

# SEATBELTS, SPEED, & COLLISION INVESTIGATION

**Grade Level:** 7-12

**Time Required:**

- Approximately 25 minutes (to cover PowerPoint presentation)
- 3 optional activity plans are provided – these are to be completed after the PowerPoint presentation and their times are listed in the activities
- Possible follow-up lessons are also provided and will take various amounts of time, depending on number chosen, grade level, and the importance placed upon each

**Additional Resources, Materials, and Equipment Required:**

Kit includes:

- PowerPoint presentation
- Lesson Plan
- Activity Plans
- Master handouts for students
- Equipment as per the Activity Plans

**Main Objective:** To increase student knowledge about seatbelts, speed, collision investigation, and to engage students to educate others.

**Learning Outcomes:**

Students will:

- increase knowledge and understanding of seatbelt use, speed, and collision investigation
- engage other students in a school-based activity using what they've learned
- gain an understanding of the usefulness of seatbelts and the force exerted when one isn't worn in a crash
- gain an understanding of speed and its consequences
- gain an understanding of how collisions can be reconstructed to learn what has happened

**Curriculum Connections** (throughout entire module and includes possible follow-up lessons):

**Grade 7**

<b>Subject Area</b>	<b>Outcomes</b>	<b>Specific Outcome</b>
Health	Life Learning Choices - L-7.7	Determine and use knowledge and skills of the class to promote school and community health
Health	Life Learning Choices - L-7.8	Apply effective groups skills to design and implement a school-community health enhancement plan
Science	Unit D: Structures and Forces	- Recognize and classify structural forms and materials used in construction - Identify environmental factors that may affect the stability and safety of a structure, and describe how these factors are taken into account
Language Arts	2.1 Use strategies and cues - use prior knowledge	Select and focus relevant ideas from personal experiences and prior knowledge to understand new ideas and information
Language Arts	2.4 Create Original Text - elaborate on the expression of ideas	Create a variety of oral, print and other media texts to explore ideas related to particular topics or themes
Language Arts	3.4 Share and Review - share ideas and information	Communicate ideas and information in a variety of oral, print and other media texts, such as reports, autobiographies, brochures and video presentations

**Grade 8**

<b>Subject Area</b>	<b>Outcomes</b>	<b>Specific Outcome</b>
Health	Wellness Choices - W-8.1	Examine the relationship between choices and resulting consequences
Health	Wellness Choices - W-8.8	Identify potentially unsafe situations in the community, and begin to develop strategies to reduce risk
Health	Life Learning Choices	Relate personal knowledge and skills to potential opportunities for volunteering and providing service to others in the community
Language Arts	1.2 Clarify and Extend - extend understanding	Reconsider and revise initial understandings and responses in light of new ideas, information and feedback from others
Language Arts	2.4 Create Original Text - generate ideas	Create oral, print and other media texts related to issues encountered in texts and in own life
Language Arts	3.4 Share and Review - share ideas and information	Integrate appropriate visual, print and/or other media to inform and engage the audience

**Grade 9**

<b>Subject Area</b>	<b>Outcomes</b>	<b>Specific Outcome</b>
Health	Wellness Choices - W-9.1	Use knowledge of a healthy, active lifestyle to promote and encourage family/peer/community involvement
Health	Wellness Choices - W-9.8	Develop strategies to promote harm reduction/risk management
Health	Wellness Choices - W-9.9	Analyze and evaluate laws and policies that promote personal, community, and workplace safety
Language Arts	2.2 Respond to Texts - construct meaning from texts	Relate the themes, emotions and experiences portrayed in oral, print and other media texts to issues of personal interest or significance
Language Arts	3.4 Share and Review - share ideas and information	Integrate appropriate visual, print and/or other media to reinforce overall impression or point of view and engage the audience

### High School

Subject Area	Outcomes	Specific Outcome
CALM	Personal Choices - P2	Evaluate choices and combinations of choices that can create barriers to achieving and maintaining health, and identify actions to improve health
CALM	Personal Choices - P6	Determine practices and behaviours that contribute to optimal physical well-being
CALM	Personal Choices - P4	Develop approaches/tactics for creative problem solving and decision making
Physics 20	20-A1.2s	Conduct investigations into relationships among observable variables and use a broad range of tools and techniques to gather and record data and information
Language Arts	4.1 Develop and present a variety of print and non-print texts	Assess text creation context; Consider and address form, structure, and medium; Develop content; Use production, publication, and presentation strategies and technologies consistent with context

<b>Activity Plan #1 (Optional): RE-CREATION OF A CRASH SCENE</b>
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**Time Required:** 30-40 minutes

**Overview:** Students will re-create a crash scene in order to determine how/why the crash occurred.

**Additional Materials and Equipment Required:**

- Power Point – Re-creation of a Crash Scene (the power point will walk the instructor and class through each step of the activity)
- Crash Scene Kit (request by email: [Traffic.Safety@albertahealthservices.ca](mailto:Traffic.Safety@albertahealthservices.ca))
  - Laminated cards of an intersection
  - Crash scene photos and investigation graphics
  - Toy cars
  - Dry erase markers
  - Sticker dots

**Activity Instructions:**

1. Show the class different pictures of various crash scenes. How do you think this crash occurred? How do you know? Is the life space intact? Do you think everyone survived?
2. Have the class get into groups of three or four students.
3. Show the class a picture of a crash scene on the projector.
4. What do you think happened to cause this crash? Have the students work in their groups to try and re-create the crash, using laminated cards of an intersection, toy cars, and dry erase markers. Have them use the dry erase markers to draw skid marks, vehicle damage, etc.
5. Have each group come to a consensus about what happened and present their ideas back to the class.
6. When each group has presented their ideas, work together as a class to come up with one common solution of how the crash occurred. Include direction, speed and stopping distance.
7. Show the students how the actual crash occurred.

**Debrief:** What kinds of poor decisions were made to cause this crash? What could/should have been done differently in order to prevent it from happening? Through your work today is there anyone who would consider a career in the field of crash investigation?

**Note:** Expand discussion to include momentum, acceleration and force if activity is used during a Science or Physics class. Use the laws of physics and energy to solve the case.

## Activity Plan #2 (Optional): QUICK CLICK

**Time Required:** 20-25 minutes

**Overview:** Students will race in teams to see who can buckle up and unbuckle their seatbelts the fastest.

**Additional Materials and Equipment Required:**

- A recent model vehicle, full size sedan, with manual lap/shoulder belts in front and back seats
- 4 pylons
- Stopwatch
- Pen and paper to record results
- Whistle

**Activity Instructions:**

1. Find an area that is level and paved to provide good footing.
2. Divide students into groups of four – the four players will start buckled in their seats.
3. When the whistle is blown, the time starts. Each person will unbuckle and move to the next seat (clockwise) and then buckle back up. Participants cannot jump over seats to get between the back and front.
4. This is repeated until each person is back in their original seat and buckled in.
5. Stop the timer.
6. The team that completes the rotation in the shortest amount of time is the winner.

**Variations:**

- Challenge the winning team to a student versus adult 'buckle off' and encourage teachers, administration, community members, and counselors to get involved.
- Have two or more vehicles and let teams compete against each other in real time.
- Do this activity at lunch time over several days as a whole school activity. Ask local businesses to provide prizes for the winning team.

**Debrief:** What do you think are some reasons as to why some people don't buckle up? How long, on average, do you think it takes to buckle up? Are there any excuses for not buckling up? Encourage students to always remember to buckle up!

This activity was taken from Smartrisk No Regrets website:  
<http://www.smartrisknoregrets.ca/index.php/activities/>

## Activity Plan #3 (Optional): GET CAUGHT

**Time Required:** Lunchtime, morning, or afternoon (about 20 minutes when students are driving in/out of the school parking lot)

**Overview:** Students will do a tally sheet for 'x' number of vehicles that are leaving/coming into the parking lot to see what percentage of occupants are wearing their seatbelts.

**Additional Materials and Equipment Required:**

- Checklist
- Smart cards

**Activity Instructions:**

1. Stop each vehicle to check that drivers and passengers are buckling up.
2. Complete a tally for each occupant. Are they a driver (D) or a passenger (P)? Are they wearing their seatbelt (Y) or not (N)?
3. Optional: reinforce positive behaviour by giving some type of reward to those wearing their seatbelt.
4. Educate those occupants who are not wearing seatbelts by handing them a smart card.
5. Tally the results as a percentage and give the results to the school population as either an announcement or at a school wide event.
6. Consider hosting the event a second time and challenge the school to beat their previous record.

**Variations:**

- Ask local businesses to provide rewards that can be given at random to seatbelt users during the activity.
- Post the results from the first and second time throughout the school, along with facts about seatbelt use.
- Host the event in the community to see how compliance rates differ from the school population.

**Debrief:** Were you surprised at the results from the survey? What could be done to further promote people to wear their seatbelts?

This activity was taken from Smartrisk No Regrets website:  
<http://www.smartrisknoregrets.ca/index.php/activities/>

## POSSIBLE FOLLOW-UP LESSONS AND ACTIVITIES

Below are some ideas on how to further extend the seatbelts, speed, and collision investigations module.

- Have students create a poster campaign that promotes awareness of the consequences of speed and/or not wearing a seatbelt. Take this campaign out into the community to educate others.
- Have students create a public service announcement video/skit about speed and/or seatbelt use. This can be presented/shown in class or at a school wide event (i.e. assembly). Consider presenting at a community event as well.
- Have a group of students present one (or more) of the activities at a school wide or community event.
- Have students write their local MLA and convince them to create tougher laws on speeding and seatbelt use. Use peer editing and self editing strategies.
- Before starting the module, invite a guest speaker who has been adversely affected by speed or the lack of seatbelt use and have them tell their story. Have students share how it affected them.
- Using the facts and statistics from PowerPoint presentation and [www.albertaseatbelts.ca](http://www.albertaseatbelts.ca), create a list of trivia questions. Create a game where students work together in groups to find the correct answer. When the group has found their answer, one person from the group races to the front and hits a button (ie. Staples “Easy Button”) to share their answer. Consider having them prove their answer by reading right from the source. Variations: (1) have students go to different classes throughout the school and run the same activity for other students; (2) use this game as part of a school wide event.
- Have students calculate the amount of force that their body would exert in a crash. Create other scenarios where they will have to calculate force depending on weight, speed, and other factors.

*Note: Provide or create an outline or performance rubric for each of the follow-up lessons based on the amount of time you wish to spend on it, as well as the grade level. This can be created with the class so they can help decide the criteria of an effective end product or it can simply be handed out to students and explained.*