement was apparent.
Source: Manitoba Transportation and Government Services. *Traffic Collision Statistics Report 1999*, page 85.

QUESTIONS:

On the chart, notice the last two rows.

1. Consider the numbers in the row titled "Total".
   a. What are the numbers about?
   These are the numbers of drivers in each age group involved in a fatal traffic collision.
   b. What age groups have the highest totals?
   Ages 25-34 and 35-44 have the highest totals.
   c. How does the Total for the Age Group 16-19 compare to the other age groups?
   It's less than some, about the same as others, and more than the older groups.

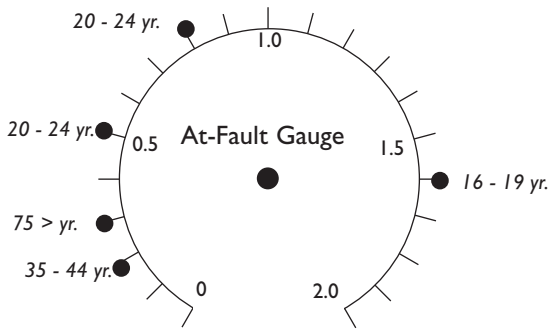
Name: _____

d. In one way, it is unfair to compare the Total for an Age Group such as 16-19 with an Age Group such as 25-34, just because of the range in the groups. Explain, and then describe a way that the chart designers could have corrected for that.

There are only 4 years in the range from age 16 to age 19. There are five years in the next category and at least 10 years in all the others. This means that the 18 deaths in ages 16-19 are actually more per year of age than all the other categories. The chart designers could have made all the categories the same range: either five years (more columns needed) or ten years (no distinction between teen drivers and drivers aged 20-24, and people want to know that).

2. Consider the numbers in the row titled "At-fault-rate/10,000 active licenced drivers".

a. At-Fault Gauge



Low Risk High Risk

Locate and mark 0.5, 1.0 and 1.5 around the At-Fault Gauge.

Using the figures in the "At-fault rate/ 1,000 active licenced drivers" row, locate the number on the At-Fault Gauge for the following age groups:

a) 16-19 years b) 20-24 years c) 25-34 years

d) 35-44 years e) 75> years

Follow this procedure for <u>each</u> age group:

i) Use a paper clip as the "needle" for your gauge. Straighten out one end of the paper clip. Insert this end through the dot in the centre of the gauge. Lay the "needle" flat on the gauge.

ii) Use your finger to move the needle on the At-Fault Gauge

iii) Point the needle at the correct value for the specific age group.

iv) Now mark and label the needle location for the specific age group.

Name: _____

Make a statement that relates the At-fault rate numerical value to the degree of risk.

The lower the at-fault numerical value, the lower the risk of traffic collisions.
The higher the at-fault numerical value, the higher the risk of traffic collisions.

b. What is the mathematical meaning of those values?

Out of 10,000 drivers in that age range, these are the numbers of at-fault drivers involved in fatal traffic collisions. So 1.6 out of 10,000 really young drivers cause a fatal traffic collision. That's small in one way: it means that 9,998.4 drivers didn't cause a fatal traffic collision. It's big in another way: it's double the rate of any other age group.

c. The chart does not say how many drivers there are in each age range. However, they needed to know that number to calculate the at-fault rate per 10,000 licenced drivers. They would divide the number of at-fault drivers in fatal traffic collisions by the total number of drivers, and then multiply by 10,000 to get the rate per 10,000 drivers.

Can we calculate the number of drivers from the data in the table? Not really. We know the number of drivers involved in fatal traffic collisions, but not the number who were at fault. Imagine that ALL the drivers listed in the Total row were at-fault, and calculate the number of drivers in each range based on that value. The last one is done below, to demonstrate:

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(How do we solve for d? Try an easier question: Suppose it said 6 = 24/d. How would we find d? We would do 24/6.)

9/0.3 = d d = 30

30 x 10,000 = 300,000

There are 9 traffic collisions total, with 30 groups of 10,000 drivers in that category (or 300,000 drivers).

Age 16-19: *18 / 1.6 x 10,000 = 112,500 drivers in that age range*

Age 20-24: *17 / 0.5 x 10,000 = 340,000 drivers*

Age 25-34: *28 / 0.8 x 10,000 = 350,000 drivers*

Age 35-44: *28 / 0.2 x 10,000 = 1,400,000 drivers*

Name: _____

d. Even though the total number of fatal traffic collisions is lower for ages 45-54 than for ages 35-44, the rate per 10,000 drivers is more. How can this be? Use the specific values you obtained in question 2b to explain.

Perhaps more of the drivers in this age range who were in fatal traffic collisions were at fault. Perhaps there are fewer total drivers in this category. That's what we found in the arithmetic above. It also makes sense given the limited age-range spanning only four years, and the fact that many more 16-19 year olds haven't gotten their license yet compared to 20-24 year olds.

e. Fatal traffic collisions clearly involve a higher proportion of young drivers than older drivers. Why might that be? Give two reasons.

Perhaps younger drivers drive more kilometres, so they have more collisions. Or maybe they drive at higher-risk times like late nights on the weekends. Or maybe they make more decisions that affect their driving: driving after drinking or doing drugs, or driving when fatigued. Or maybe they make more dangerous errors when driving due to driver inexperience.

f. When do the stats suggest that drivers are no longer "young"? In other words, at what age should drivers no longer pay inflated insurance rates because of their age group's traffic collision probabilities?

Answers will vary. Drivers in the 20-24 age-group have many fewer at-fault fatal collisions than drivers aged 16-19. They even have fewer than those in the next higher category. But there's another big drop-off after age 34.

3. There are two rows of data that suggest that alcohol may have contributed to drivers' involvement in fatal traffic collisions. Add them together.

a. What percentage of all drivers involved in fatal traffic collisions was affected by alcohol?

$$\frac{\text{drivers affected}}{\text{all drivers involved}} = \frac{(13 + 9)}{151} = \frac{0.146}{1} = 14.6\%$$

b. What percentage of drivers involved in fatal traffic collisions was not affected by alcohol?

$$\frac{\text{drivers not affected}}{\text{all drivers involved}} = \frac{151 - 22}{151} = \frac{0.854}{1} = 85.4\% \text{ or } 100 - 14.6 = 85.4\%$$

Name: _____

c. How could so many drivers not influenced by alcohol be involved in fatal traffic collisions?

(Answers will vary.) They might be hit by drivers influenced by alcohol, or they might have collisions for other reasons. They might have been influenced by alcohol, but the police or medical personnel may not have noticed or filed the information. They might have been impaired by something other than alcohol. However, the data here doesn't provide answers to this question.

d. How could being affected by alcohol increase the chance of drivers being involved in a collision that is not their fault?

(Answers will vary.) Alcohol may impair a driver's ability to drive defensively - predict other drivers' behaviours, recognize changes in conditions, or react quickly and correctly in an emergency. Alcohol may make it harder for a body to survive trauma. However, the data here doesn't provide answers to this question.

Traffic collision fatality rates by human condition

Activity 3 Worksheet C1

Name: _____

Instructions: Compete the worksheet.

Driver Involvement in Traffic Collisions by Human Condition and Collision Type 1999

HUMAN CONDITION	COLLISION TYPE			TOTAL	%
	FATAL	INJURY	P. DAMAGE		
Apparently Normal	117	11,399	31,427	42, 943	95.8
Loss of Consciousness	0	19	16	35	0.1
Extreme Fatigue/Fell Asleep	1	37	77	115	0.3
Defective Eyesight	0	5	10	15	-.-
Defective Hearing	0	1	8	9	-.-
Medical Disability	0	4	11	15	-.-
Physical Disability	0	4	8	12	-.-
Mental Disability	0	3	8	11	-.-
Mental Confusion/Unable to Remember	0	7	12	19	0.1
Sudden Illness	1	5	3	9	-.-
Ability Impaired by Alcohol	13	139	201	353	0.8
Ability Impaired by Drugs	0	3	3	6	-.-
Had Been Drinking/Suspected Alcohol Use[1]	9	55	79	143	0.3
Distraction/Inattention	10	414	750	1,174	2.6
Exceed Hours of Service	0	1	2	3	-.-
Total	151	12,096	32,615	44,862	100.0

1. These statistics are understated and represent only those collisions where alcohol involvement was apparent.
Source: Manitoba Transportation and Government Services. *Traffic Collision Statistics Report 1999*, page 85.

QUESTIONS:

1. Use unit rate (occurrences of one event for each occurrence of a more general event) to determine the fatality rate for traffic collisions for each "Human Condition" below. Express your answer as a percent (to hundredths of a percent).
   A method is demonstrated with the first one.

   a. Apparently normal:

$$\frac{\text{fatal}}{\text{total}} = \frac{117}{42{,}943} = \frac{0.00272}{1} = 0.27\%$$

(*Hint: Search in the chart to locate the number of fatalities and total number of traffic collisions for that condition. Divide 117 by 42,943 to get the unit rate. Look at the hundredths place to see the percentage in the unit rate.)*

Name: _____

b. Extreme fatigue/Fell asleep:

c. Ability impaired by alcohol:

d. Had been drinking/Suspected alcohol use:

e. Distraction/Inattention:

2. Describe the keystroke sequence that could do the above calculations on a calculator with a percent button.

3. On the back of this page, make a comparison statement about drinking and driving that makes an effective use of your answers to question one.

Traffic collision fatality rates by human condition – Answer Key

Name: _____

Instructions: Compete the worksheet.

Driver Involvement in Traffic Collisions by Human Condition and Collision Type 1999

HUMAN CONDITION	COLLISION TYPE			TOTAL	%
	FATAL	INJURY	P. DAMAGE		
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Mental Confusion/Unable to Remember	0	7	12	19	0.1
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Ability Impaired by Alcohol	13	139	201	353	0.8
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Distraction/Inattention	10	414	750	1,174	2.6
Exceed Hours of Service	0	1	2	3	-.-
Total	151	12,096	32,615	44,862	100.0

1. These statistics are understated and represent only those collisions where alcohol involvement was apparent.
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QUESTIONS:

1. Use unit rate (occurrences of one event for each occurrence of a more general event) to determine the fatality rate for traffic collisions for each "Human Condition" below. Express your answer as a percent (to hundredths of a percent).
   A method is demonstrated with the first one.

   a. Apparently normal:

$$\frac{\text{fatal}}{\text{total}} = \frac{117}{42{,}943} = \frac{0.00272}{1} = 0.27\%$$

(*Hint: Search in the chart to locate the number of fatalities and total number of traffic collisions for that condition. Divide 117 by 42,943 to get the unit rate. Look at the hundredths place to see the percentage in the unit rate.)*

Name: _____

b. Extreme fatigue/Fell asleep:

$$\frac{\text{fatal}}{\text{total}} = \frac{1}{115} = \frac{0.0086}{1} = 0.86\%$$

c. Ability impaired by alcohol:

$$\frac{\text{fatal}}{\text{total}} = \frac{13}{353} = \frac{0.0368}{1} = 3.68\%$$

d. Had been drinking/Suspected alcohol use:

$$\frac{\text{fatal}}{\text{total}} = \frac{9}{143} = \frac{0.0629}{1} = 6.29\%$$

e. Distraction/Inattention:

$$\frac{\text{fatal}}{\text{total}} = \frac{10}{1{,}174} = \frac{0.0085}{1} = 0.85\%$$

2. Describe the keystroke sequence that could do the above calculations on a calculator with a percent button.

   (Answers may vary, calculator to calculator)
   fatal /total % ENTER

3. On the back of this page, make a comparison statement about drinking and driving that makes an effective use of your answers to question one.

   (Answers may vary. The question of what makes a good interpretation is worth discussing.)

   Traffic collisions involving drivers impaired by or affected by alcohol are four to eight times as likely to be fatal as traffic collisions attributable to other human conditions.

   Drivers impaired or affected by alcohol make bigger mistakes than drivers making mistakes without the involvement of alcohol.

ACTIVITY 4 Manitoba's Drinking and Driving Laws

Prescribed Learning Outcomes:
Safety SLOs:
K.3.S1.B.1 Evaluate the effectiveness of laws and policies that promote personal and community safety (e.g. driving age, drinking and driving).

Complementary SLOs:

Activity Outcomes:
Students will be able to:

- Explore Manitoba traffic collision statistics to determine the effectiveness of drinking and driving laws.

Suggestions for Instruction:

NOTE:

1) The teacher may photocopy the worksheets back-to-back.
2) Students need to have an understanding of mathematical reasoning, statistics and probability. This learning activity can be completed during the Statistics Unit in S1 Mathematics.
3) Students will need a pencil, ruler, Activity 4 Worksheet A1: *The "slippery slope" of alcohol-related offences*. An extra copy of the *Student record worksheet* is included in the worksheet package. A calculator or computer calculator would be useful.
4) The teacher will need to review with students how to read a table and its components.
5) It is recommended that teachers guide all students step-by-step through the preliminary activity (questions #1-4) of the worksheet, and then assign the main activity (questions #5-6) from the worksheet as practice.
6) This learning activity may take 140 minutes.

- Explain to students that this activity examines the effectiveness of Manitoba drinking and driving laws on traffic collisions.
- Ask students the following questions. Do you know …
  a) what is the number one cause of criminal death in Canada? (Answer: drunk driving)
  b) how many Canadians admit to driving after drinking? (Answer: 4 million - Compared to the fact that the Canadian population is 30 million, this is a significant figure.)
  c) how many Canadians are killed by drunk drivers every year? (Answer: 1,700)
  d) what percentage of Manitoba deaths resulting from motor vehicle crashes are alcohol-related? (Answer: 40%)

e) what is the definition of a blood alcohol concentration of .08? (Answer: A blood alcohol concentration (BAC) of .08 refers to 80 milligrams of alcohol in one hundred millilitres of blood.)

f) how many Manitoba drivers were charged with alcohol-related criminal code offences in 1998? (Answer: 3, 219)

g) how many Manitoba drivers aged 17 years and under were charged with alcohol-related criminal code offences in 1998? (Answer: 116)

Sources: Manitoba Transportation and Government Services.
Traffic Collision Statistics Report 1999 and Transport Canada's *Smashed* Magazine, 1999.

- Explain that students will be guided by the teacher to make a graph of some data, select a line of best fit, and then think about the rate of change for that line. Then students will have the chance to practice the whole process with some different data. The data is worth thinking about and the line of best fit is a strong way to think about it.
- Introduce Activity 4 Worksheet A1: *The "slippery slope" of alcohol-related offences* as overheads.
- Discuss with the class how to read the table.
  NOTE:
  1) See Glossary at the end of the unit for an explanation of the terms used in the major headings.
  2) Ask students to explain why there are "no accident columns" under each of the 3 major headings. (Answer: Drivers are pulled over for spot checks and random driver checks.)
- Complete questions #1-4 (preliminary activity) on Activity 4 Worksheet A1 as a class.
- Ask students to complete the worksheet individually or in pairs.
- Once students have completed the worksheet, correct and discuss it as a class.
  NOTE: Refer to Activity 4 Worksheet A2: *The "slippery slope" of alcohol-related offences - Answer key*.
- Ask students if they think Manitoba's drinking and driving laws are effective.
- Discuss the drinking and driving laws students think would be effective.

Suggestions for Assessment:

- Ask students to explain the effectiveness of Manitoba drinking and driving laws.
- Correct the worksheet as a class using Activity 4 Worksheet A2: *The "slippery slope" of alcohol-related offences - Answer key*.
- Have students present Entry Slips the following day, which answer these questions:
  1) Which guidelines help to locate a line of best fit?
  2) What do you think is the main factor causing the decrease on alcohol-related offences per year?
  3) How does the information in your graph support your opinion?
- Use the Teacher Road Safety Checklist to assess the students' understanding of the effectiveness of Manitoba's drinking and driving laws. (See Assessment Tool.)
- Have students prepare scatter plot graphs representing other alcohol-related data in the table.

Cross-Curricular Connections:

- Mathematics (statistics)
- English Language Arts (manage ideas and information; explore thoughts, ideas, feelings and experiences; comprehend and respond personally and critically to oral, literary and media text; celebrate and build community)
- Social Studies (citizenship)
- Law

Opportunities for Family/Community Involvement:

- Invite students to share information from their worksheets with their friends and families.

The "slippery slope" of alcohol-related offences

Name:_____

Instructions: Complete the worksheet.

In this activity, your teacher to will guide you to:
- make a graph of some data,
- select a line of best fit, and then
- think about the rate of change for that line.

Then you will have the chance to practice the whole process with some different data. The data is worth thinking about, and the line of best fit is a strong way to think about it!

Total Alcohol-Related Criminal Code Offences by Accident/No Accident Involvement 1984-1998[1]

YEAR	ALCOHOL CONTENT OVER .08		IMPAIRED DRIVING				REFUSE SAMPLE		TOTAL
	253-B		253-A		253-2	253-3	254-5		
	NO ACCIDENT	WITH ACCIDENT	NO ACCIDENT	WITH ACCIDENT	INJURY	DEATH	NO ACCIDENT	WITH ACCIDENT	
1984	4,045	525	461	100	0	0	501	95	5,727
1985	4,110	543	474	133	0	0	587	80	5,927
1986	3,802	528	490	132	22	4	560	113	5,651
1987	3,699	580	503	120	29	2	563	108	5,604
1988	3,395	535	467	146	33	2	559	115	5,252
1989	3,392	494	370	110	33	6	484	95	4,984
1990	3,276	421	332	73	28	2	411	73	4,616
1991	3,339	373	321	52	44	2	398	62	4,591
1992	2,683	335	269	55	41	3	321	45	3,752
1993	2,210	308	282	52	29	3	274	59	3,217
1994	2,208	308	344	61	34	2	292	70	3,319
1995	2,298	180	366	39	25	3	227	37	3,175
1996	2,133	134	303	31	24	0	227	23	2,875
1997	2,378	141	338	28	37	3	250	27	3,202
1998	2,413	74	377	27	36	1	274	17	3,219
% Change 97-98	+1.5	-47-5	+11.5	-3.6	-2.7	-66.7	+9.6	-37.0	+0.5

1. Driver and Vehicle Licencing's alcohol statistic collection is structured to accommodate a "two-year" updating period due to potential backlog in the court process. Consequently, there is a one-year delay in reporting alcohol statistics.

Source: Manitoba Transportation and Government Services. *Traffic Collision Statistics Report 1999*, page 115.

Overall, there has been a 43.8% decrease in the number of alcohol-related Criminal Code offences between 1984 and 1998, 5,727 to 3,219 respectively. Possible reasons for the decrease include the introduction of stiffer penalties in 1986 and Manitoba's countermeasure program in 1989. These penalties may have accounted for an immediate 4.7% (276) decrease between 1985 and 1986, and a further decrease of 11.8% (667) between 1986 and 1989. Manitoba's countermeasure program may also have initiated a decrease of 7.4% (368) from 4,984 in 1989 to 4,616 in 1990 and a further 30.3% (1,397) decline to 3,219 in 1998. The level of law enforcement may also be a factor.

Name:_____

QUESTIONS:

Preliminary Activity: Learning about Lines of Best Fit

This activity uses only two columns of data (the YEAR and the TOTAL number of alcohol-related offences) from the table "Total Alcohol-Related Criminal Code Offences by Accident/No Accident Involvement 1984-1998".

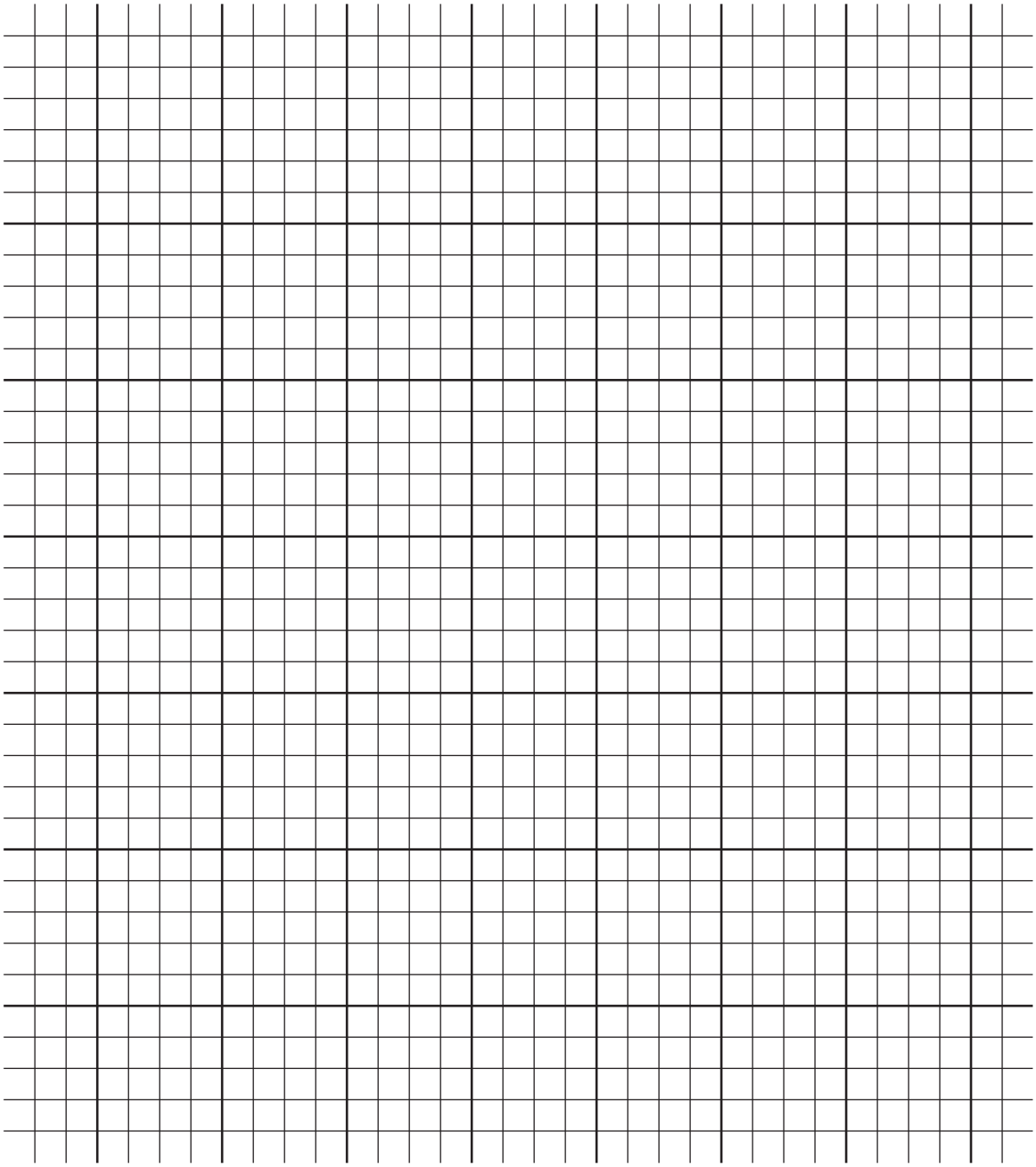
Use the student record worksheet provided on the next page.

1. **Graphing the data**
    a. Label the bottom axis of the graph with the title "Year". Beneath specific lines label the years, equally spaced, from 1982 to about 2000.
    b. Label the left axis of the graph with the title "Total Alcohol-related Offences". Decide how to spread the numbers from 0 to at least 6,000, equally spaced, along the edge. Put values beside specific lines, from bottom to top.
    c. Each ordered pair of data (year, total number of offences) can be shown by a dot. For example, locate (1984, 5,727) by moving up the line for 1984 until the correct approximate position for 5,727, and mark a dot or an X.
2. **Searching for a line of best fit:** The data did not give us a set of points that are perfectly aligned. That's too bad - data that is in a line is easier to think about. The idea of drawing a line of best fit is that we can pretend the data makes a straight line. But where should the line be drawn? These steps will help you decide.
    a. Put your ruler on the graph, so that it goes through the first and last point. You want the line to be as close as possible to most of the dots. Note how many dots are above the line that your ruler is indicating. Note how many dots are below the line. A great line of best fit will split the difference, among the dots. The ruler is not positioned to mark the best line of best fit.
    b. Decide which way the ruler should be slid, up or down, left or right.
    c. Decide which way to twist the ruler a little, clockwise or counterclockwise.
    d. When you find the best position (It is a matter of judgment, not precision!), then you can draw the line onto the graph. Extend it to the edges of the grid.

Name:_____

The "slippery slope" of alcohol-related offences

Student record worksheet



Name:_____

3. **Thinking about the line: rate of change**. This idea helps to describe how much the graphed value changes, year by year. With a line of best fit, the rate of change is always the same, no matter what years are used to calculate it.
   a. First do Trial 1. Read the number of offences for 1985 and 1995, *using the line of best fit* to get your values.
   b. Calculate the difference by subtracting the value for the later year from the value for the earlier year. *This result should represent a decrease. Why?*
   c. Calculate the change per year by dividing the difference by the difference in years.
   d. Calculate the percent change per year by making a ratio of the change per year compared to the original number of offences (the 1985 value).
   e. Now do Trial 2. Try it on your own, picking two different years. You should get the same change per year as in Trial 1 since the change per year is constant with a straight-line graph. You won't get the same percent change per year since it depends on the actual year that you select.

Trial 1			**Trial 2**		
	year	# of offences		year	# of offences
data 1	1985	_____	data 1	____	_____
data 2	1995	_____	data 2	____	_____
difference	10	_____	difference	____	_____
change per year = ( ) / 10 = _____			change per year = ( ) / ( ) =		
% change per year = (____) / (_____) =			% change per year = (____) / (____) =		
_____ % decrease per year			_____ % decrease per year		

Name:_____

4. **Thinking about the data: explaining and extrapolating**. In this opportunity, you get to describe how the data does not quite match the line of best fit.

   a. The line of best fit suggests that the number of offences is going down. What factors do you think contribute most to this? Use the information under the chart for part of your answer.

   b. The line of best fit suggests that the number of offences is going to keep going down. If this is so, what will happen in a few years? (That is the meaning of "extrapolating" - to extend a relationship beyond the given data.) Do you think this is actually going to happen?

   c. Note that the decrease in the number of offences actually slowed down the last few years. Why do you think that may be?

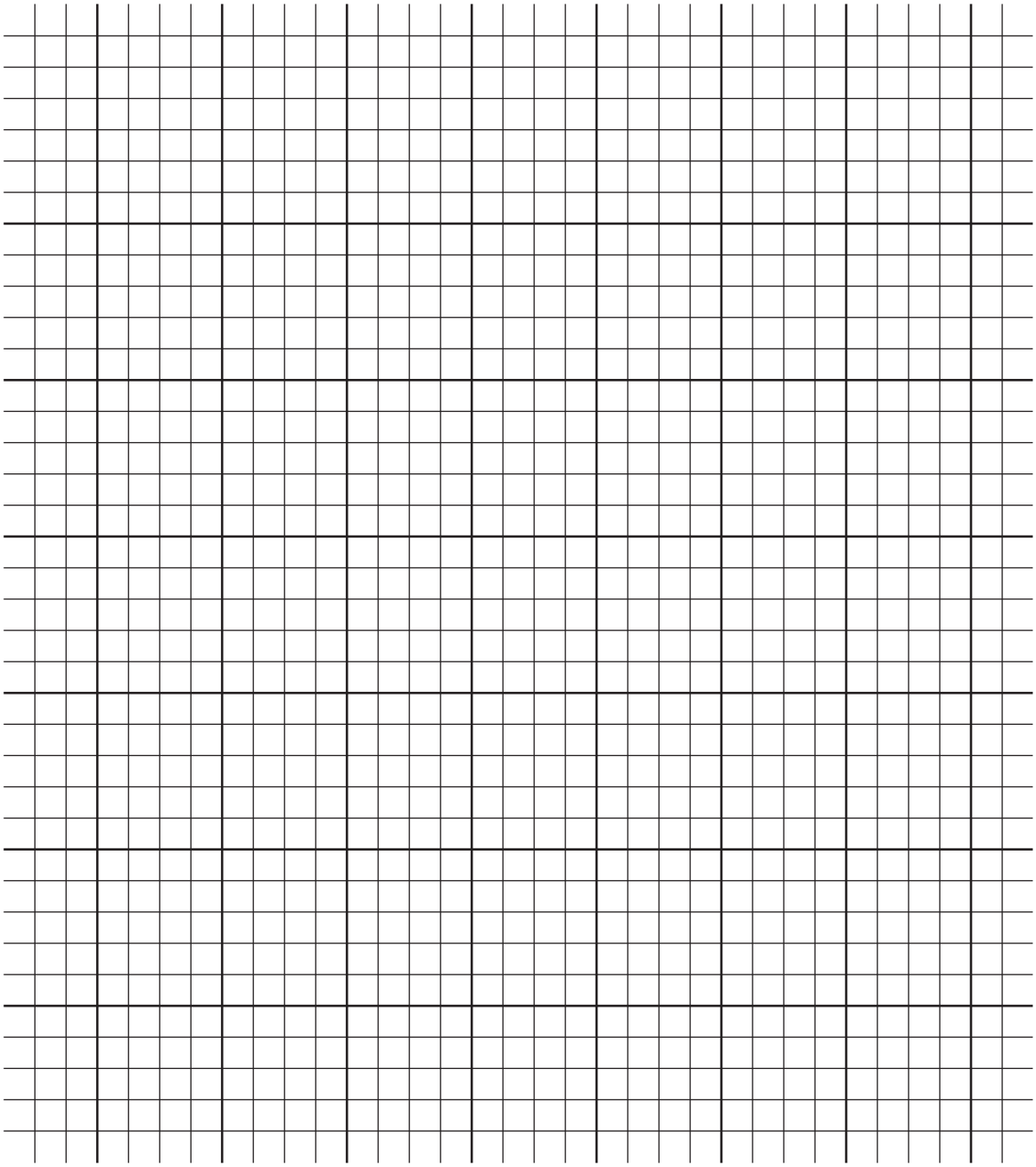
Main Activity: Now it's your turn

5. a. Select another column of data that you think would be worth thinking about. Here is a recommendation: add the three no-accident columns together, and use that data. (Use the second copy of the *Student record worksheet* that you were given.) Get a friend to add the three with-accident columns together and use that data. Your two graphs might be worth comparing, and it might help you to see what is happening to the Total Number of Offences in the last few years. Alternatively, you could just use a single column of data of your choice (but not the Injury or Death columns - their numbers are too small and scattered to make a good line of best fit).

Name:_____

The "slippery slope" of alcohol-related offences

Student record worksheet



Name:_____

5. b. Explain the correlation.

6. a. Explain the decrease in number of offences.

b. Hypothesize about the line of best fit after 1999.

c. Explain why the decrease in number of offences is slowing.

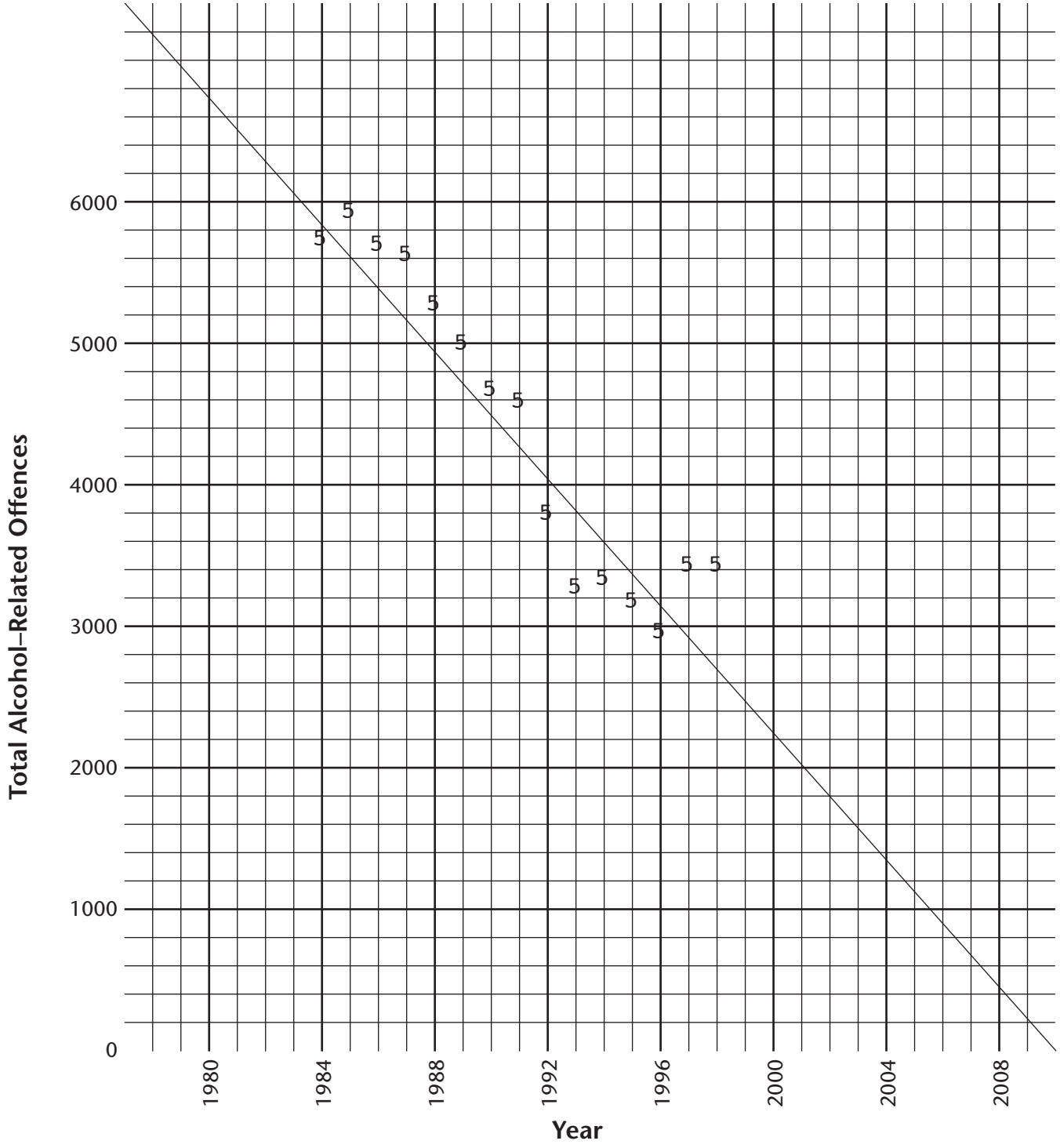
The "slippery slope" of alcohol-related offences – Answer key

Activity 4 Worksheet A2

Instructions: Complete the worksheet.

Name:_____

These answers are for the **preliminary activity,** questions 1 and 2.
Answers for the main activity will depend on the students' selection of data.



3. NOTE: Actual figures will be DIFFERENT.
The figures should be based on the students' lines of best fit. Name:_____

Trial 1			**Trial 2**		
	year	# of offences		year	# of offences
data 1	1985	_____	data 1	____	_____
data 2	1995	_____	data 2	____	_____
difference	10	_____	difference	____	_____
change per year = ( ) / ( ) =			change per year = ( ) / ( ) =		
% change per year = (___) / (_____) =			% change per year = (____) / (____) =		
_____ % decrease per year			_____ % decrease per year		

5. b. Explain the correlation.
(Answers will vary.)
The correlation is negative because:
i) the graph is going down
ii) the data is decreasing
iii) we subtracted a larger number from a smaller one

6. a. Explain the decrease in number of offences.
(Answers will vary. The better answers will interpret the ideas in the explanation given at the bottom of the chart.)

b. Hypothesize about the line of best fit after 1999.
(Answers will vary.) The line of best fit suggests that the number of alcohol-related offences will hit zero in a few years. That is unlikely to happen. [Opinions will vary about how low the number of offences can go, and what factors can cause it to continue to decrease.]

c. Explain why the decrease in number of offences is slowing.
(Answers will vary.) The best answers will suggest that the factors which have caused the decrease in prior years are not as effective with the few people still drinking and driving. Answers are also likely to include social factors regarding the perceived appropriateness of drinking and driving.

ACTIVITY 5 Community Supports for Drivers and Passengers

Prescribed Learning Outcomes:
Safety SLOs:

K.3.S1.B.4 Demonstrate the ability to access valid health information and health-promoting products and services available in the community (e.g. health agencies and associations related to road safety, youth advocates, Internet).

Complementary SLOs:

K.5.S1.D.3 Identify community agencies and resources available to support (e.g. addictions counselling services) the prevention of substance use and abuse.

Activity Outcomes:
Students will be able to:

- Demonstrate how to access valid health information and health-promoting services in the community that support motor vehicle passengers and drivers.
- Describe community supports available for motor vehicle passengers and drivers.

Suggestions for Instruction:

NOTE:

1) Students need to be familiar with research skills and Internet use.
2) This activity may take 140-180 minutes.
3) The teacher may encourage students to select driver safety issues relevant to their community.
4) Teachers may refer students to the list of Canadian Traffic Safety Web Sites included in this activity. For a current listing refer to CARSP/ACPSER – Canadian Traffic Safety Web Sites or http://www.cyberus.ca/~carsp/links_ca.htm
   See Learning Activity 1 for a complete print reference.
5) The teacher may encourage students to look in the local telephone directory for chapters of these organizations and the names of contact people who may be able to provide relevant information.

- Explain to students that they are going to do a project/search on an organization/group in their community that offers programs/services which support motor vehicle driver and passenger safety.
- Have the students work in small groups or individually.
- Present overhead Activity 5 Worksheet A: *Examples of community supports for drivers and passengers*.
- Introduce the Activity 5 Worksheet B: *Community supports for drivers and passengers* as an overhead.

- Explain the project:
  1) select and record the organization.
  2) collect information on the organization.
     Ask students to address the following questions:
     Who is the organization/group?
     What is this organization's/group's role? … clientele? … services provided?
     Why is this community support important?
     Where do they operate?
     When do they operate or offer their services?
     Are their information and services valid?
     NOTE: Students may use the Internet, books and magazines, or local community resources e.g. library, local telephone directory, RCMP, Band constables, local school and/or community organizations that address driver and passenger safety.
  3) write the bibliographic information on sources used.
  4) decide how they will present their project to the class.
- Discuss with students some criteria that might be used to determine whether the information and services provided by an organization/group are valid.
  NOTE: Criteria to consider include:
  - Is this organization recognized as a legitimate (genuine) one?
  - Is the organization viewed as reliable/trustworthy/dependable?
  - Is it seen as reputable (honest, well thought of)?
- What is the organization's key role or purpose?
- Have students select differentiated instruction to present their projects (e.g. poster, public service announcement, role play, oral report, persuasive speech, using technology such as PowerPoint).
- Introduce Activity 5 Worksheet C: *Sample evaluation of presentation* to students so they are familiar with the assessment rubric for this activity.
- Have students present their completed projects to the class.
- Have students make notes on new information learned from other classmates' presentations.

Suggestions for Assessment:

- Evaluate other students' presentations. A sample assessment rubric is provided in Activity 5 Worksheet C: *Sample evaluation of presentation*.
- Ask students to explain how they accessed information on their projects.
- Use the Teacher Road Safety Checklist to assess the students' abilities to access valid, health information and health-promoting services in the community that support motor vehicle drivers and passengers. (See Assessment Tool.)
- Use the Teacher Road Safety Checklist to assess the students' knowledge of community supports available to motor vehicle drivers and passengers. (See Assessment Tool.)
- Have students establish a class or school website on road safety.
- Have student make presentations to other students in the school or community and assess these presentations.

Cross-Curricular Connections:

- Physical Education/Health Education (healthy lifestyle practices)
- English Language Arts (explore thoughts, ideas, feelings and experiences; manage ideas and information; comprehend and respond personally and critically to oral, literary and media texts; enhance the clarity and artistry of communication; celebrate and build community)

Opportunities for Family/Community Involvement:

- Display student projects and host a gallery walk in the school for other students.
- Invite students to share their projects with their families and other youth groups in the community.
- Display any posters or other visuals in school hallways, the Northern Store, the Band office, or the local RCMP detachment office.

Examples of community supports for drivers and passengers

- Manitoba Public Insurance (MPI)
- Manitoba Motor League
- Manitoba Safety Council
- Transport Canada
- Mothers Against Drunk Driving (MADD)
- Teens Against Drunk Driving (TADD)
- Safe Grad Manitoba
- Operation Street Smart (Winnipeg Police Services) - auto theft prevention
- Operation Red Nose
- SNOMAN - Snowmobilers of Manitoba
- Canadian Automobile Association
- Addictions Foundation of Manitoba (AFM)

Community supports for drivers and passengers

Instructions: Complete the worksheet

Name: _____

TOPIC:

INFORMATION (Programs and Services)	SOURCES
Who? What is its role … programs and/or services provided? Why is it important? Where does it operate? When does it operate? Are their information and services valid?	

Sample evaluation of presentation

Name: _____

Instructions: Please rate each evaluation criteria using the Scale:
1 = unsatisfactory 2 = satisfactory
3 = very good 4 = excellent

/ **24** **Content:**

___ Presentation well-organized - good introduction, informative, good conclusion

___ Evidence of detailed preparation

___ Material relevant to topic

___ Language appropriate and interesting

___ Stayed on topic

___ Use of visuals - effective, interesting

/ **12** **Delivery:**

___ All group members involved

___ **Oral/Audio:** words spoken clearly; rate of speech well paced; volume heard easily; easily understood; clear message; made eye contact; body language - stood straight and confidently; effective use of sound; appeals to audience

___ **Visual:** clear message(s); effective use of colour, lighting, sound; appeals to target audience; effective use of graphics; appeals to audience

/ **16** **General Impression:**

___ Informative

___ Interesting

___ Creative

___ Well-planned

Total:

/ 52 marks

ACTIVITY 6 Behind the Wheel Game

Prescribed Learning Outcomes:
Safety SLOs:

K.3.S1.A.5a **Investigate potential safety risks inherent in selected alternative pursuits (e.g. ski hills, activities on ice and roads).**

S.3.S1.A.1 **Apply rules and procedures for safe and responsible participation and use of equipment in selected, specific physical activities and environments (e.g. self-regulation, teamwork).**

Complementary SLOs:

K.4.S1.A.3 **Examine factors (e.g. family, values, health knowledge, peer influence, media, costs) that affect making decisions by self and/or others for active healthy lifestyles and/or career building.**

K.4.S1.B.1a **Describe ways to treat others (e.g. show respect, consideration, support, encouragement, understanding) for the development of healthy and meaningful relationships (e.g. between parent/child, siblings, best friends, at work, in the community).**

K.4.S1.B.4 **Identify examples of potentially dangerous situations (e.g. physical abuse, verbal abuse, harmful substances, peer pressure) and effective strategies for avoidance/refusal.**

Activity Outcomes:
Students will be able to:

- Design a board game that reviews: potential driving risk conditions and behaviours, factors influencing driver decisions, responsible passenger and driver decisions, and refusal and avoidance strategies.

Suggestions for Instruction:

NOTE:
1) This learning activity may take 140 minutes.

2) The teacher may enlarge the worksheet for students.

- Explain to students that this learning activity represents a culminating or concluding activity to their Road Safety Unit.
- Explain that students are asked to design a board game that reviews motor vehicle driver and passenger safety.
- Have students working small groups of 2-3 people.
- Introduce the Activity 6 Worksheet: *Behind the wheel* (game board).
- Have students work in pairs.
- Explain the criteria required in designing the game.
  The game board has 24 spaces. The students are required to:
  - Select and label 6 spaces as Free Spaces.
  - Select and label 8 spaces as Road Risks (potentially dangerous conditions and/or behaviours).
  - Select and label 8 spaces as Road Wise.
  - One space is already labeled Start your engines.
  - One space is already labeled Home.

- Instruct students to follow these steps:

  1) Students will make 24 playing cards.

  2) Twelve Road Risk playing cards should be labeled Road Risk on one side. The other side will have a specific example of a road risk, with a penalty of a backward movement of a given number of spaces (determined by the students). Cut out these cards and place in a pile on the game board. (Even though the board has 8 Road Risk spaces, a few extra cards are needed.)

     Example: You are speeding on a gravel road, move back 3 spaces.

     NOTE: The more dangerous the activity/risk, the further back the player moves on the board, to a maximum of 5 spaces.

     HINT: Encourage students to refer to prior content on motor vehicle driver and passenger safety in designing the cards.

  3) Twelve Road Wise playing cards should be labeled Road Wise on one side. The other side will have a specific example of a road wise action, with a reward of an advanced movement of a given number of spaces (determined by the group of students). Cut out these cards and place in a pile on the game board. (Even though the board has 8 Road Risk spaces, a few extra cards are needed.)

     Example: You always wear your seat belt, move ahead 5 spaces.

     NOTE: The safer the activity/risk, the further forward the player moves on the board, to a maximum of 5 spaces.

     HINT: Encourage students to refer to prior content on motor vehicle driver and passenger safety in designing the cards.

- Explain the rules of the *Behind the wheel* game to students:
  - Two to 3 players can play at one time.
  - To begin the game, players roll a die and the person with the highest number goes first.
  - Players must roll a die and move the numbers of spaces shown on the die.
  - Players landing on a Road Risk space must take the top playing card in the Road Risk pile and follow the instructions.
  - Players landing on a Road Wise space must take the top playing card in the Road Wise pile and follow the instructions.
  - The first player to reach the Home space is the winner.
- Have students switch their *Behind the wheel* games with other students and play.
- Invite students to rate other students' games based on prior criteria and additional criteria such as:

  a) difficulty of Road Risks and Road Wise cards (e.g. 1 - easy, 2 - well thought out)

  b) enjoyable (e.g. 1 - fun, 2 - fun and interesting)

  c) relevancy (e.g. 1 - somewhat relevant to community, 2 - very relevant).

Suggestions for Assessment:

- Observe students' responses while playing the *Behind the wheel* game.
- Use the Teacher Road Safety Checklist to assess the games students designed. (See Assessment Tool.)
- Have students design a written test or write a short play.

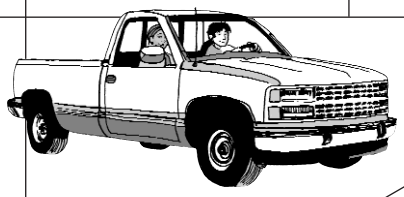
Cross-Curricular Connections:

- Physical Education/Health Education (personal and social management)
- English Language Arts (explore thoughts, ideas, feelings and information; manage ideas and information; celebrate and build community)

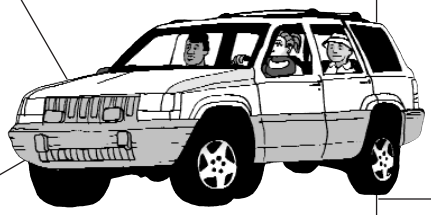
Opportunities for Family/Community Involvement:

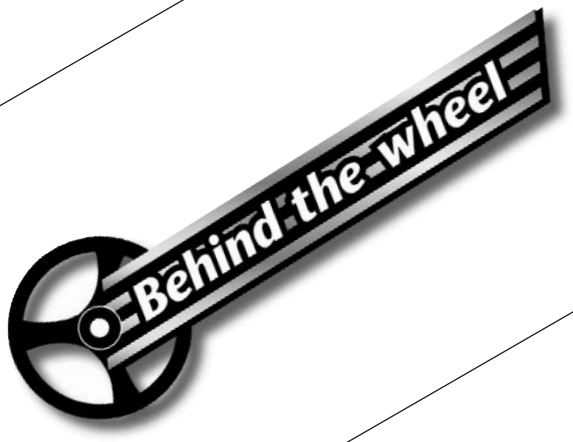
- Invite students to play the game with students in other classes and/or their family members. The game can be laminated.

Names: _____

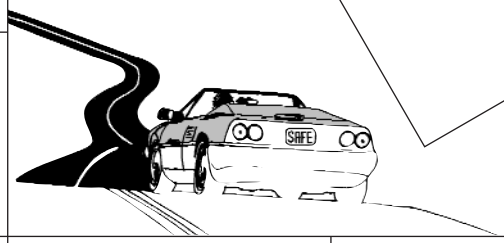


Road Risks Cards





Road Wise Cards



Start your engines!

Home

GLOSSARY

Alcohol Content Over .08:
Alcohol content over .08 refers to a conviction under Section 253 (b) of the Criminal Code of Canada. This conviction relates to the operation or care or control of a motor vehicle by a person with a blood alcohol concentration (BAC) exceeding 80 milligrams (mg) of alcohol in 100 millilitres (ml) of blood. The offence is supported by empirical data in the form of breathalyzer readings or a blood test.

Blood Alcohol Concentration (BAC):
Blood alcohol concentration refers to the amount of alcohol present in a person's bloodstream. BAC is expressed as a percent. It can be measured by a chemical analysis of the blood, urine or breath. It is commonly accepted that a driver's abilities are impaired with a BAC of .03 to.05. A driver with a BAC of .08 is driving under the influence and can be charged under the Criminal Code of Canada.

Controlled Intersection:
This refers to an intersection that is regulated by either a traffic signal or sign, i.e. traffic lights, stop sign, railway crossing.

Graduated Driver Licensing (GDL) Program:
The GDL Program was introduced in Manitoba in October 1, 2001, and applies to all novice drivers, regardless of age. The novice driver must pass: a written test, a nine-month learning period, a road test, and an intermediate stage, before entering the full license stage. Certain restrictions apply to the novice driver during the learner and intermediate stages. The intent of the GDL Program is to increase the driver's privileges as the novice driver demonstrates responsible, violation-free driving behaviours. For a detailed description of the GDL Program refer to Senior 2 Activity 5 Worksheet B.

Impaired Driving:
Impaired driving refers to a conviction under Section 253 (a) of the Criminal Code of Canada. This conviction relates to the operation or care or control of a motor vehicle by a person whose ability to operate the vehicle is impaired by alcohol or a drug. The offence is normally supported by police evidence based on their observation of the person. The evidence normally includes: physical signs such as odour of alcohol, unsteady gait, glassy eyes, etc.

Refuse Sample:
This refers to a motor vehicle driver refusing to submit to a breathalyzer test. All drivers are required by law to submit to a blood alcohol concentration test when requested (implied consent law).

Risk:
A risk refers to the danger of involvement in a traffic collision.

Risk Behaviours:
Risk behaviours are actions by motor vehicle drivers and other road users that are dangerous. Examples include: riding in a motor vehicle without wearing a seat belt, driving too fast for weather or road conditions, talking on a cell phone while driving a motor vehicle.

Risk Conditions:
Risk conditions are circumstances in the environment that can be dangerous to motor vehicle driving. Examples of risk conditions include: road surfaces (gravel, wet, potholes), winter roads or weather (rain, ice, fog).

Road Risks:
Road risks refer to potentially dangerous conditions and behaviours related to road use. (See definitions of Risk Conditions and Risk Behaviours.)

Uncontrolled Intersection:
This refers to an intersection in Manitoba were there are no traffic signs or signals. Examples include gravel road intersections, exiting a back lane, and many streets.

ASSESSMENT TOOL

TEACHER ROAD SAFETY CHECKLIST

Grade Senior 1

Instructions: This checklist is to be used for ongoing observation in order to determine student progress.
Teachers may record the marks for any assignments related to the activity outcomes listed for assessment purposes.

Students' Names	identifies potential driving risks facing motor vehicle passengers and drivers Activities 1& 2	demonstrates how to access valid motor vehicle driver and passenger information, products and services in community Activities 1& 5	describes factors that affect motor vehicle driving Activities 1& 2	describes responsible decisions that reflect safe driving in different scenarios Activity 2	describes examples of dangerous driving situations and peer pressure and effective avoidance/ refusal strategies Activity 2	identifies potential driving risks involving human condition Activity 3	examines MB traffic collision stats to determine driver involvement in collisions by human condition Activity 3

TEACHER ROAD SAFETY CHECKLIST

Grade Senior 1

Instructions: This checklist is to be used for ongoing observation in order to determine student progress.
Teachers may record the marks for any assignments related to the activity outcomes listed for assessment purposes.

Students' Names	explores MB traffic collision statistics to determine the effectiveness of drinking and driving laws Activity 4	describes community supports available for motor vehicle passengers and drivers Activity 5	designs "behind the wheel" board game that reviews motor vehicle passenger and driver content Activity 6				