

Module Three

Managing Hazards

Hazard identification and management



Aim

The aim of this module is to enable students to describe driving hazards and put an Action Plan in place to deal with these.

Learning Outcomes

At the end of this module students will be able to:

- identify driving hazards and describe them in terms of crash risk;
- develop an *Action Plan* to manage driving hazards.

Standard

This module of work is designed to meet the requirements of:

Standard 3465 Core Driving Knowledge and skills

Describe driving hazards and risk reduction

Level 2, Credit 3

The Standard setting body for this unit standard is Tranzqual, the Transport and Logistics Industry Training Organisation. A student workbook and assessment material for this unit standard can be downloaded from: <http://www.tranzqual.org.nz/downloads.php>

Enter the Core Driving Material as the category and the number of the unit standard into the keywords area. If your school is not currently accredited to assess this unit standard contact Tranzqual on 0800 478 257 for advice on the best option for your school.

Links with the New Zealand Curriculum

Curriculum links have been aligned with the New Zealand Curriculum Framework

Health and Physical Education

- **The Concepts**
Hauora - the four dimensions of well-being
Attitudes and Values - a positive, responsible attitude on the part of students to their own well-being
- **The Strands**
Personal Health and Physical Development
- **Sub-strand**
Safety Management Level 5, 6 and 7

Teacher Notes

- 1 A Student Workbook is available for this Standard. You could ask students to complete segments of this for homework. Alternatively, you could ask them to keep a Journal for recording purposes.
- 2 The Official New Zealand Road Code is available from book stores or online.
- 3 “The area of the brain controlling motor skills develops early. The frontal lobe isn’t fully developed until you are 25. The frontal lobe governs matters like risk assessment, emotional control, hazard detection and the ability to think about the consequences of actions. This is one reason teenage drivers are 19 times more likely to crash in their first 6 months of driving solo than in the months when they were supervised and it’s one of the reasons why drivers under the age of 25 are so over-represented in crash figures.” (AA *Directions* A Waikato University / AA Driver Education Study set up by Dr Robert Isler)

For this reason this is an especially important module for students to allow them to practise hazard identification.

Pre Knowledge and Experience

Individual students will bring a range of existing knowledge and experience to this module of work. This will have been gained from a range of sources which could include:

- Own experience of risky behaviour and its management
- Work done in Health and Physical Education throughout schooling
- Social marketing, advertising campaigns
- Other Police Youth Education Service *Road Safe Series* programmes
- Parental modelling
- Defensive driving or pre driving education
- Licensing system
- Discussions with peers

Overview

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Teaching

Lesson One

What are the Risk Factors?

Resources

Copysheet 1 *Jase's New Car*

Copysheet 2 *Risk Factors* cut up in to sets

DVD *Hazards*

Note: Two versions of each hazard clip have been provided. In version 2 the hazards have been identified.

Definitions

Driving Situations - these are specific driving actions such as moving into traffic, moving on the road, moving with the traffic flow, moving through traffic, moving past other traffic, moving back into traffic, moving out of traffic

Hazards - any object or situation that contains an element of potential or actual danger for a driver, for example sudden heavy rain

Risk Factors - driver, vehicle, weather, light, road and traffic



Activities

- Explain to students that they are about to view some driving footage. They will identify hazards the driver faces. Show some or all of the clips on the DVD in turn to the class. First show version 1. After this ask students to discuss the driving hazards they saw. Then play version 2 of the clip where some of the hazards have been identified. Record these on the board. Students will see if they picked all the hazards that have been circled. After all the clips have been shown:

Ask: How good were you at hazard identification?

How good do you think the drivers were at managing hazards?

What advice would you give to drivers about this?

- Explain to the class that they are going to be doing some lessons on the hazards drivers face and ways to manage these to avoid the risk of a crash. First they will look at risk factors - driver, vehicle, weather, light, road and traffic. Put a chart framework like the one on the next page on the board. Explain that as you read a story to them you want them to think about what the risk factors are that are hazardous for the driver. Read the story *Jase's New Car* to the class. Work with them to complete a chart like the one on the next page:

Risk Factors for Jase

Driver	Vehicle	Weather	Light	Road	Traffic
excited	no WoF	raining	rain would have reduced the light	motorway	lots of other cars
angry about parking ticket	bald tyres			need to change lanes	slow car in front
distracted	can't see out rear vision mirror			crash barriers	car travelling too close
under pressure from passengers	no side mirror			slippery road	
inexperienced	car wobbles at speed				
difficulty steering					

Ask: *What comment can you make about the number of driving hazards that Jase had to deal with?*

Do you think he handled them well? Why or why not?

What driving situations was Jase involved in that were hazardous? (moving past other traffic and moving out of traffic on to the off ramp)

What could he have done to reduce the risk of a crash?

- Put students into groups. Give each group a set of cards made from **Copysheet 2**. Some blank cards are included so that students can add examples of their own. Explain to students that these are all risk factors that can prove hazardous to drivers. Ask them to group them under the headings *weather, light, driver, road, traffic vehicle*. Check each group's work for accuracy. Ask students to share any personal examples they may have had with driving hazards.

Homework

If students are using the Student Workbook they could complete some tasks.

Take Care with that Manoeuvre

Resources

Copysheet 3 *Matching Driving Situations*

Copysheet 4 Matching Crash Positions

Reference - See section *About Driving* in the *Road Code*

Teacher Note: Students need to be familiar with 7 driving situations, 6 risk factors and 6 crash positions.

Definitions

Driving Situations - these are specific driving actions such as moving into traffic, moving on the road, moving with the traffic flow, moving through traffic, moving past other traffic, moving back into traffic, moving out of traffic.

Potential Crash Positions - in front, from behind, from the side, moving past other traffic, other traffic moving past, and oncoming traffic driving situations.



Activities

- Explain that some driving situations that are more hazardous than others.

Brainstorm with the class some driving situations and record these on the board. The list will include such things as moving into traffic, moving along with the flow of other traffic, passing other traffic, reversing, doing a U-turn, crossing lanes, going through intersections, and moving off the road.

Ask: Do you think some of these driving situations would be more hazardous than others? Why or why not?

How do each of these hazards increase the likelihood of a crash?

- Give each student Copsheet 3. Alternatively they could work in pairs. Ask them to match the driving situation with the picture it best fits.

Ask: In which positions do you think a crash is most likely to occur?

Record students' ideas on the board. They could include:

- vehicle in front
- vehicle behind
- moving past other traffic
- other vehicle approaching from the side
- other traffic moving past
- oncoming traffic

Ask: What could happen in each of these positions? eg the car behind could rear end you if you stopped quickly or the driver wasn't watching.

What advice would you give to drivers when they find themselves in these positions?

Give each student **Copysheet 4**. Ask them to match the crash position on the left with the picture it best fits on the right.

Teacher Note: Answers **Copysheet 3:** 1E, 2F, 3A, 4D, 5G, 6B, 7C.
Copysheet 4: 1A, 2C, 3B, 4D, 5E, 6F

Homework

If students are using the Student Workbook they could complete some tasks.

Lesson Three

Reducing the Risk

Resources

Copysheet 5 *Scenarios* cut into individual cards

Copysheet 6 *Risk Reduction Techniques*



Activities

- Demonstrate how to complete **Copysheet 6** using one of the scenarios from **Copysheet 5**. You may want to remind students of driving situations, risk factors and potential crash situations from lessons 1 and 2.
- Put students into groups. Give each group one of the scenarios, and **Copysheet 6**. They use information from the scenario to complete **Copysheet 6**. They use information from the scenario to complete **Copysheet 6**. They can repeat the activity using other scenarios.

Ask: What have you learnt that could help you as a driver, or potential driver?

Homework

If students are using the Student Workbook they could complete some tasks.

Lesson Four

Dealing with Driving Hazards

Resources

Copysheet 7 *Situational Awareness Cycle Sample*

Copysheet 8 *Situational Awareness Cycle*

Photopack - Hazard Identification.

Reference

- The Official New Zealand Road Code - see section *About Driving* for information on *Hazards and Emergencies*

Definition

Situational Awareness Cycle - this is the cycle of searching for hazards, assessing the risk and reducing the level of risk to avoid a crash.

Driver Distractions - these are things that reduce the situational awareness of the driver, such as using a cell phone, eating or drinking, external distractions, adjusting vehicle controls, smoking and talking.



Activities

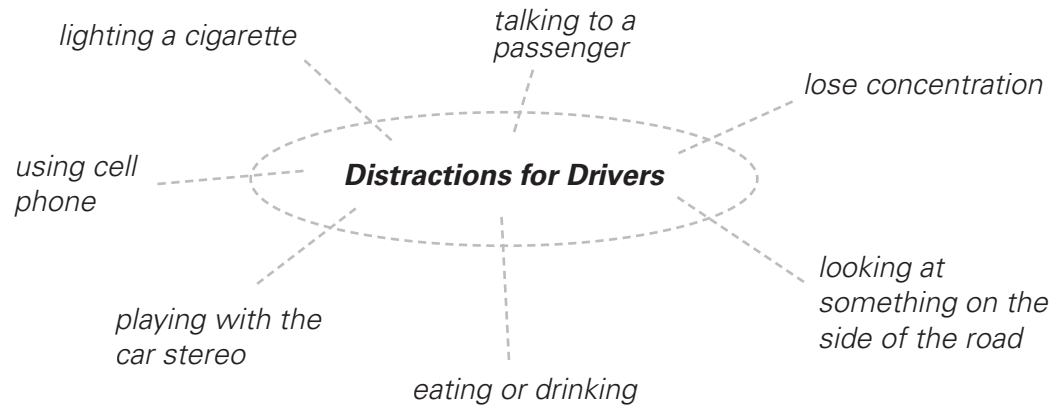
- Show the class Photo 1 from the Photopack. Hand out **Copysheet 8** *Situational Awareness Cycle* and complete it with the class using Photo 1. Note that **Copysheet 7** provides sample answers for the teacher.
- Put students into small groups. Give each group a copy of **Copysheet 8** and one of the photos from the photopack. The group completes the *Situational Awareness Cycle*, to show how they would reduce the risk of a crash. Check each group's understanding. Groups could swap cards if more practice is needed.

Ask: Why do you think it is called a situational awareness cycle?

What sort of things might distract a driver?

Record students' ideas on the board in a diagram like the one on the next page.





Ask: *What advice would you give to a driver about distractions?*

- Explain that all the time drivers are having to make judgements about such things as how safe it is to pass another vehicle, to pull in to other traffic, to change lanes or to move through an intersection. This is called a gap selection.

Put students into pairs. Ask them how a driver would decide if it was safe to carry out these manoeuvres. Take responses. Students should consider judging speed, judging distance and anticipating the behaviour of other traffic.

Homework

If students are using the Student Workbook they can complete some tasks.

Jases' New Car

by Janice Marriott

Jase had 4 passes! The bit of paper he'd just pulled out of the envelope told him. This called for a major party.

A barbie at the beach, with all the mates.

Just two small problems. One: The weather looked bad, and two: he was the only one with wheels.

No worries. They'd manage.

They all gathered at his place with the beer, sausages, loaves of bread and tomato sauce. Matt, Simon, Henare, Dawn, Ang and Jen.

"Sweet you've got a car," said Dawn. Jase just shrugged. He wasn't telling her how he'd slaved his guts out for Mr Lucas at the demo yard all Term 4 in the weekends and evenings, and every damn day of summer. Five bucks an hour and that was before tax. And Mr Lucas drove a hard bargain for the car too. Jase finally got it for \$850.00. Mr Lucas said he was giving it away.

"Let's go."

They bunched up on the footpath. There was a little roll of paper waving from under the one windscreen wiper. A ticket. The trouble with living in town and not having a garage was parking wardens. They checked old heaps like his with no WOF, no rego. He couldn't get it with those bald tyres and a clutch from hell. Fined. \$200. Where was he going to get that money from?

They opened the Starlet's doors. O.k. so it was a piss awful model but he was going to turn it into a rally car, when he had time. He just needed time, and money. The hand brake was a bit soft, the rust was bad but not that you'd notice, and the tyres - Matt kicked a back tyre.

"Bald as Mr Fenny's head."

They laughed. Mr Fenny taught them science.

"You should be able to fit a matchstick in the treads," said Simon, always cautious.

"You don't say." Jase stood over him, threatening. "And who's got a matchstick? I've given up smoking." He said this in a mock goody goody tone.

Henare, Ang and Jen Laughed.

"Chill out, Simon," said Henare. "We've got a party on, right?"

They squeezed in. Everyone blamed Matt for taking up all the room. He was a back in the junior provincial side and he was big.

"Girls sit on guys. It's the only way," said Simon.

When they hit the motorway on ramp it started to rain. Jase couldn't see out the rear vision mirror because of all the heads blocking his view and he didn't have a side mirror so he floored



the accelerator to get way ahead of anything that might be coming up. The back wobbled a bit, just enough to throw Ang across Simon and Henare.

"Yay. Do it again," giggled Henare as Ang started fighting him.

The car powered up the motorway. Everyone shouted and complained about being squeezed half to death.

"Hey, anyone been in that parking building in town where you can start on the top floor and wind down, and down?"

He tried to smile into Dawn's eyes in the rear vision mirror. She'd remember last night o.k. Bump bump. Cat's eyes. He swerved across a lane. Someone tooted. He banged the horn back at them.

"Cool," said Ang.

Off ramp to the beach coming up. Jase had to change lanes to get to the off ramp so he pumped the accelerator again and roared across the lane, hoping there was nothing behind him. His steering was crazy, because Matt was leaning on his left arm moaning that his legs had gone to sleep, cramped in the space over the clutch and hand brake.

"Cut yer heads off!" Jase yelled. Some of them tried to duck so he could see out the rear vision mirror. Some of them tried to swivel round to look. Lots of squealing and swearing.

Made it! Suddenly they were away from the flow of the traffic, on a skinny corkscrew off ramp.

Jase wound down the window, got a face full of rain, then he looked forward again and the corner was there, suddenly, by his right window. He pulled the wheel to the left, like when he'd been rally driving. Matt was in his way. He tried to oversteer. Then he changed his mind and turned the wheel in the direction of the corner.

The back went out. Everyone was thrown around. He started to catch it. He knew how to. He'd read heaps of car magazines. But the stupid Starlet responded so slowly. Damn car! Then it straightened.

He'd saved them, like he knew he could, just took skill. He smiled and wondered what Dawn thought of him now. It had been a hellish tight corner.

Bang! The car swung sideways again. He oversteered to correct it and it shot out the other side, fishtailing wickedly. The car was sitting on its haunches. The steering was rolling around. He could feel the tyres folding over the rims. The throttle wasn't responsive when he floored it. The car wallowed over one tyre and slid along the crash barrier.

The grinding noise was incredible. Jase's ears rang. Sparks shot past the window. The car glanced off the barrier. Jase coaxed the foot brake and tried to push Matt out the way to wrench the hand brake up. The car stopped. Silence. No one said a thing for a while. No one moved. Then,

"Better check the damage, mate," said Simon.

Jase got out, stiff as. He started trembling. Everyone else got out. At least the doors still opened and shut. Simon, Ang, and Henare checked the wheels weren't bent. The outside rear tyre had blown and was sticky as toffee. Not really drivable, especially without a spare. And suddenly Jase didn't feel like trying.

Simon, Ang and Henare wouldn't get back in, anyway.



Matt and Dawn were for getting in and getting away, to the beach, to party. They passed a beer between them, and leant on the crash barrier sipping, watching cars whiz past on the motorway above.

Jason felt anger building in him. Bloody Dawn. Why was she with Matt?

"It's pissing down, now. Useless for a barbie anyway," said Simon, coming up beside him.

Jase got himself together then asked, "What d'we do now? How do I get this heap of tin off the road before someone hits it?"

Ang said it'd be cool if someone had a torch and they could stand on the ramp and stop traffic and the others could push the car down the ramp, off the road then they could all hitch home.

Jase's car. All summer's work. Gone. He couldn't just abandon it. He felt gutted. He walked away from Simon and Ang, furious he'd worked that hard and he didn't even have the money for a tow.

"Torch, anyone?" asked Ang.

"You must be kidding," sneered Matt who'd stopped giggling and become hostile.

"Any other ideas?" asked Jase.

No one said anything.

They all raised their heads when they heard it - a siren. A cop car. It was sweeping down the off ramp towards them.

At least they'd get a ride home now!



Risk Factors

Cut up individual cards to make sets for group work. Include blank cards so that students can add their own examples.



fog	sun in driver's eyes
tired	car travelling too close
dusk	uneven surface
windscreen wipers don't work	greasy surface
very heavy traffic	wind gusts
ice on road	emotionally upset
fogged up windows	dawn
gravel surface	straight road
faulty brakes	driver is unlicensed
surface water	cyclists
herd of cows crossing the road	windy, country road
driver is drinking	clear sunny day
potholes	pedestrians crossing

Matching Driving Situations

Instructions

Below is a list of manoeuvres. Match each one with the manoeuvre illustration at the bottom of the page with which you think it best fits.

Do this by putting the letter of the illustration (**A, B, C** etc) in the circle beside the manoeuvre.

1 Merging with other traffic



2 Driving along the road



3 Driving through intersections



4 Passing other traffic



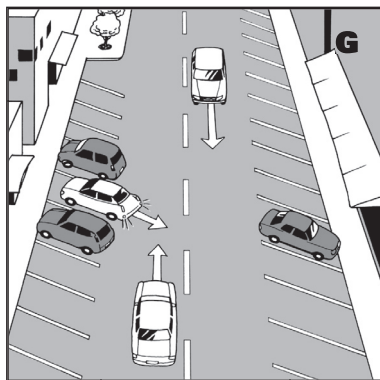
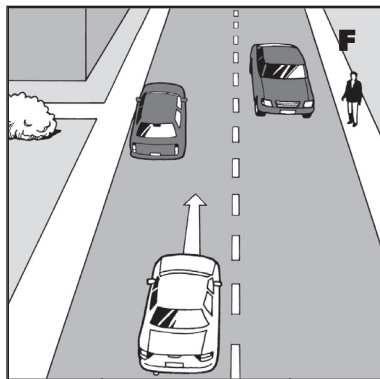
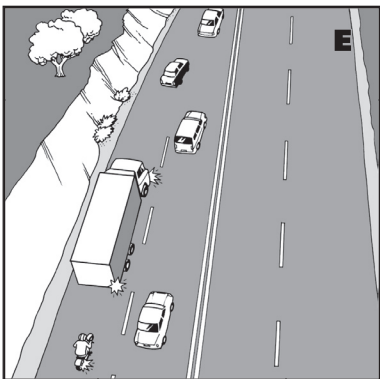
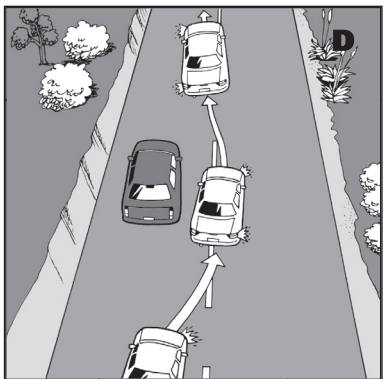
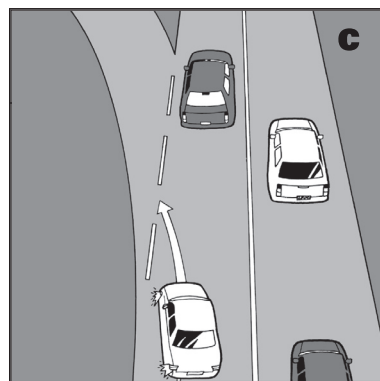
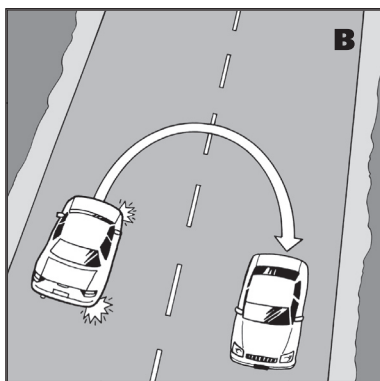
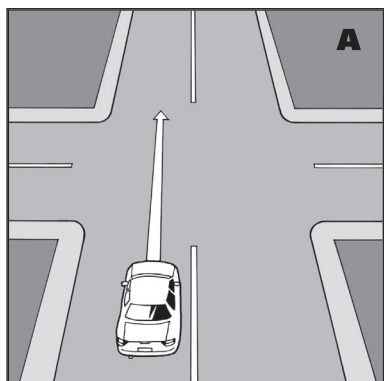
5 Reversing



6 Doing a U-turn



7 Moving out of the flow of traffic



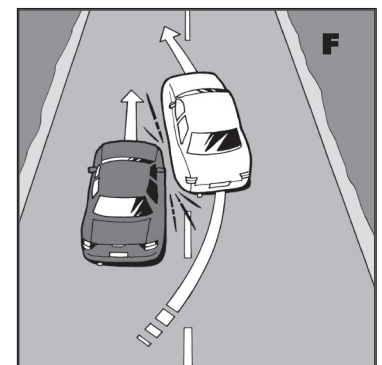
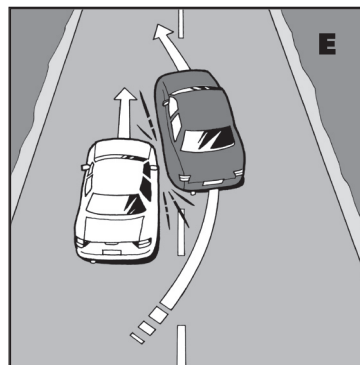
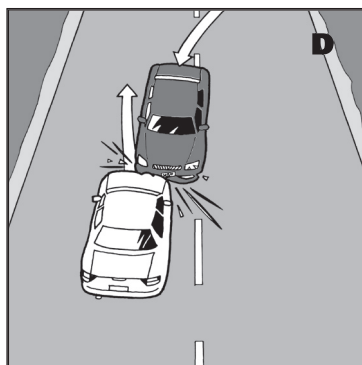
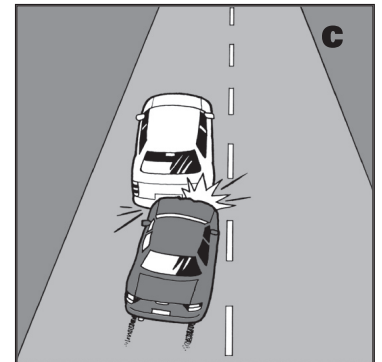
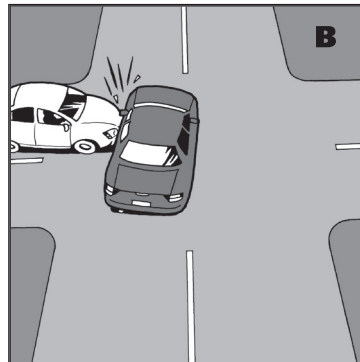
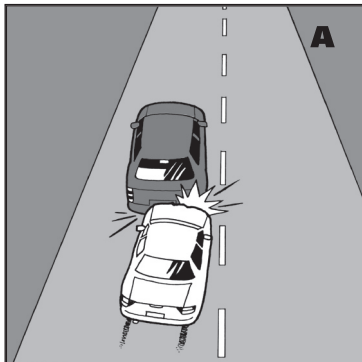
Matching Crash Positions

Instructions

Below is a list of crash situations. At the bottom of the page are illustrations of crash situations. Imagine you are the driver of the white car in each drawing. Match each crash situation with the crash illustration with which you think it best fits. Do this by putting the letter of the illustration (**A, B, C** etc) in the box beside each crash situation.

- 1 Car in front of you
- 2 Car behind you
- 3 You approach another vehicle from the side
- 4 You are driving facing oncoming traffic
- 5 Traffic moving past you
- 6 You move past other traffic

○
○
○
○
○
○



Scenarios

Scenario 1

Michelle is a new driver who has had little experience driving. She is driving an unfamiliar manual car. She is driving home on the motorway from a friend's place at 6pm on a summer evening. She has just indicated that she plans to take the left hand off ramp when she sees it is blocked by a queue of cars.

Scenario 2

Manu has had his Restricted Licence for 5 months, but has been driving motor vehicles and farm machinery for a number of years. He is driving his Dad's Holden Commodore which is serviced regularly. It is just getting dark and starting to drizzle. Manu has started to overtake the truck in front, when he sees a car approaching from the other direction that has crossed the centre line as it passes a slow vehicle.

Scenario 3

Jane has been out at a party. It is 2am and she is driving home. She has just got her full licence and is driving her Mum's car while she is away. It is a clear night and there isn't much other traffic. Jane turns in to a side street and then realises she has gone the wrong way. She swings straight into a U turn.

Scenario 4

Tim has recently got his full licence and he really enjoys driving, sometimes going a bit fast and showing off. He is driving his Mum's car up to their beach place in Coromandel. He has been driving for 5 straight hours through the night. The sun is just coming up. He hasn't seen another vehicle for hours and gets a real fright when he comes round the corner and sees two horses and riders on his side of the road.

Scenario 5

Laumata has had her restricted licence for 3 months and has recently attended a defensive driving course. She is driving her Mum's new 1600cc motor car down to the supermarket. It is a wet Saturday afternoon and the sky is overcast. She approaches an intersection and sees another car approaching the intersection on her left. There is a compulsory stop there but the car is travelling quite fast.

Scenario 6

Michael has been given his auntie's 1970 6 cylinder Falcon that has been stored in her garage for a number of years. He has never driven a large motor vehicle and is quite nervous driving in heavy traffic conditions. He is taking the car for a test drive on Saturday afternoon and has got caught up in rugby traffic. There is a group of people walking to the stadium and they start to cross the road in front of him without even looking for traffic.



Scenario 7

Roimata has been asked to pick up her cousins from a party as they have been drinking. It is 1.30am and the air is quite frosty. She borrows her brother's car, but she is unaware that his brakes are not functioning well. She is driving along quite slowly and there is a car following. Suddenly a possum races across the road in front of her.

Scenario 8

Rashi is driving her mother's high powered European car for the first time in heavy traffic at 5.30 pm on a Friday. She is on her restricted licence and has only had a few hours driving unaccompanied by a licensed driver. She is looking for a park and sees one on the other side of the road. She wants to do a sharp right turn to get into the angle park before anyone beats her to it.

Scenario 9

Wing Chow is an overseas student driving a high powered Japanese vehicle. He has an International driver licence and has little experience on New Zealand roads. He is doing a right turn from a two lane road into a four lane road. The traffic is heavy.

Scenario 10

Steve is driving down Queen Street on a Friday night with his mates in his brother's Mitsubishi Evo 7. He is at the lights when another Evo 7 full of teenagers pulls up alongside. The light goes green. His mates urge him to drag off the other car.

Scenario 11

Siegfried has just arrived in New Zealand after a long flight from Europe. He has a full licence but is not used to right hand drive vehicles. He rents a brand new Honda Civic GTi at the airport and sets off driving south to find a motel. It is getting late. He sees a motel ahead on his right and starts to indicate. There is heavy traffic coming the other way.

Scenario 12

Jesse is helping his friends move flat. He has a tow bar on his 1977 Toyota and is asked to hire a trailer. He isn't feeling so good as he has a bad cold. He picks the trailer up from the hire centre. It's the first time he has driven with a trailer. He is wanting to pull out into the traffic, but traffic is heavy and the cars are travelling quite close together.

Risk Reduction Techniques

Instructions

- 1. Read your scenario. Identify any risk factors, the driving situation and any potential risk situation.
- 2. Complete the chart below for your scenario.

What are the obvious risk factors?	How does each risk factor increase the possibility of a crash?
1	1
2	2
3	3
4	4
What could the driver do to reduce the risk of a crash without harming any other road user or any passengers in the car?	Answers
	1
	2
	3



Situational Awareness Cycle Sample for Photo 1

SEARCH FOR HAZARDS

What are the potential hazards?

- lane closed
- merging traffic
- traffic backed up ahead
- potential traffic buildup behind

ASSESS THE RISK

How the hazard might develop and endanger your safety

- a car in front might stop suddenly and you could rear end it
- a car from behind might rear end you as you slow down
- another car might speed up and reduce the gap as you are merging
- may not see traffic lights turn red

REDUCE THE RISK

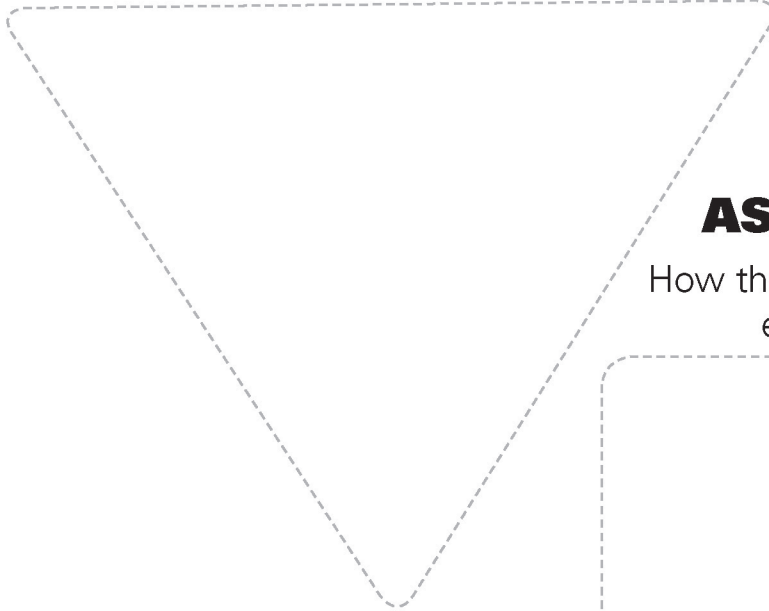
What action to take to negotiate the hazard safely

- pay close attention to the traffic ahead and behind you
- indicate your intention to merge
- select gap for merging carefully
- slow to 30km/h

Situational Awareness Cycle

SEARCH FOR HAZARDS

What are the potential hazards?



ASSESS THE RISK

How the hazard might develop and endanger your safety



REDUCE THE RISK

What action to take to negotiate the hazard safely

