

WHY CRASHES HAPPEN

LESSON 5 – WHY CRASHES HAPPEN

Activity 5.1 page 86 Driving triangle

Activity 5.2 page 89 Driving risks






LEARNING INTENTIONS

1. Understand the driving triangle and the factors that can contribute to a crash.
2. Explore scenarios to determine driving risks and strategies to mitigate these.

MAPPING

LEARNING AREA	STRAND	SUB-STRAND	CONTENT DESCRIPTOR
Year 10 Syllabus Health and Physical Education	Personal, social and community health	Communicating and interacting for health and wellbeing	Critical health literacy skills and strategies
Year 10 Syllabus Humanities and Social Sciences	Humanities and Social Sciences skills	Questioning and researching	Construct, select and evaluate a range of questions and hypotheses involving cause and effect, patterns and trends, and different perspectives
Year 10 Syllabus English	Language	Expressing and developing ideas	Evaluate the impact on audiences of different choices in the representation of still and moving images

GENERAL CAPABILITIES

-  Literacy
-  Numeracy
-  ITC capability
-  Critical and creative thinking
-  Personal and social capability

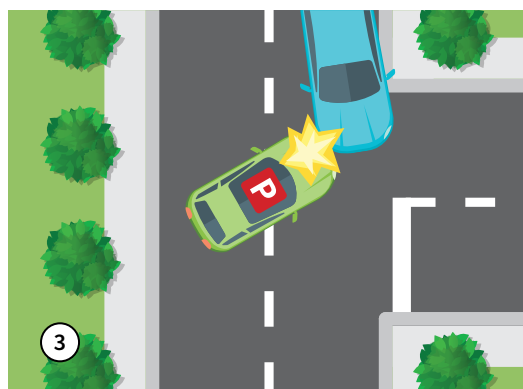
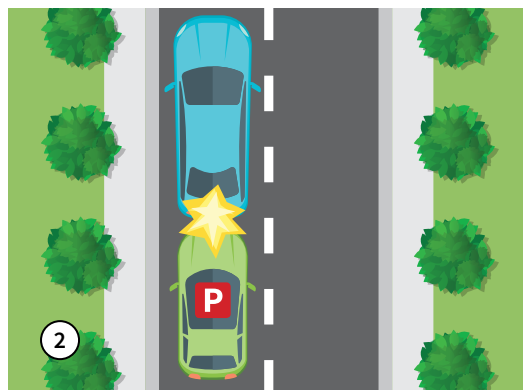
WHAT'S IMPORTANT FOR TEACHERS?

ROAD CRASH THEORY (DRIVING TRIANGLE)

- Road crashes are the result of the interaction between the driver, vehicle and environment.
 - Driver:** the decisions the driver makes, risk-taking such as speeding, drink or drug driving, driving tired or not wearing a restraint, and distractions both inside and outside the vehicle. Ninety percent of road crashes are caused by human factors alone, or in combination with vehicle or environmental factors. <https://www.qbe.com/au/news/the-most-common-causes-of-car-accidents>
 - Vehicle:** the condition of the vehicle such as brakes, foggy windscreen or faulty lights and the presence of safety features such as air bags and electronic stability control.
 - Environment:** features of the road and the area around it such as weather conditions, road surface, available light and wildlife. Environmental factors can be divided into the physical environment (eg road and weather conditions) and the socio-cultural environment (eg societal attitudes and beliefs).
- Applying road crash theory in the classroom is a useful way to demonstrate how a potential crash can be avoided and harm reduced. The theory can also be used to demonstrate ways to stay safer as a passenger or driver.
- Avoiding crashes involves the finely tuned skills of hazard perception, risk assessment and a safe approach to the driving task.
- Motivations for driving and emotional responses to situations can also affect the way people drive and can potentially affect the chances of having a crash.

COMMON CRASH TYPES FOR YOUNG DRIVERS

- Drivers of all ages are involved in crashes. However young drivers in their first six months on P plates have more crashes than others and are more likely to be involved in the same types of crashes.
- The three most common crash types for young drivers include single vehicle crashes veering off the road to the left ^①, rear end crashes ^②, and turning or driving straight ahead at intersections ^③ (Monash Injury Research Institute, 2011).



3. Errors made by new drivers are often a result of:
 - speeding or travelling too fast, both for the road conditions and level of experience
 - misjudging the speed of other vehicles, particularly oncoming cars
 - overestimating their ability and underestimating the risks
 - not scanning the traffic environment well
 - travelling too close behind other vehicles
 - inattentiveness, failure to anticipate, distraction and fatigue (Catchpole, Cairney and MacDonald, 1994).

ROAD CRASH INVOLVEMENT OF YOUNG PEOPLE

1. The following list of traits and factors contribute to the overrepresentation of young people in road crashes with all of these being accentuated in males.
 - Assert their individuality in various ways along with an increase in independence.
 - Over-confident in their driving ability while underestimating the risks.
 - Inexperienced with predicting and handling hazards and dangerous driving situations.
 - Tendency to take more risks while driving, coupled with a fearless, adventurous attitude.
 - Believe they are invincible, with an attitude that 'it won't happen to me'.
 - Easily distracted when travelling with friends.
 - Often travel with inexperienced drivers who at times can influence them in a negative way.
 - Socialise regularly and more often at night than other age groups. (Mayhew & Simpson, 1995; McKnight, Langton, McKnight, Resnick & Lange, 1995; Catchpole, Cairney & MacDonald, 1994).

RISK FACTORS – INEXPERIENCE AND OVERCONFIDENCE

Inexperience

1. Young drivers with limited driving experience devote a greater proportion of their available attention to conscious decision-making and monitoring of their driving. This leaves less time for them to devote to the cognitive and hazard perception skills required for safe driving (Catchpole, Cairney & MacDonald, 1994).
2. Young drivers also have distinct skill deficits resulting from a lack of driving experience, particularly in the areas of:
 - hazard perception and hazard management skills
 - perception and interpretation of information such as curvature and gradient of the road
 - braking
 - steering
 - adjusting speed to compensate for changing road conditions and circumstances
 - maintaining proper lane position, accelerating and decelerating smoothly and changing speed.
3. Students need to develop an understanding of how inexperience affects their safety as drivers and how supervised driving practice provides the opportunity for them to gain experience and develop hazard management skills.

Overconfidence

1. Young drivers often have an inflated view of their own driving ability which can result in them misjudging the risks present in the driving situation.
2. Young drivers often fail to appreciate that there is more to driving than just vehicle control which can result in an over-estimation of driving ability, an over-confidence in the approach to their driving, and an underestimation of the risks involved in driving (Road Safety Council, 2005).
3. If learner drivers do not receive enough diverse, supervised driving experience, the 'safe mistakes' they make early in their learning to drive process, may result in an inaccurate perception of their own ability (Newman, DiPietro, Taylor & Green, 2001).

5.1

ACTIVITY 5.1

DRIVING TRIANGLE

PLANNING AND PREPARATION

- Family information sheet – *Safety tips for avoiding crashes* (page 88) – photocopy one per student or send as an email
- Internet access and screen for viewing

PROCEDURE

DRIVING TRIANGLE

- As a stimulus for this activity show a current road safety advertisement from the Road Safety Commission. Choose an advertisement that will resonate with the cohort and establish a platform to start discussing why road crashes happen.

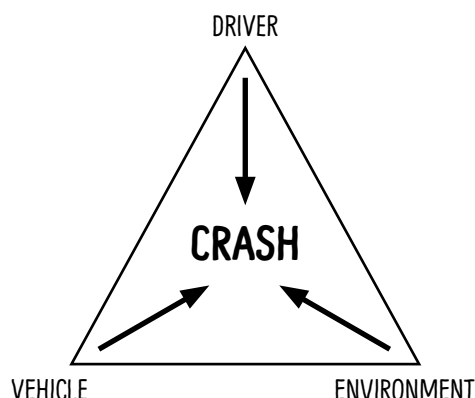


FIND OUT MORE

Road Safety Commission
Campaigns

<https://www.rsc.wa.gov.au/Campaigns>

- Draw the 'driving triangle' on the board and label as shown.



- Explain that road crashes are the result of the interaction of the driver, the vehicle and environment (both inside and outside the vehicle). Explain that a driver's characteristics and actions contribute to over 90% of crashes. Very few crashes are the result of the vehicle's condition or environment.
- Write 'driver', 'vehicle' and 'environment' on the board and conduct a **brainstorm** (page 168), or use three sheets of paper around the room to conduct a **graffiti walk** (page 169). Use either strategy to collect a list of factors and behaviours that relate to each heading. Examples are provided below.

DRIVER	VEHICLE	ENVIRONMENT
Inexperienced	Foggy windscreen	Wet weather
Overconfident	Faulty brakes	Road works
Risk taker	V8 engine	Night time
Angry	Headlights not working	Peak hour traffic
Drunk	No seatbelts	Aggressive passenger
Tired	Small car	Faulty traffic signals
Not wearing a seatbelt	4WD	Corrugated road
Using mobile	Motorbike	Wildlife on the road
Drinking a hot drink or from a water bottle	No rear or side mirrors	Unsealed road
Looking for something in a bag		Sunset
Talking to someone in the back seat		

5. Share and discuss responses giving more time to driver characteristics and behaviours.
6. Select several driver characteristics or behaviours and ask students to identify decisions that would change the outcome in a traffic situation. For example:
 - a tired driver – swap drivers every two hours or don't get behind the wheel of a vehicle
 - a driver who has consumed alcohol – call a family member or friend for a lift.

PROCESS

1. Ask students the following questions. Discuss responses.
 - Which vehicle factors would contribute to a crash?
 - What decisions can drivers make to reduce their crash risk?
 - Knowing that the driver is usually responsible for a crash occurring, how will this information influence your driving in the future?
 - What could a new driver do to reduce their crash risk? (*Restrict number of passengers, don't drink and drive, plan ahead and reduce distractions in the car, participate in as many hours as possible of supervised driving practice in a range of conditions prior to driving solo [120 hours can reduce the crash risk for P plate drivers]*).



SUPPORT ACTIVITY

1. Conduct a modified version of *Activity 5.1 Driving triangle* by explaining the words: crash, risk and danger. Select one or two driving risks typically seen by students and discuss ways to reduce these risks.
2. Process the task as above.



PARENTS & FAMILY

1. Distribute/email to all parents/carers the Family information sheet *Safety tips for avoiding crashes* (page 88).



AT HOME TASK

1. Encourage students to access the Department of Transport's road rules theory test quizzes to begin building and consolidating their knowledge of road rules.



FIND OUT MORE

Department of Transport
Road rules theory test quiz
<https://www.transport.wa.gov.au/licensing/road-rules-theory-test-quiz.asp>

SAFETY TIPS FOR AVOIDING CRASHES

Having a licence = Freedom and independence

Having a licence = Responsibilities

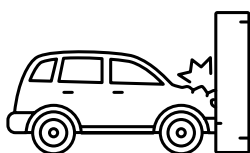
Having a licence = A positive attitude towards safe driving

Having a licence = Complying with the road rules

Most young drivers stay safe however they are statistically more likely to have more crashes and make more errors than more experienced drivers.

Talk with your teenager about how to avoid a crash by using these safety tips.

Avoiding a single vehicle crash (or veering off the road to the left)



1. Take note of and comply with danger signs and hazard signs.
2. Stay on the road. Don't drive off the main part of the road unless slowing down to stop.
3. Stay alert. Don't drive when tired or becoming tired. Be aware of the early signs of fatigue.
4. Drive to the conditions.

Avoiding a crash by turning across another driver's path, or driving straight ahead at an intersection



1. Make eye contact with other drivers.
2. Slow down before entering intersections and look out for turning vehicles.
3. Avoid changing lanes near intersections and never assume that another driver will give way.
4. Always stop at a red light.

Avoiding rear end crashes



1. Concentrate.
2. Don't travel too closely to the car in front even when driving slowly (2 second rule).
3. Stay alert and do not lose concentration even when traffic is not moving or moving slowly.
4. Keep distractions to a minimum.

Be on the look out for pedestrians



1. Slow down near shopping centres, schools and busy pedestrian areas.
2. Slow down and look for pedestrians crossing driveways and between parked cars.
3. Be aware of pedestrian crossings.
4. Where possible, make eye contact with pedestrians crossing the road.

ALWAYS drive to the conditions.

The Keys4Life Program is a Road Trauma Trust Account funded project approved by the Minister for Road Safety and supported by the Road Safety Commission.

ACTIVITY 5.2

DRIVING RISKS

PLANNING AND PREPARATION

- Activity sheet – *Driver cards* (page 91) – cut into cards
- Activity sheet – *Environment cards* (page 92) – cut into cards
- Activity sheet – *Vehicle cards* (page 93) – cut into cards
- Activity sheet – *Wild cards* (page 94) – cut into cards
- Strategy sheet – *High and low risk* (page 174) – cut into one set of signs
- Strategy sheet – *Decision-making model* (page 175) – enlarge to A3 – one per group
- Internet access and screen for viewing



It is suggested that the driver, environment, vehicle and wild cards are each photocopied on different coloured paper to help students when forming driving triangle groups.

PROCEDURE

DRIVING RISKS

1. Revise the three causal factors of road crashes identified in Activity 5.1 Driving triangle.
2. Show a road safety advertisement to introduce this activity. Choose an advertisement that will resonate with the cohort and one that will introduce the concept of driving risks.



FIND OUT MORE

Road Safety Commission
Campaigns

<https://www.rsc.wa.gov.au/Campaigns>

3. Divide the class into groups of three.
4. Give each group a driver, environment and vehicle card.
5. Ask students to discuss the scenario created by their three cards to determine the:
 - associated risks
 - strategies that could reduce the level of risk to the driver, passengers and other road users.
6. Ask students holding the driver card to move onto the next group. This will form a new scenario for discussion.
7. Repeat this procedure several times to allow students to discuss a range of scenarios.
8. Keep students in groups.
9. Set up a **values continuum** (page 171) by placing a 'high risk' sign at one end of the room and a 'low risk' sign at the other.
10. Ask groups to stand at a point along the continuum that represents the level of risk for the final scenario they discussed.
11. Invite groups to share their scenario and provide reasons for their position on the continuum.



This will allow students to consider their own opinion about risky behaviour and hear others' opinions.

12. After sharing, allow groups to move on the continuum if they feel their scenario is of higher or lower risk behaviour than previously decided.
13. Give each group a 'wild' card.
14. Explain the card describes a type and amount of alcohol or other drug. Groups should decide if the wild card changes the level of risk for the driver and what strategies could be applied. Groups may also decide to change their position along the risk continuum.
15. Listen to one or two scenarios at various points along the continuum. Emphasise the need to describe a risk reduction strategy.

PROCESS

1. Ask the following questions. Discuss student responses.
 - In the scenarios you discussed, which factor – driver, vehicle or environment – made the largest difference to the possible harm in each situation? Why?
 - Did the wild card increase the level of risk in all driving situations? Why? (*The driver's reaction times and ability to make safe decisions would be affected*).
 - What else might affect a driver's ability to make a safe decision? (*Some examples – emotions, temperament, wanting to get somewhere in a hurry, use of alcohol or other drugs, friends, or the situation such as an emergency*).
 - What are some ways drivers can stay safer? (*Some include – plan ahead, don't drive tired, intoxicated or under the influence of drugs, maintain the vehicle, limit passengers, and make sure everyone wears a seatbelt*).
 - How confident are you to make decisions that affect your safety in traffic?
 - Do you have responses that you know would be effective when faced with negative influences from friends or peers? What are they?
 - Can you assertively communicate concern about your safety in different traffic situations such as driving with someone who has been drinking alcohol or taken drugs?

2. Conclude the activity by instructing students to stay in their small groups and to use the scenario created by the four final cards to work through the **decision-making model** (page 175).
3. Ensure students select a safe outcome for their scenario. If students are unfamiliar with how to complete the decision-making process, explain the steps (eg generate options, consequences for each option, and select the safest option) and why it is important to use this process in challenging social and traffic situations in terms of their own and others' safety. Listen to one or two group responses (ie the options, consequences and the choice that was made).


















SUPPORT ACTIVITY

DRIVING RISKS – SCENARIO

1. Using the same four activity sheets, select one of each card and read these to the class as a story.
2. Ask students to identify what might be dangerous in this 'story'. Talk about what the driver could do to avoid having a crash.
3. Conduct a **snap decisions strategy** (page 171) with the driver in the 'hot seat' listening to one student prompting risky behaviour and the other student encouraging safer choices.
4. Listen to the driver's decision based on the comments heard.
5. Discuss the impact of passenger and peer influence and ways to resist negative influences.
















DRIVER CARDS



 DRIVER inexperienced	 DRIVER 17 year old male	 DRIVER changing radio stations
 DRIVER overconfident	 DRIVER 18 year old female	 DRIVER over 0.05%BAC
 DRIVER risk taker	 DRIVER been driving for 10 hours	 DRIVER feeling angry
 DRIVER driving 10 km/h over speed limit	 DRIVER just lost their job	 DRIVER P plater
 DRIVER talking on mobile phone	 DRIVER first time driving solo	 DRIVER not wearing a seatbelt

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ENVIRONMENT CARDS

 <p>ENVIRONMENT</p> <p>heavy rain and strong winds</p>	 <p>ENVIRONMENT</p> <p>road works to fix pot holes</p>	 <p>ENVIRONMENT</p> <p>busy city street</p>
 <p>ENVIRONMENT</p> <p>crying child passenger</p>	 <p>ENVIRONMENT</p> <p>drunk passenger</p>	 <p>ENVIRONMENT</p> <p>traffic lights not working</p>
 <p>ENVIRONMENT</p> <p>corrugated road</p>	 <p>ENVIRONMENT</p> <p>long, straight road</p>	 <p>ENVIRONMENT</p> <p>peak hour on freeway</p>
 <p>ENVIRONMENT</p> <p>kangaroo on road</p>	 <p>ENVIRONMENT</p> <p>local road, late at night</p>	 <p>ENVIRONMENT</p> <p>unsealed road</p>
 <p>ENVIRONMENT</p> <p>winding road with trees near to the edge</p>	 <p>ENVIRONMENT</p> <p>loud music playing</p>	 <p>ENVIRONMENT</p> <p>driving into the sun</p>

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VEHICLE CARDS



  <p>VEHICLE</p> <p>towing a trailer</p>	 <p>VEHICLE</p> <p>faulty brakes</p>	 <p>VEHICLE</p> <p>engine overheating</p>
 <p>VEHICLE</p> <p>flat tyre</p>	 <p>VEHICLE</p> <p>boot lid doesn't close properly</p>	 <p>VEHICLE</p> <p>dirty windscreen with no fluid for cleaning</p>
 <p>VEHICLE</p> <p>faulty indicators</p>	 <p>VEHICLE</p> <p>high-powered engine</p>	 <p>VEHICLE</p> <p>bald tyres</p>
 <p>VEHICLE</p> <p>brake lights not working</p>	 <p>VEHICLE</p> <p>broken tail lights</p>	 <p>VEHICLE</p> <p>engine cuts out intermittently</p>
 <p>VEHICLE</p> <p>tyres at low pressure</p>	 <p>VEHICLE</p> <p>headlights not working</p>	 <p>VEHICLE</p> <p>windscreen is fogged up</p>

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WILD CARDS

 WILD 2 cans of vodka and lemonade	 WILD 3 full-strength beers	 WILD water
 WILD a joint	 WILD small bottle of alcoholic cider	 WILD 2 mid-strength beers
 WILD 3 glasses of wine	 WILD 2 cold tablets	 WILD can of Coke
 WILD a cappuccino	 WILD 5 cans of bourbon and Coke	 WILD 3 shots of vodka
 WILD 2 analgesics	 WILD 3 cans of pre-mixed drinks	 WILD 2 cans of beer

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