Literacy and numeracy using the road code

Part 1: What is worth knowing as a citizen and a road user?

Bringing in Ideas (35)

These activities provide opportunities for introducing students to the role of active citizenship in safer journeys. They build ideas about citizenship, roads and road hazards, road users, sharing, risk and distraction.

Key Competencies self-assessment rubric

Thinking	Managing self	Participating and contributing	Relating to others	Using language, symbols and text
Critically analyse the factors contributing to safe roads for all citizen road users. Example – describe, explain and justify ways to share the road safely with others, as outlined in *The official NZ road code*.	Act responsibly when using the road as a pedestrian, passenger or driver to ensure all road users travel safely. Example – adopt a "sort it and report it" approach to unsafe road use.	Display awareness of local issues around creating safe roads. Be involved in community issues around safe roads. Contribute to ensure every road user has safe travel. Example – listen, respond and act together to make the roads a system free of death and serious injury.	Interact with others to create safe roads. Example – demonstrate a commitment to safer travel for self, friends, family and whānau.	Interpret and use language, symbols, and text to communicate messages about citizenship through contexts of road users and safe roads. Example–- share safe speed rules, safe road use rules, safe vehicle rules and other rules.

Learning intention: To define citizenship in the context of following the road code.

Differentiated success criteria: We will know we have achieved this because our definition (written, oral, image-based or model prototype) will …

… have several relevant ideas about citizenship in the context of the road code. *For example,* *We think citizenship in the context of the road code is seen in safe, responsible and respectful use of the road network.*
… and explain why these ideas are related to citizenship. *For example,* *We think citizenship is … because/so that …*
… and make a generalisation about citizenship in the context of the road network. *For example,* *We think citizenship is … because/so that …* *Overall we think citizenship is … because [give reasons] … because [give evidence].*

1.1. Ideas about citizenship

You belong, you matter and you make a difference.

What does it mean to talk about citizenship?

Citizenship is about being a member of society. As part of New Zealand society, you belong to a group of people much bigger than yourself, your friends or your family. Whether you are a citizen or permanent resident, you belong, you matter and you make a difference in New Zealand.

Everyone living in New Zealand has certain rights, and laws to back them up.

And we each have responsibilities. These responsibilities can be enforced by laws, rules or they can simply be described as "doing the right thing".

Using roads in New Zealand means you must act lawfully, safely, responsibly and respectfully to make sure to make sure all road users can safely get to their destinations.

In these activities, we use the word citizen to refer to any member of society. This inclusive use covers all learners and road users, be they legally New Zealand citizens, permanent residents or visitors on a temporary visa.

Examples

You have the right to feel safe at school. The school has the responsibility to keep you from harm by providing safe learning environments. You have the responsibility not to bully other students and stop them from their right to feel safe at school.

You have a right to use the roads only if you responsibly comply with legal requirements. The road network is a common good – a resource that we share with others. Every one of us is advantaged in some way by having the rights to using the road. To make it safe for everyone we must use the roads in ways that do not adversely affect the rights of other people who use it. The *official New Zealand road code* is a guide to how to use the roads as a safe and responsible road user and citizen.

You and your family should be able to experience safe travel on the roads. The government and everyone using the roads must work together to provide a safe road system. This includes you using the roads in ways that help you keep your rights and others keep their rights to travel safely.

Rights and responsibilities go together. Without responsibilities we could not have rights.

Being an active citizen means working with other citizens to protect people's rights. Citizenship means taking responsibility for protecting everyone's rights.

Activity 1.1.1: Defining citizenship (What is a citizen?)

With great power comes great responsibility.

Spiderman

Spiderman is a citizen superhero whose mission is to protect citizens who are in danger. Other such superheroes are Superman, Batman, Wonder Woman, Flash and Captain America.

Using what you already know about citizens (they belong, they matter and they make a difference; they have rights and responsibilities), create a citizen superhero.

Your citizen superhero should use his or her powers to help road users act safely, responsibly and respectfully when sharing the roads. These road users can be pedestrians, cyclists, passengers or drivers.

- Invent a suitable name for your road safety citizen superhero.
- Identify some of the rights and responsibilities ordinary citizens have when using the roads.
- Identify the special powers your citizen superhero would need to help other citizens travel safely when sharing the roads.
- Imagine the outfit your citizen superhero will wear when keeping an eye on the road network.
- Draw a picture of your citizen superhero using his or her superpowers to help other citizens travel safely on the roads. Use annotations to describe and explain how your citizen superhero acts safely, responsibly and respectfully when keeping other citizens safe.
- Create the "Code of the Superhero Citizen", outlining the rules of conduct your superhero follows when helping others share the road.
- Share your citizen superhero and rules of conduct with another student. How are they similar and how are they different to the superhero and rules the other student has come up with?
- Share your findings with the class. Look for commonalities – attributes that all citizen superheroes share.
- Write a definition statement based on the similarities between your citizen superheroes. Begin, *"I think a citizen is …"*.

Use the following self-assessment rubric to evaluate your writing.

Prestructural	I need help to define a citizen.
Unistructural	My definition statement has one relevant idea about citizens.
Multistructural	My definition statement has several relevant ideas about citizens.
Relational	… and I explain these ideas. *[because … so that]*
Extended abstract	… and I make a generalisation. *[Overall I think a citizen is (insert claim) because (insert reason) because (insert evidence)*

Use think–pair–share to discuss the following claim made after the release of a new superhero movie.

Citizen superheroes exist in comic books and movies but not in real life.

Write a response to the claim above. Use your thinking about your own citizenship and superheroes to back up your response.

Your audience is your classmates – other young road users.
Choose a purpose from the two options below:

- If you choose to disagree with the claim, you will argue that citizen superheroes can and do exist in real life. Your purpose is to persuade other young road users that they can be "citizen superheroes" when they share the roads with others in safe, responsible and respectful ways.
- If you choose to agree with the claim, you will argue that citizen superheroes do not exist in real life. Your purpose is to persuade other young road users that there are no superheroes waiting to rescue road users. Ordinary citizens have to work to keep other road users safe. The actions of ordinary citizens can and will make a difference.

Use the table below to draft your ideas.

Identify your position on the claim (agree or disagree).			
Provide at least three reasons for your position.	Reason 1:	Reason 2:	Reason 3:
Explain why each one is a reason for your position.	This is a reason because …	This is a reason because …	This is a reason because …
Give examples and evidence to back your position.	For example,	For example,	For example,
Make a generalisation about the overall strength of your argument.			

Road code links	Pathways Awarua modules	Possible evidence for:
Page numbers from 2023 hardcopy. Creating a safer road system p6 **About driver licences** Why have driver licences? p8	RC-100. The Driver Licensing System Part One RC-101. Filling in the driver licence application form RC-102. The Driver Licensing System Part Two	Unit 26625: Actively participate in spoken interactions. Unit 26622: Write to communicate ideas for a purpose and an audience. AS 90053: English 1.5 Produce formal writing.

About driver responsibility Registered person's responsibilities p134 **Supported by Drive:** The driver licence What is good driving?	RC-401. Respecting other road users (horn use, cyclists)	AS 90052: English 1.4 Produce creative writing.

Activity 1.1.2: Identifying rights and responsibilities

Draw your lifeline across the length of a sheet of A4 paper or flat surface in the playground.

Mark each year you have been alive on the line. You will have to measure the total width of the page or playground to work out how to space out your years evenly.

Annotate the lifeline with the rights and responsibilities you have been given at different times in your life. For example, when were you allowed to go to the shops by yourself? When were you allowed a cell phone? When were you put in charge of feeding the cat?

Alternatively make your personal timeline with an online timeline tool like:

ReadWriteThink Interactive Timeline

Timetoast

Time Line Maker

Use think–pair–share to discuss the rights and responsibilities of young people and the ages when they gain them.

Share your experiences with other students in a class discussion.

Discussion prompts

[think–pair–share, or small group or whole class discussion only]

Are there some rights and responsibilities that are commonly given to 5-, 10- or 15-year-olds living in New Zealand? Do you get to keep rights? Describe a time when your rights were taken away. What are some reasons for taking rights away from people?

Think about the rights and responsibilities you have today – right now.

Make a class list of the rights young people have.

Now make a list of up to 5 citizen rights that matter to you.

When you are choosing five rights that matter to you, think of:

- civil rights like the rights to own a property
- political rights like the right to vote and the right to free speech
- social rights like the rights to an education, health care, housing and safe roads, the right to be heard and the right to be treated with respect.

Write the "rights" in the table below. For every right, think of a matching responsibility and write it in the middle column.

Right	Responsibility	Consequences of not meeting the responsibility *(Backed up by a law, rule or a feeling about "doing the right thing")*

Think about how each of these responsibilities works. In the third column, write the consequences of not meeting each one.

Ask yourself, "What happens if I take no notice of any responsibilities?"

What would be the consequences for individuals, families, communities and New Zealand if no one was responsible?

A responsibility can be backed up by a law or a rule or simply by the general view that it is "doing the right thing" or "the way we do things around here".

Use the NZ road code to find a responsibility to do with sharing the roads that is backed up by a law. Find another responsibility that is backed up by a rule. Find a third responsibility that is backed up because people generally see it as doing the right thing.

Write a paragraph about each responsibility, giving reasons for and examples of your claims.

Road code links	Pathways Awarua modules	Possible evidence for:
Page numbers from 2023 hardcopy. **About driver licences** Stage 1 – Learner Licence p 13 About driver responsibility p134 to 148 **Supported by Drive:** The driver licence What is good driving? Understanding mistakes Police, fire and ambulance	RC-100. The Driver Licensing System Part One RC-101. Filling in the driver licence application form RC-102. The Driver Licensing System Part Two RC-400. Responsible driving RC-401. Respecting other road users RC-408. Police and emergency services	Unit 26625: Actively participate in spoken interactions. Unit 26622: Write to communicate ideas for a purpose and an audience. AS 90053: English 1.5 Produce formal writing. Unit 26627: Use measurement to solve a problem

Activity 1.1.3: What sort of road network do you want to share with others?

Read the following quote from author Charles de Lint:

I don't want to live in the kind of world where we don't look out for each other. Not just the people that are close to us, but anybody who needs a helping hand. I can't change the way anybody else thinks, or what they choose to do, but I can do my bit.

What sort of road network do you want to share with other citizens? Do you want share a road network where everyone looks out for each other or do you want to use the road as if you are the only one on the road that matters? Share your thoughts with other students in a class discussion.

Discussion prompts

[think–pair–share, or small group or whole class discussion only]

How could you look out for other road users? How could you take responsibility for others using the road network? How does the NZ road code help us look out for other road users? Can the actions of one person help make the road network safer for road users? Can the actions of one person make the road network more dangerous for road users?

Use the thinking from this discussion to write a letter that you could send along with an application for a driving job. In the letter you should explain:

- the kind of road network you want to use
- your beliefs about being a citizen road user
- the road user rights and responsibilities that are important to you.

Express an opinion.

Road code links	Pathways Awarua modules	Possible evidence for:
Page numbers from 2023 hardcopy. **About driver licences** Stage 1 – Learner Licence p 13 **Supported by Drive:** The driver licence What is good driving?	RC-100. The Driver Licensing System Part One RC-101. Filling in the driver licence application form RC-102. The Driver Licensing System Part Two RC-400. Responsible driving RC-401. Respecting other road users (horn use, cyclists)	Unit 26625: Actively participate in spoken interactions. Unit 26622: Write to communicate ideas for a purpose and an audience. AS 90053: English 1.5 Produce formal writing.

Activity 1.1.4: The "I belong, I matter and I make a difference" citizen doll

Work in pairs to create a citizen doll from a cardboard box (or up-cycled fabric). Make it about 160cm high.

- Think about the age and background of your doll before you start.
- Make the citizen doll a road user "rights and responsibilities" placard to carry or add a slogan or badge to his/her chest.

When the dolls are finished, use them to create a 3-D artwork.

- Arrange the citizen dolls in a cluster in an outside area that makes it look like the dolls are demanding to be recognised as New Zealand citizens – with access to all the rights and responsibilities that go with having a safe journey when using the roads.
- Take a series of photographs (close up and from a distance) to capture the demonstration and its message of "I belong, I matter and I make a difference on the road network".

Produce a news report on the citizen dolls' demonstration. This could be a written report or oral presentation, with short video, images or slideshow. [Recount]

You will need to consider how to use the different aspects of your news report to convey important messages and ideas about citizenship to your audience.

Road code links	Pathways Awarua modules	Possible evidence for:
Page numbers from 2023 hardcopy. Creating a safer road system p6 **Supported by Drive:** The driver licence What is good driving?	RC-100. The Driver Licensing System Part One RC-101. Filling in the driver licence application form RC-102. The Driver Licensing System Part Two RC-400. Responsible driving RC-401. Respecting other road users (horn use, cyclists)	Unit 26625: Actively participate in spoken interactions. Unit 26622: Write to communicate ideas for a purpose and audience. AS 90053: English 1.5 Produce formal writing.

Activity 1.1.5: Do you have a say in what is going on?

Discuss this statement:

Citizenship means we want everyone to feel like they belong – and everyone to feel like they have a say in what is happening.

Discussion prompts

[think–pair–share, or small group or whole class discussion only]

As a young New Zealand citizen, do you feel you belong? Do you feel like you have a say in what is going on? Do you have rights? Do you have responsibilities? What helps you feel like you belong? What gets in the way? What are the downsides of being a citizen? What are the benefits?

Construct and deliver an oral text describing what it is like to be a young person, a citizen and a road user in New Zealand today.

Your text can take the form of a speech, seminar or oral history. You can deliver your text live or as a recorded presentation.

Road code links	Pathways Awarua modules	Possible evidence for:
Page numbers from 2023 hardcopy.	RC-100. The Driver Licensing System Part One	Unit 26625: Actively participate in spoken interactions.

Creating a safer road system p6 **Supported by Drive:** The driver licence What is good driving? Cyclists and motorcyclists	RC-101. Filling in the driver licence application form RC-102. The Driver Licensing System Part Two RC-400. Responsible driving RC-401. Respecting other road users (horn use, cyclists)	AS 90857: English 1.6 Construct and deliver an oral text.

1.2. Ideas about roads and road hazards

To use roads safely, you must learn how to read them.

Can you read a road?

We can learn to read pictures, text and people (body language and facial expressions). Some people can read micro-expressions, which are facial expressions that last for only 1/25 to 1/15 of a second.

Can we learn to read roads?

You can read a road if you can look at it and identify features that make it less safe for road users. You can read it if you can suggest how to manage or deal with those features.

Hunters, divers, gliders, pilots, surf life savers, surgeons, dog control officers, ambulance crew, police, search and rescue teams, the armed offenders squad and the armed forces all follow procedures that ask them to read a situation before they start. They are looking for things that might create problems and planning ahead of time for how they will deal with them if they occur.

When you go out and use the road as a pedestrian, cyclist, passenger or driver, the situation is the same. Safe users "read" the roads they are on.

Reading roads is all about predicting problems before they occur – looking for the things that make a road less safe and thinking ahead so you are better prepared if something goes wrong.

Drive has a lesson on scan hazards. It's important you know how to spot hazards and react to them in the right way. Some hazards are obvious and some are hard to spot.

Scanning for hazards (Drive)

Think of a road you use to travel to school.

- Do you or your driver continually scan for hazards?
- Can you and your driver recognise various driving hazards
- Do you or your driver know how to react appropriately to driving hazards?
- How predictable is the road you are sharing?
- How forgiving is it – what happens if you make a mistake when using this road as a pedestrian, a cyclist, a passenger or a driver?
- How can you manage the risks of sharing the road?

Activity 1.2.1: Defining roads (What is a road?)

Brainstorm all you know about roads. For example, what do you know about the structure of roads, uses for roads, history of roads, costs of roads, roads in the past, materials used in road construction and maintenance, design of roads, safety features on roads, types of roads, dangerous roads, people who work on roads?

You can find many interesting facts and information about roads in the following resources.

The NZ road code – What is a road (under Keeping Left section) p39

State highway FAQ (Waka Kotahi)

Road (Wikipedia)

Use SOLO hexagons to show how the different aspects of a road relate to each other.

- From your brainstorm of everything you know about roads, record each idea or thought on a separate blank hexagon.
- Work together to cut each hexagon from the template and then arrange all the hexagons by tessellating them.
- Explain why you have made straight-edged connections between individual hexagons (using connectives like “because …” and “so that …”).
- When you have finished organising the hexagons, step back and look at the cluster of hexagons (or the vertex where three hexagons come together). Make a generalisation about the nature of the relationship between the ideas (“Overall we think roads are about … because … because …”).
- Share your generalisations about road users.

For hexagon templates:

HookEd Solo Hexagon Generator

Write a definition statement for “roads” based on your hexagon tessellation. Begin:

“I think roads are …”

Use the following self-assessment rubric to evaluate your writing.

Prestructural outcome	I need help to define roads.
Unistructural outcome	My definition statement has one relevant idea about roads.
Multistructural outcome	My definition statement has several relevant ideas about roads.
Relational outcome	… and I explain these ideas. *[because … so that]*
Extended abstract outcome	… and I make a generalisation. *[Overall I think roads are (insert claim) because (insert reason) because (insert evidence).]*

Road code links	Pathways Awarua modules	Possible evidence for:
Page numbers from 2023 hardcopy. What is a road (part of Keeping Left) p39 **Driving skills syllabus** Scanning and hazard recognition Lesson 30 p107	RC-100. The Driver Licensing System Part One RC-101. Filling in the driver licence application form RC-301 Speed and curves RC-310. Flush medians RC-311. Driving on different types of roads	Unit 26625: Actively participate in spoken interactions. Unit 26622: Write to communicate ideas for a purpose and audience.

Supported by Drive: The driver licence Basics of the road What is good driving? The truth about speed	RC-405. Lanes RC-407. Parking rules	

Activity 1.2.2: Can you read a road?

What features make a road less safe for users?

Brainstorm ideas associated with road features. What features might make roads less safe?

Collect these ideas on a whiteboard or a shared online document where they are available as a resource for all students.

Brainstorm prompts

These are to revisit the students' ideas and further develop the hazardous road features resource.

- Think about **hazardous road features that can stop a car rapidly**; for example, immovable features that will put huge forces on people's bodies in a collision.
- Think about **hazardous road features that create poor visibility** on a road; for example, winding roads, sharp corners and steep gradients.
- Think about **hazardous road features caused by road surfaces, inclines and bends**; for example, winding roads, sharp corners, steep gradients and gravel surfaces.
- Think about **hazardous road features caused by other vehicles; f**or example, heavy traffic flow, large trucks.
- Think about **hazardous road features due to physical health issues of the people using the road;** for example, road users suffering from dizziness, nausea, heart attack, exhaustion.
- Think about **hazardous road features due to unsafe use of equipment** by road users; for example, road racers, unsafe use of skateboards or baby strollers.
- Think about **hazardous road features due to livestock**; for example, farmers moving cows for milking.
- Think about **hazardous road features due to young children** on and around the road; for example, roads around schools at the beginning or end of the school day or roads that include school bus stops.
- Think about **hazardous road features due to elderly people**; for example, roads passing retirement villages or nursing homes.
- Think about **hazardous road features due to medication, alcohol or other drug use by people using the road**; for example, roads near pubs or party venues.
- Think about **hazardous road features due to the emotional state of road users**; for example, roads near hospitals, schools or sporting venues.
- Think about **hazardous road features that can distract** road users; for example, accidents, road works, roadside advertising.
- Think about **hazardous road features due to the weather**; for example, rain, ice, wind gusts, sun strike, glare, fog, slips, fallen trees.

So far, we've seen how road hazards can make safe journeys challenging for road users. Now we'll see how a road user can deal with them when they arise.

The NZ road code suggests that hazards include:

- intersections – including driveways
- curves or bends in the road
- pedestrian crossings
- the position or movement of other road users, such as other vehicles, cyclists or pedestrians
- changes in weather and road conditions.

In a small group, identify 5 hazardous road features that a driver might identify when scanning the road.

Find out about dealing with hazards by reading pages 107 to 113 in the NZ road code:

Dealing with hazards

Take notes on the strategies you read about. Talk with other experienced road users to find out other ways of countering or managing these hazards.

Working with a partner, make a set of pocket- or wallet-sized playing cards for a game on managing road hazards.

- Measure the size of the back pocket of a pair of jeans or the cover of a cell phone.
- Use these dimensions as a template to cut out five small rectangles from some stiff card.
- Use the card rectangles to create a set of 10 playing cards: five are Hazard cards and five are Manage a Hazard cards.
- Use the NZ road code to choose five hazard categories and five ways of managing road hazards for the playing cards.
- On the front of each Hazard card, identify the type of hazard and explain why it is a hazard for road users.
- On the front of each Manage a Hazard card, identify one way to counter, manage or avoid a road hazard and which hazards it will manage.
- Share your 10-card set with the class.
- Ask for and give feedback on how you could improve the playing cards.
- When giving feedback on your own or others' cards, use the feedback sandwich:
    - We/you did really well on …
    - We think these parts need to be changed because …
    - Some ways we/you can improve it are …

Combine your improved cards with those created by other students. Design a simple card game based on the idea of managing hazards. Test the game with other students. Revise the game in response to feedback. Write instructions for your game.

Road code links	Pathways Awarua modules	Possible evidence for:
Page numbers from 2023 hardcopy. **Driving skills syllabus** Scanning and hazard recognition Lesson 30 p107 Hazards and emergencies p 107 **Supported by Drive:**	RC-100. The Driver Licensing System Part One RC-101. Filling in the driver licence application form RC-301 Speed and curves RC-310. Flush medians RC-311. Driving on different types of roads RC-405. Lanes RC-407. Parking rules	Unit 26625: Actively participate in spoken interactions. AS 90052 English 1.4 Produce creative writing.

The driver licence Basics of the road What is good driving? Hazards Reading the road The truth about speed		

Activity 1.2.3: Making a model road using found materials

Working in a small group, use recycled materials to make a model of a road network (diorama).

Add 8 features that could make the road less safe, e.g. trees, ditches, intersections, merging lanes, undivided roads. Use the playing cards from the previous activity for ideas.

Present your model to an audience.

- Ask others to “read” your model road, and find the features that would make the road less safe.
- Identify and describe any features they miss.
- Explain why each feature makes the road less safe.
- Suggest ways in which a road user could manage the features. Ask for ideas from your audience.

Write a short report for “road users” to refer to when preparing for a trip on your model road.

Plan what you will write about using the table below. Some examples have been filled in for you.

Your report should:

- describe the features on your road that make it less safe
- explain why these features should be “read” as hazards
- predict how a road user could manage each of these features
- make a generalisation about your road with a suitable safety rating for it.

What can you see?	Why do you think it makes the road less safe?	How can you manage this road feature?
– Describe roadside features that make a road less safe.	*– Explain why the roadside features make a road less safe.*	*– Generalise how we can manage this feature.*
trees	in a collision, a tree brings a car to a rapid stop	
ditches		guard rails
undivided roads	increased chance of a head-on crash	median barriers
high traffic flows		
high number of connecting intersections	traffic travelling at different speeds merge	
	traffic crosses	

Road code links	Pathways Awarua modules	Possible evidence for:
Page numbers from 2023 hardcopy. **When conditions change** Road surface p105 Hazards and emergencies p 107 **Supported by Drive:** The driver licence Basics of the road What is good driving? Hazards Reading the road	RC-100. The Driver Licensing System Part One RC-101. Filling in the driver licence application form RC-301 Speed and curves RC-310. Flush medians RC-311. Driving on different types of roads RC-405. Lanes RC-407. Parking rules	Unit 26625: Actively participate in spoken interactions. Unit 26622: Write to communicate ideas for a purpose and an audience. Unit 3492: Write a short report. AS 90053: English 1.5 Produce formal writing.

Activity 1.2.4: Spotting the hazards on a New Zealand road

In pairs, choose a stretch of New Zealand highway on Google Maps. Note the name of the highway and its length.

Use street view to spot any potential hazards that could make this section of the road less safe for road users.

Record your findings in a data table like the example below.

Region: Road name: Length:		
Identify the hazards in the length of highway	Explain why they are hazards	Suggest ways to manage the hazards

Go to the New Zealand Road Assessment Programme for more detailed risk measures. Discuss your findings with the class.

KiwiRAP

Discussion prompts

[think–pair–share, or small group or whole class discussion only]

What did you find out? What surprised you about the stretch of road you investigated? What recommendations would you make to travellers intending to use the road?

Identify a stretch of road in your local community or use the stretch of highway you researched previously.

Write a travel advisory report on the road for visitors to the region. Use roadside camera images from the Google Maps and data from the KiwiRAP reports to back up your claims. Your report should:

- describe the features on your road that make it less safe
- explain why these features should be "read" as hazards
- predict how a road user could manage each of these features
- make a generalisation about your road with a suitable safety rating for it.

Road code links	Pathways Awarua modules	Possible evidence for:
Page numbers from 2023 hardcopy. Hazards and emergencies p 107 **Supported by Drive:** The driver licence What is good driving? Hazards Reading the road	RC-100. The Driver Licensing System Part One RC-101. Filling in the driver licence application form RC-301 Speed and curves RC-310. Flush medians RC-311. Driving on different types of roads RC-405. Lanes RC-407. Parking rules	Unit 26625: Actively participate in spoken interactions. Unit 26622: Write to communicate ideas for a purpose and an audience. Unit 3492: Write a short report. AS 90053: English 1.5 Produce formal writing.

Activity 1.2.5: Planning a route home, keeping any road hazards in mind

A key skill for road users is to be able to plan a route for a safer journey, keeping road hazards in mind.

Learning how to plan a route is an important skill for:

- pedestrians
- cyclists
- passengers using public transport
- drivers.

For example, when you have only just learnt to drive, it's hard to keep the whole route in your head. When you first bike home from school, you choose a route you are familiar with. When you are returning to your car in a new multi-story car park building, you can walk around several floors before finding it again.

Everyone has a different method of choosing and remembering their route. For instance, driving instructors teach learner drivers how to break the trip into shorter steps and then put those steps together. In Hansel and Gretel (a children's fairy story), Hansel drops breadcrumbs in the forest in an attempt to mark a safe trail back home.

You can find another kind of "breadcrumb trail" along the top of websites: Home page > Section page > Subsection page. These trails help computer users keep track of their position when navigating a website.

In this activity you will design a breadcrumb trail home – finding the best (shortest, quickest or safest) route home for different road users in your local community.

What is the shortest route?

Do you know the shortest route from a fast-food outlet, sports stadium, concert venue, shopping mall or cinema complex to your home?

Print off a road map of your local area. Use the map scale and a ruler to work out the following:

1. Find the shortest distance (straight line) between an identified location (fast food outlet, sports stadium, concert venue, shopping mall or cinema complex) and your home. Write your answer in kilometres. Show your working.
2. Find the shortest total walking distance between the identified location and your home. You will have to use a map to measure the local roads and walkways on the route. Write your answer in kilometres. Show your working. Explain why this distance may be different to the straight-line distance.
3. Find the shortest distance between the identified location and your home for young people who are using public transport. You will have to identify public transport routes and measure the local roads on the route. Show your working. Explain why this distance may be different to the shortest walking distance.
4. Find the shortest distance between an identified location and your home for young people who are using a skateboard or bicycle. You will have to use a map to measure the local roads and shortcuts on the route. Show your working. Explain why this distance may be different to the shortest distance using public transport.
5. Find the shortest distance between an identified location and your home for young people who are travelling by car. You will have to use a map to measure the local roads on the route. Show your working. Explain why this distance may be different to the distance for road users travelling by skateboard or cycle.

How long will it take?

Calculate how long it will take to travel by one of the shortest routes you have identified. To do so, you will need to use:

- the results of your calculations of distances above
- the data on travel speeds in the table below
- one of the equations below (depending on whether you are using km/h or m/s).

Method of travel	Estimated speed in km/h	Estimated speed in m/s
Pedestrian's preferred walking speed	5	1.4
Bicycle	20	
Skateboard	18	
Public transport	25	
Car	35	

Note:

For a shorter distance, you may need to convert the speed in kilometres per hour (km/h) to metres per second (m/s). To do so, divide the km/h by 3.6 (5km/h = 5 ÷ 3.6 = 1.4m/s).

If you are working in kilometres

Use the following equation to complete the data table.

Time (h) = Distance (km) / Speed (km/h)

Method of travel	Total route distance in km	Estimated speed in km/h	Time in hours	Time in minutes

For example:

Distance = 10km

Speed (public transport) = 25km/h

Time would be (10/25) = 0.4 hour = 0.4*60 = 24 minutes

If you are working in metres

Use the following equation to complete the data table.

Time (s) = Distance (m) / Speed (m/s)

Method of travel	Total route distance in m	Estimated speed in m/s	Time in seconds	Convert time in seconds to minutes. (divide seconds by 60)

For example:

Distance = 1600m

Speed (walking) = 1.4m/s

Time would be (1600/1.4) = 1143s = 1143/60 = 19 minutes 3 seconds

Share your results with your class.

Discuss whether the estimated times to get home are realistic. Explain your answers.

How much extra time should you add to allow for unforeseen events when you are walking, travelling by public transport, biking, skateboarding or travelling by car?

What is the safest route?

In New Zealand, cyclists often feel vulnerable when sharing roads with cars travelling at speed in the same shared space. Many design their routes to take advantage of the safest parts of the road network in their local area.

Parents helping their children walk and bike to school or learn to drive will often suggest routes that avoid congested roads or busy intersections.

Do you know the safest route from a fast-food outlet, sports stadium, concert venue, shopping mall or cinema complex to your home?

Use local knowledge and research the crash statistics for roads and intersections in your local area.

The following links may be useful:

Risk Maps for NZ

Crash Analysis System Data map

KiwiRAP risk maps and performance mapping reports

Revealed: Auckland's worst intersections and off-ramps (NZ Herald)

Top 10 suburbs in New Zealand for car crashes revealed

Use this information to rework one of the 5 original shortest routes home so that it is now the safest route.

Mark the changes on your map. Provide an explanation for why each change makes the route safer for road users.

Use think–pair–share to discuss why the shortest, fastest route home may not be the best route home.

Road code links	Pathways Awarua modules	Possible evidence for:
Page numbers from 2023 hardcopy. Hazards and emergencies p 107 **Supported by Drive:** The driver licence Basics of the road What is good driving? Hazards Reading the road The truth about speed	RC-100. The Driver Licensing System Part One RC-102. The Driver Licensing System Part Two RC-310. Flush medians RC-311. Driving on different types of roads	Unit 26623: Use numbers to solve problems. Unit 26627: Use measurement to solve problems. Unit 26624: Read texts with understanding. AS 90853: English 1.9 Use information literacy skills to form conclusion(s).

Activity 1.2.6: Exploring hazards that can stop a car rapidly

Forces change things. You cannot see forces but you can see what they have done. Forces can change the shape of something, and the way something moves (speed and direction). They can slow things down, speed them up or stop them moving.

Some hazards that can stop a car suddenly are immovable features like trees, power poles, bridge supports and ditches. When a car collides with such a feature and stops suddenly, it puts huge forces on people's bodies.

For example, when a car collides with an immovable object like a tree or a telegraph pole, the object exerts an unbalanced force on the car that changes the way it moves by stopping it. The unbalanced force can also change the shape of the car and the passengers strapped inside.

Whenever a force acts on an object, the object must push back with an equal force (action and reaction are equal and opposite). People get hurt when their body is unable to react to the force that is applied to it without breaking.

Using the brakes and hitting a telegraph pole are both ways to exert a force that stops the car. However, a telegraph pole brings the car to a stop in a much shorter distance than the distance taken to stop the car using the brakes.

What is stopping distance and why does it matter?

Search Google with the term "stopping distance". Make notes on your research findings.

Conduct the "classic egg drop" experiment to find out why stopping distance matters.

- When you drop an egg from a bench to the floor, it stops when it reaches the floor. The force exerted by the floor stops the movement of the egg and changes its shape. The force exerted by the floor acts over a very small distance.
- What happens if you allow the stopping force acting on the egg to act over a larger distance? For example, what happens if the egg falls on a surface that crumples a bit when the egg hits it?
- With a partner, design and make a structure to stop the egg more slowly when it hits the floor. You may use any of the following supplied materials to make your structure: a ziplock plastic bag, 1m of string, 2 paper clips, 2 elastic bands, 2 pieces of A4 paper, 5 toothpicks, 10 ice-block sticks, 10cm of sticky tape and 2 drinking straws.
- Discuss your results with your partner and with the class. Where possible, offer scientific explanations and use scientific language.

Note:

Successful designs will crumple a bit around the egg when it reaches the floor – allowing the egg to stop more slowly. In scientific terms, crumpling allows a smaller force to act over a bigger distance. The force is still big enough to stop the egg but it is not big enough to change the shape of the egg.

Just applying a force isn't work. Work is done when you **apply a force through a distance.**

Work done is equal to the force multiplied by the distance over which the force acts.

Work = Force x Distance

The SI unit for work is a joule (J).

The SI unit for force is a newton (N).

The SI unit for distance is a metre (m).

The work done (or energy transferred) to stop the egg is the same whether it stops suddenly when it hits the floor or slows to a stop using a crumple zone of paper and card. The change in movement of the egg is the same in both cases – an accelerating egg is brought to a stop.

The stopping distance is not the same in both cases.

Work = Force x Distance

The greater the stopping distance, the smaller the force required to stop the egg. The smaller the stopping distance, the greater the force required to stop the egg.

In a similar way the work done to stop the car is the same whether the car is stopped by the brakes, the tree, the fence, another car or the telegraph pole.

When the work done to make the car lose this energy is done over a much shorter distance (such as when the car collides with a tree), the force on the car (and everyone inside the car) will be much greater.

Watch these YouTube videos:

Nigel Latta – Big old car vs small new car

2009 Chevy Malibu vs 1959 Bel Air Crash Test | Consumer Reports

Research and write a report to explain why it is important to buy the safest car you can afford – and why buying an old car may not be a smart purchase. To produce your report:

Read: Death defying designs for car safety (Australian Academy of Science)

- describe the safety features in modern cars that help slow the speed at which the car, or the driver and the passengers stop during an accident,
- explain why road features that can stop a car suddenly (change the motion) are a hazard for drivers and their passengers,
- explain why car features that slow the rate of stopping in a crash make cars safer to drive, and
- make a generalisation about the safety rating of older cars.

Road code links	Pathways Awarua modules	Possible evidence for:
Page numbers from 2023 hardcopy. **Key driving skills** Following distance p55 **Supported by Drive:** The driver licence Basics of the road What is good driving? Hazards Reading the road The truth about speed Using lanes Following distances Stopping and parking Roadworthy vehicles	RC-100. The Driver Licensing System Part One RC-102. The Driver Licensing System Part Two RC-104. Making sure your car is road worthy (WOF) RC-301. Speed and curves RC-310. Flush medians RC-311. Driving on different types of roads RC-400. Responsible driving RC-405. Lanes RC-412. Stopping in different conditions	Unit 26625: Actively participate in spoken interactions. Unit 26622: Write to communicate ideas for a purpose and an audience. Unit 3492: Write a short report. AS 90053: English 1.5 Produce formal writing.

Activity 1.2.7: Text for tips on what to do next

There is little point in knowing something is a hazard if you do not know what to do to keep yourself safe.

When you can read roads, your next step is to suggest strategies and responses to reduce the risk of these hazards.

What are your most important tips for someone learning to read and respond to a road?

Work in a small group.

Use ideas from the NZ road code (and the previous activities to decide on 5 top tips for "reading and responding to" roads).

Hazards and emergencies (page 107)

- Create the content for a "how to read the road" app that will allow users to enter a hazard and receive a suitable response or receive a text message suggestion.

Note: Your application must not encourage the road user to send or receive texts when driving. You should make it clear that any text messages are intended for people planning a trip, for passengers or for a GPS system.

- Display the input and output suggestions on mock-up cell phone screens.
- Hold a class vote on the best tips for "reading and responding to" roads.

Road code links	Pathways Awarua modules	Possible evidence for:
Page numbers from 2023 hardcopy. **Hazards and emergencies** Dealing with hazards p 107 **Supported by Drive:** What is good driving? Hazards Reading the road The truth about speed Following distances Stopping and parking	RC-100. The Driver Licensing System Part One RC-102. The Driver Licensing System Part Two RC-104. Making sure your car is road worthy (WOF) RC-301. Speed and curves RC-310. Flush medians RC-311. Driving on different types of roads RC-405. Lanes	Unit 26622: Write to communicate ideas for a purpose and an audience. AS 90052: English 1.4: Produce creative writing.

1.3. Ideas about road users

Everyone is a user

It is hard to imagine getting through a day without using the roads. Even if you refused to leave your bedroom and spent your days and nights playing computer games, somewhere along the line the supply of instant noodles, cold pizza and breakfast cereal would run out. At this point you would have to order the delivery of more goods, which would arrive via the roads.

Activity 1.3.1: How did you use the road?

With a partner, make a list of all the different ways you used the roads during one whole day, from when you woke up in the morning to when you went to sleep at night. Think about the different ways in which

you used the road – such as to get food and supplies to your home, in your role as a pedestrian, a passenger, a cyclist or a driver or to give directions. Write your ideas in the table below.

Describe what you did (Use text and or drawings)		**Explain** how you used the road network *[because … so that]*
Insert image		
Insert image		
Insert image		
Insert image		
Insert image		
Insert image		
Insert image		
Insert image		

Pair up with another student and compare your lists.

- Look for similarities and differences.
- Share your findings with the class.

Think about the day you have described from the perspective of the road. If the road could talk, what would it say? What does it see, hear and feel over 24 hours? If you could interview a road, what questions would you ask?

As a class, make a list of questions you could use to interview a road.

Write a blog post called “Three for the road”.

- **Describe** the 3 questions you would choose to ask a road about the people who use it each day.
- **Explain** why you think these questions would provoke an interesting response.
- **Predict** possible responses from the road.

Road code links	Pathways Awarua modules	Possible evidence for:
Page numbers from 2023 hardcopy. **About other road users** Sharing the road p160 Information for other road users p170 **Supported by Drive:** What is good driving? Hazards Cyclists and motorcyclists	RC-311. Driving on different types of roads RC-400. Responsible driving RC-401. Respecting other road users (horn use, cyclists)	Unit 26625: Actively participate in spoken interactions. Unit 26622: Write to communicate ideas for a purpose and an audience. Unit 3492: Write a short report. AS 90053: English 1.5 Produce formal writing.

Activity 1.3.2: Defining a road user (Who is a road user?)

Because the road network is so much a part of how we live and what we do every day, we sometimes forget it's there. The road network is a little like how fish experience the water they swim in; it's so much a part of our lives, we find it difficult to see and describe. Sure, we crossed the road or walked along the footpath this morning – but what was it like? We didn't notice. Unless something goes wrong, we often don't focus on the road network.

However, "We are all road users" is a message worth sharing with others.

Work in a small group.

- Brainstorm everything you know about road users. Record each idea or thought on a separate blank hexagon.
- Work together to cut each hexagon from the template and then arrange the hexagons by tessellating them.
- Explain why you have made straight-edged connections between individual hexagons (using connectives like "because …" and "so that …").
- When you have finished organising the hexagons, step back and look at the cluster of hexagons (or the vertex where three hexagons come together). Make a generalisation about the nature of the relationship between the ideas ("Overall we think being a road user is all about … because … because …").
- Share your generalisations about road users.

For hexagon templates:

HookEd Solo Hexagon Generator

Use the following self-assessment rubric to look at ways to improve your definition.

Prestructural	I need help to define a road user.
Unistructural	My definition statement has one relevant idea about road users.
Multistructural	My definition statement has several relevant ideas about road users.
Relational	… and I explain these ideas. *[because … so that]*

Extended abstract	… and I make a generalisation. *[Overall we think a road user is (insert claim) because (insert reason) because (insert evidence).]*

Road code links	Pathways Awarua modules	Possible evidence for:
Page numbers from 2023 hardcopy. **About other road users** Sharing the road p160 Information for other road users p170 **Supported by Drive:** What is good driving? Hazards Cyclists and motorcyclists	RC-400. Responsible driving RC-401. Respecting other road users (horn use, cyclists)	Unit 26625: Actively participate in spoken interactions.

Activity 1.3.3: Making a lift-the-flap book about road users

With a partner, make a draft version of a lift-the-flap picture book. Call it “Who am I?” and use it to give a message about road users.

Use text and images (line drawings, collage or mixed media) to communicate the message that we are all road users and use the roads in many different ways. As road users we have one thing in common: if we want to keep using the road network we have to make sure that we use the roads responsibly.

For example, use images to represent 5 very different people and place each one under a flap alongside a description ending “Who am I?”. Lifting the flap reveals the person on the page is also a road user and cares about using the road in a way that keeps others safe.

- Before you start planning your book, look at several examples of lift-the-flap books to see how they work.
- Identify the conventions that these writers and illustrators use, such as having an easy-to-follow concept or big idea; using repetitive phrases; and structuring the book with a counting pattern or questions and answers.
- You may get extra ideas by researching the history of early lift-the-flap and pop-up books:
- The surprising history of pop-up books
- Look online for instructions on how to make a lift the flap book.
- How to make a lift the flap book
- Flap happy shapes
- When making your lift-the-flap book, think about some of the “big ideas” and “big experiences” that you want it to communicate. Ask yourself how you can use flaps and a few well-chosen words to help convey that message.
- Ask:

What do we mean by the statement, “Everyone is a road user”?
What are some different ways in which people use the road?
How will you explain that everyone benefits from having citizen rights to use the road network?

Extend this thinking to:

- explain why you are responsible for others when they use the road network
- reflect on how the rights to use the road network are balanced by responsibilities to use it in ways that allow others to use the road.

Road code links	Pathways Awarua modules	Possible evidence for:
Page numbers from 2023 hardcopy. About driver licences p 8 **About other road users** Sharing the road p160 Information for other road users p170 **Supported by Drive:** What is good driving? Hazards Cyclists and motorcyclists	RC-400. Responsible driving RC-401. Respecting other road users (horn use, cyclists)	Unit 26625: Actively participate in spoken interactions. Unit 26622: Write to communicate ideas for a purpose and audience. Unit 1280: Use graphics in communication. AS 90052: English 1.4 Produce creative writing. AS 90855: English 1.7 Create visual text.

Activity 1.3.4: Licensed to share the road

A driver licence is a test of identity. It says something about who you are.

Not all road users need a licence. Road users wanting to walk across or alongside a road, or passengers wanting to travel on a bus or in a car, do not need a licence to show that they have the skills and knowledge necessary to be a safe pedestrian or safe passenger.

However, every road user wanting to drive on the roads needs a licence to show that they have the skills and knowledge necessary to be a safe driver.

Having a New Zealand driver licence is a test of your identity as a citizen. It says that you use the roads in ways that demonstrates respect for the rights and safety of other citizens. A licence says you are a member of a specific group of citizen drivers who belong, matter and make a difference to our roads.

A New Zealand driver licence says something about “who you are” that is useful in your public life and your social life. For example, for many jobs employees must hold a full licence.

There is some evidence to suggest that all over the world young people are getting their licence later and driving less. Some are choosing not to get a licence. There are many reasons why young people may not be driving. List some that you can think of.

For more ideas, see:

More drivers aged over 75 on our roads than under 20 as fewer Kiwi teens learn to drive (NZ Herald)

Discuss how important it is to have a driver licence.

Discussion prompts

[think–pair–share, or small group or whole class discussion only]

How important is having a driver licence to you and your friends? Why did you get a driver licence? What difference does having a licence make to your life? What are the best things about having a licence? What are the worst things about having a licence? Why do you not have a driver licence? What has stopped you getting a licence? Do you plan to get a licence in the future? Why do you not want a driver licence?

For this activity, use the information from:

NZ road code: about driver licences page 8

Your driver licence explained (Waka Kotahi)

- Describe a New Zealand driver licence. (For example, what does it look like?)
- Identify the items you can see on the photo side by writing a list or labelling a drawing.
- Identify the items you can see on the reverse side by writing a list or labelling a drawing.
- Explain what each item means. (For example, what does 4a. mean?)
- Explain why you think this information is included on the licence. (Write about it on a separate piece of paper or by adding explanations to your drawing.)

Predict the format of driver licences in the future. (What does it make you wonder about the format of a driver licence in the future?)

- Design a driver licence for future young citizens to show they use the roads in ways that demonstrate respect for the rights and safety of other citizens.
- Write a report promoting your design. Describe the features in your design and explain why you think they will be suitable for young citizens in the future.

Road code links	Pathways Awarua modules	Possible evidence for:
Page numbers from 2023 hardcopy. About driver licences p 8 **Supported by Drive:** The driver licence What is good driving? Understanding mistakes Hazards Cyclists and motorcyclists Police, fire and ambulance	RC-100. The Driver Licensing System Part One RC-101. Filling in the driver licence application form RC-102. The Driver Licensing System Part Two RC-400. Responsible driving RC-401. Respecting other road users (horn use, cyclists) RC-408. Police and emergency services	Unit 26625: Actively participate in spoken interactions. Unit 26622: Write to communicate ideas for a purpose and audience. AS 90052: English 1.4 Produce creative writing. AS 90855: English 1.7 Create visual text.

1.4. Ideas about sharing

If the roads belong to everyone, how well do you share them?

Do you share roads in ways that respect the rights of others to have safe journeys?

We share the roads with others. Public roads are common property. They belong to everyone and everyone gets to use them – as pedestrians, passengers, riders and drivers. We need to use the roads in

ways that are fair – in ways that keep it safe for others to use the road. The New Zealand road code is a guide to sharing the road network in ways that are safe and responsible, respectful of the rights of others.

Activity 1.4.1: What do you share?

Make a list of all the things you share with others; for example, pizza, playgrounds, bus shelters, question time in class, public seating, cell phones, lakes, rivers, libraries, clothing, bicycles, clean air, beaches, public toilets, sea, skate park, public roads, local park, boat ramps, private roads, public firework displays, public car parks.

Some of these resources are used up when different people share them; some are not. Some resources belong to the public – anyone can use them; others belong to individuals or businesses and access to them is controlled.

Sort the things you share into the table below.

Things I share …	**Belong to someone**	**Belong to everyone**
Can be used again		
Cannot be used again		

Discuss what is important when sharing with others.

Discussion prompts

[think–pair–share, or small group or whole class discussion only]

Can you think of a time when you shared something with others and it didn't work out? Describe what happened. What did it feel like? What did you do? Why do you think it didn't work? What happened afterwards? Did you come up with some ground rules for sharing? What is important to remember when sharing with others? What does it make you wonder about sharing a resource that belongs to everyone and can be used again and again?

Produce a "rough and dirty" guide for how NOT to share the road with others. Identify the actions that will most infuriate other road users.

Format your guidelines on a pamphlet or flyer that can be easily distributed to other road users.

Road code links	Pathways Awarua modules	Possible evidence for:
Page numbers from 2023 hardcopy. Creating a safer road system p6	RC-301. Speed and curves Rc-401. Respecting other road users (horn use, cyclists) RC-406. Passing	Unit 26625: Actively participate in spoken interactions. Unit 26622: Write to communicate ideas for a purpose and audience.

Supported by Drive: Understanding mistakes Cyclists and motorcyclists Passing The truth about speed	RC-407. Parking rules	AS 90052: English 1.4 Produce creative writing.

Activity 1.4.2: Ground rules for sharing a cheesy crust pizza

In a group of 2-3 people, make up some ground rules for sharing pizza.

Create another set of ground rules for sharing a skate ramp, a computer game or a discussion.

Compare and contrast the two sets of rules you have made. How are the ground rules for sharing similar? How are they different? You can use the HOT SOLO Compare and contrast map and self-assessment rubric to draft your writing:

Read the NZ road code's suggestions for sharing the road. See pages 160-169 for rules when sharing with pedestrians, trucks and buses, tractors, over-dimension vehicles, motorcyclists, cyclists and horse riders.

About other road users (NZ road code online)

Discuss how the suggestions for sharing in the NZ road code would work for sharing cheesy crust pizza or a skateboard ramp.

For example, how could you tweak the following suggestion so it worked with sharing cheesy crust pizza? "Always be ready to stop near schools, bus stops and pedestrian crossings".

Make a general set of rules for citizen road users sharing the road network.

Use these rules to write a user manual for other young people, “How to share a road network”.

Road code links	Pathways Awarua modules	Possible evidence for:
Page numbers from 2023 hardcopy. **About other road users** Sharing the road p160 **Supported by Drive:** Cyclists and motorcyclists Passing Stopping and parking	RC-401.Respecting other road users (horn use, cyclists) RC-406. Passing RC-407. Parking rules	Unit 26625: Actively participate in spoken interactions. Unit 26622: Write to communicate ideas for a purpose and an audience. AS 90053: English 1.5 Produce formal writing.

Activity 1.4.3: So what is the road sharing issue in your community?

Every community has a road sharing issue that can be fixed if enough people care.

List all the different types of people who use your local roads. Find a local “road sharing” issue they care about. Ask a group of local road users what they think the biggest issue is when sharing the road.

For example, young road users may think there is a problem with road sharing because of: traffic congestion in streets around a school, local market or church; heavy traffic flows making crossing the roads challenging for pedestrians; primary-aged children using pavements and roads as a playground; traffic failing to slow down when passing through a rural township; people driving under the influence of drugs or drink on Friday nights; cyclists feeling unsafe when they use local roads; students travelling to school in overcrowded cars, distracting the driver; local streets around the school parked out by commuters who continue their journey on public transport.

Investigate the issue they identify by collecting data and information to help you understand it.

Describe the variables to be measured and their units, e.g. methods of transport (discrete data), types of road users (discrete data), number of passengers (continuous data), distance travelled (continuous data), speed travelled (continuous data), time of day (continuous or discrete data).

Variable 1: _____ (units)

Variable 2: _____ (units)

- Explain the variables in an everyday life context.
- Make predictions about the variables based on the context.

Describe the sample size.

Collect data.

- For example, keep a travel log of the number of passengers in cars arriving and leaving school over a week. Keep a record of the number of pedestrians trying to cross a busy intersection at different times of the day. Keep a 7 day record of the number of near misses you observe over a given period as traffic negotiates a busy roundabout.
- Use surveys, observations, questionnaires or interviews. For example, survey the local residents about their level of frustration when looking for parking. Survey the transport method used by staff and students to get to school each day, e.g. walk, drive, bike, public transport, school bus. Survey local drivers about the streets they avoid and the times they avoid them.

Sort your data. For example, record the survey data in a tally chart.

Organise your data to find out about the variables in the data set, e.g. use a frequency table, bar chart, histogram, stem and leaf, box and whisker, composite bar graph. Sketch or photograph the way you have organised your data.

- What can you see? Describe the overall shape of your data now you have organised it. What variables did you use to organise your data? Find the data at the top end, at the bottom end and in the middle of your organised data.
- Explain what you can see from the different ways you have organised your data. What do you think the shape of your organised data means? What do you think the spread of your data means? What do you think the clumping of your data (uneven spread) means? What do you think the data in the middle mean? What you think the differences and similarities between your data mean? What do you think any outliers in your data mean?

Clean data. Look for outliers. Identify any erroneous or suspicious data (input error, duplicates, measurement error). Decide whether to correct, amend or remove suspicious data or whether to leave them unchanged. Note your decisions alongside your raw data tables.

Summarise the data. What is easy to find out when you organise data in this way? What is hard to find out? What could you find out if you organised your data in a different way?

Present the data. For example, choose the most appropriate method of presentation – which might be bar charts, histograms, frequency tables, tally charts, pictograph, strip graphs, pie charts, tables, graphs, dot plots, time series.

Analyse the data. Use average – median, mean, mode and measures of spread – range, quartiles, box or whisker plots.

Compare and contrast your data.

- Compare and contrast different aspects of your data, such as the average number of passengers travelling in cars driven by students and the average numbers of passengers travelling in cars driven by adults.
- Compare and contrast your data with national survey data on average numbers of passengers travelling in cars.

Draw a conclusion from the data analysis about the issue you have investigated.

Make a generalisation from your data about how your local community can help share local roads in ways that make journeys safer.

Produce a report to share and display your data findings.

Follow up on your report by sharing your findings in ways that will make journeys safer for road users in your local community.

Road code links	Pathways Awarua modules	Possible evidence for:
Page numbers from 2023 hardcopy. **About other road users** Sharing the road p160 **Supported by Drive:** The driver licence	RC-101. Filling in the driver licence application form RC-104. Making sure your car is road worthy (WOF) RC-301. Speed and curves RC-400. Responsible driving RC-401. Respecting other road users (horn use, cyclists)	Unit 26626: Interpret statistical information for a purpose. Unit 26625: Actively participate in spoken interactions. Unit 26622: Write to communicate ideas for a purpose and an audience.

What is good driving? Roadworthy vehicles The truth about speed Stopping and parking	RC-407. Parking rules	AS 90053: English 1.5 Produce formal writing.

Activity 1.4.4: Rules that help everyone get a fair share

Sharing the roads with others has a lot in common with sharing a skate ramp, cheesy crust pizza or talking time in a conversation. In each case, there are rules that help everyone to get a fair share of the resource. The rules and suggestions in the NZ road code help guide citizens when they share the road network.

What we do to keep the road network safe makes it better for everyone. But we don't get this value from it when road users think of their own needs and ignore the needs of other road users. For instance, the road network is less safe for everyone when some road users deliberately break the road rules, drive in unsafe vehicles and travel at speeds that are unsafe for the conditions on the road.

It is also hard to share a road network when everyone wants to use the road at the same time. At such times, the traffic slows, holding up everyone. Frustrated drivers can use the roads in ways that put everyone at risk. For example, on wet days everyone wants a lift to school and, because of the crowding on the roads around the school, drivers drop off children in dangerous ways.

People abuse the road network by breaching the rules for safely sharing the roads. By speeding, or driving when tired or under the influence of drugs and alcohol, people make the roads unsafe for other users. Passengers can behave in ways that distract the driver and put others who are sharing the road at risk. Pedestrians can fool around beside a road or cross it without first checking the traffic flows.

Complete a think–pair–share activity.

- Identify what some road users do (road user behaviour) that makes it hard for other citizens to safely share it.
- Describe the rules that keep road users sharing the road safely with others.
- Classify (sort) the rules into rules about **safe speed**; **safe road use**; **safe vehicles**; and **other** aspects of the road network.
- Discuss why rules help citizens to share the roads in ways that make safer journeys for everyone.

Construct and deliver an oral text describing why following the rules should matter to all young people using the roads in New Zealand today.

- Your text can take the form of a speech, seminar or oral history. You can deliver your text live or as a recorded presentation.

Road code links	Pathways Awarua modules	Possible evidence for:
Page numbers from 2023 hardcopy. About driving p 38 About limits p122 **Supported by Drive:** What is good driving? Roadworthy vehicles	RC-104. Making sure your car is road worthy (WOF) RC-301. Speed and curves RC-400. Responsible driving RC-401. Respecting other road users (horn use, cyclists) RC-406. Passing RC-407. Parking rules	Unit 26625: Actively participate in spoken interactions. AS 90857: English 1.6 Construct and deliver an oral text.

The truth about speed Stopping and parking Passing		

1.5. ideas about risk

Road crashes remain the biggest killer of young people between 15–29 years around the world. More than 1,000 young people lose their lives on the world's roads every day. All of them are future mothers, fathers, physicians, workers, teachers, and artists. And if each one of them had only two dreams, then we are losing more than 2000 dreams daily.

YOURS – Youth for Road Safety

Whose risk is it?

In 2021 there were 74 fatal crashes, 538 serious injury crashes and 2892 minor injury crashes involving young drivers (drivers aged 15-24 years old).

Ministry of Transport

Some road users are more at risk than others. Young drivers are high-risk road users.

Young drivers are most at risk in the first two years after passing their restricted test and starting to drive unsupervised. This is because young drivers have not had time to gain driving experience, do not assess hazards well and are often overconfident about their abilities.

Some factors that make young road users particularly at risk are:

- driving with passengers
- not using seatbelts
- speeding
- driving at night
- driving after drinking alcohol or using drugs
- getting distracted while driving
- driving while fatigued (tired).

Activity 1.5.1: Unexpected risks to young drivers

Listen to Dr Teresa Senserrick talk about the driving habits of young drivers that put them at risk:

DRIVE study of young drivers (YouTube)

List some of the risks to young drivers that Dr Senserrick talks about in the video.

Identify one risk that surprised you – information that was new to you and your friends.

Explain why this risk is especially linked with young drivers.

One of the risks Dr Senerrick talks about is for young people to drive with passengers – especially if the passengers are peers.

Watch "The Party Planner" (2010, a winning film in the "Make a Film, Make a Difference" (MAFMAD) Competition, 2010. Transport Accident Commission, Victoria, Australia.

The Party Planner (YouTube)

Use the information you have gathered in previous activities to describe a fictional situation in which a young person manages a risk when they are using the road as a driver or passenger. Share your description with the class.

Write a comic strip describing how a young citizen manages a risk while using the road as a driver or passenger.

Arrange a series of static images in sequence to tell the story of a risky situation and how this young citizen manages the risk.

You can use these online comic creators:

Comic Life

Pixton

Road code links	Pathways Awarua modules	Possible evidence for:
Page numbers from 2023 hardcopy. About driver responsibility p134 Learner licence p13 Restricted licence p18 **Supported by Drive:** The driver licence What is good driving? Roadworthy vehicles Cyclists and motorcyclists The truth about speed	RC-101. Filling in a driver licence application form RC-104. Making sure your car is road worthy (WOF) RC-301. Speed and curves RC-400. Responsible driving RC-401. Respecting other road users (horn use, cyclists) RC-412. Stopping in different conditions	Unit 26622: Write to communicate ideas for a purpose and an audience. AS 90855: Create a visual text.

Activity 1.5.2: Just how safe are you (and people like you)?

Print a copy of each of the following statistics onto a separate strip of paper.

- Drivers on a restricted licence are seven times more likely to be involved in a fatal or serious injury crash than other drivers.
- New Zealanders aged 16 to 24 years make up 14% of our driving population. They're involved in around 37% of all fatal crashes and 38% of all serious injury crashes.
- Young restricted drivers are more at risk of having a serious crash in the first 6 to 12 months of driving solo on their restricted licence than at any other time in their lives.
- Increased crash risk for young drivers is partly due to driving inexperience.
- The risk of crashing diminishes with experience and the development of decision-making skills to recognise risky situations and make safe choices.
- Two of the riskiest situations for young drivers are driving at night and carrying passengers.

Sources

Young drivers (Waka Kotahi)

Keeping safe on the road (ACC)

In a group of 2-3 students, choose a statistic or fact about the risks to young road users that interests you.

- Describe what the fact says.
- Explain what the fact means for young people using the road.

Think about how we could change this statistic or fact to create better outcomes for young people. List 3 things you can:

- do by yourself to help change this outcome for young citizens
- do with others to help change this outcome for young citizens
- persuade others to do to help change this outcome for young citizens
- do to find out more about this outcome.

Create a piece of persuasive writing about safer journeys for young people with a "you can change this" message.

Road code links	Pathways Awarua modules	Possible evidence for:
Page numbers from 2023 hardcopy. Creating a safer road system p6 **Supported by Drive:** Roadworthy vehicles What is good driving? The truth about speed Using lanes Passing Stopping and parking	RC-104. Making sure your car is road worthy (WOF) RC-301. Speed and curves RC-400. Responsible driving RC-401. Respecting other road users (horn use, cyclists) RC-405. Lanes RC-406. Passing RC-412. Stopping in different conditions	Unit 26622: Write to communicate ideas for a purpose and an audience. Unit 26624: Read texts with understanding. Unit 1280: Use graphics in communication. AS 90053: English 1.5 Produce formal writing. AS 90853: English 1.9 Use information literacy skills to form conclusion(s).

Activity 1.5.3: "I have a mate who …"

Everyone has a story about a young person who didn't reach home. The trouble is that we also have stories of narrow escapes and lucky breaks where young people used the roads in an unsafe way but survived unharmed.

Share your story about a young road user – either lucky or unlucky.

Not knowing the big picture about who is lucky and who is not can make young people feel invulnerable when using the road. "It won't happen to me" thinking can put young people at greater risk.

In this activity we are taking some time to look at the facts – rather than relying on the "I have a mate who …" stories.

Taking time to read the statistics about risks to road users is important. They give us the real story about young people using the road.

- Do young road users belong?
- Do young road users matter?
- Do young road users make a difference?

Use the following resources to learn more about the risks to young road users in your local area and around the world.

World Health Organization – Advocacy materials related to road traffic injuries

Print copies of the World Health Organization posters:

Road traffic injuries: the facts
Managing speed
Ten strategies for keeping children safe on the road.

Your teacher will give you a copy of a road safety fact or statistic from these posters:

- Read your fact and check that you know what it means.
- Share your fact and what it means with other students.
- Find links between your fact and other students' facts.
- Form a group with other students holding similar facts.

Pool all the facts. As a class, sort them into a table like the one below, showing the facts that:

- surprised you
- shocked you
- made you feel happy, sad or mad
- made you feel curious
- are worth sharing with others on Facebook or Twitter etc.

Note that facts can sit across several categories.

Surprising facts	**Shocking facts**	**Happy, sad or make-me-mad facts**	**Curious facts**	**Facts worth sharing**

To what extent, do the facts suggest that young people:

- belong on the road network?
- matter on the road network?
- can make a difference on the road network?

Take a vote on the 5 facts that are most worth sharing with friends and family – the 5 facts that will make people look at young road users in a new way.

Use social media to share these 5 facts with family and friends in a way that tells young people they belong, they matter and they can make a difference as road users.

Road code links	Pathways Awarua modules	Possible evidence for:
Page numbers from 2023 hardcopy. Creating a safer road system p6 **Supported by Drive:** Roadworthy vehicles What is good driving? The truth about speed Cyclists and motorcyclists Stopping and parking	RC-104. Making sure your car is road worthy (WOF) RC-301. Speed and curves RC-400. Responsible driving RC-401. Respecting other road users (horn use, cyclists) RC-412. Stopping in different conditions	Unit 26624: Read texts with understanding. Unit 1280: Use graphics in communication. AS 90853: English 1.9 Use information literacy skills to form conclusion(s).

Activity 1.5.4: Two truths and a lie

Create a set of “two truths and a lie” cards to use with friends and or family. Each card begins “Did you know …” and contains a statement about a risk factor for young people using roads. Two of the statements are true; one is a lie.

To play the game:

- one person reads out their three cards, trying not to give away the lie by tone of voice or facial expression
- the other members of the group discuss and then vote on which statement is a lie
- the first person explains whether the statement the group has voted on is a lie or true.

For suitable “true” facts, look up the following resources. You will have to make up your own lies.

Young drivers (Waka Kotahi)

Keeping safe on the road (ACC)

Safety ratings (Rightcar)

What should drivers do when on a high risk stretch of road?

The skills you need for the restricted licence test (Drive)

Create a class set of “truth or lie” cards.

- Ask for help from teachers and students in the design and graphics department to create “print ready” versions of your cards.
- Use the cards to start up conversations with family members, friends or students at your school about the risk factors for young people using roads in your area.
- As an extension, you could make a set of “truth or lie” cards to help young people learn the NZ road code.

Road code links	Pathways Awarua modules	Possible evidence for:
Page numbers from 2023 hardcopy. Creating a safer road system p6 **Supported by Drive:** Roadworthy vehicles What is good driving? The truth about speed Cyclists and motorcyclists Passing	RC-104. Making sure your car is road worthy (WOF) RC-301. Speed and curves RC-400. Responsible driving RC-401. Respecting other road users (horn use, cyclists) RC-406. Passing	Unit 26624: Read texts with understanding. Unit 1280: Use graphics in communication. AS 90853: English 1.9 Use information literacy skills to form conclusion(s).

Activity 1.5.5: Finding out more

Work with family members, friends or students at your school to identify the perceived risks to young road users in your local area and what is being done about them.

Talk to your friends and family about what they think are the biggest risks to young people from using roads in your area.

Extend these ideas by downloading and reading the Waka Kotahi one-page snapshots of current data on crashes and casualties, registered vehicles, road lengths and vehicle kilometres travelled for all 67 New Zealand local councils:

Statistical Summary of Territorial Authorities in New Zealand

Tell your family and friends that young people are citizens. Young people belong. Young people matter. Young people make a difference. Then ask them, *"Who is looking out for young people when they use the roads?"*

Unpack the most interesting facts your friends and family have identified by asking 5 "how" or "why" questions about each one.

Then ask, *"So what can we do?"* Write the risks, the related questions and some suggestions for how to address the risks in the table below.

Fact:	**How questions**	**Answers**
[insert fact here]	How is …	
	How did …	
	How can ….	
	How would …	

	How will ….	
	How might …	

Fact:	Why questions	Answers
[insert fact here]	Why is …	
	Why did …	
	Why can ….	
	Why would …	
	Why will ….	
	Why might …	

When you have completed the table, look for citizens in your local community who are doing things to help keep young people safe on the roads.

Find out what they do and if there are ways you could work with them.

Work to become someone who:

- does something that matters for young people using the road
- makes a difference to young people using the road.

Road code links	Pathways Awarua modules	Possible evidence for:
Page numbers from 2023 hardcopy. Creating a safer road system p6 **Supported by Drive:** Roadworthy vehicles What is good driving? The truth about speed Cyclists and motorcyclists	RC-104. Making sure your car is road worthy (WOF) RC-301. Speed and curves RC-400. Responsible driving RC-401. Respecting other road users (horn use, cyclists)	Unit 26624: Read texts with understanding. Unit 26625: Actively participate in spoken interactions.

1.6. Ideas about distraction

Danger, danger: distracted drivers on the road ahead

Distracted drivers are dangerous drivers. They are dangerous to themselves, to their passengers and to other road users.

Driving is a complex task that requires our full attention and focus. Risks increase when the driver is distracted from the task of driving because a car can travel a long way in the few seconds your attention is focused on something else.

Any kind of distraction takes the driver's attention away from what they are doing. A driver can be distracted by something either inside or outside the vehicle. The distraction may be something you:

- see (visual distraction)
- hear (auditory distraction)
- do (physical distraction)
- think about (cognitive distraction).

Even trying to do more than one thing at a time (multitasking) is distracting and makes people drive less well and less safely. For example, using a cell phone when driving is a distraction that causes "inattention blindness", where drivers do not see what is happening directly in their line of sight.

Distraction is a serious risk: driving when talking on a cell phone is as dangerous as driving after drinking alcohol.

Activity 1.6.1: Distracted drivers

Read the list of driver distractions in the NZ road code (2015) on pages 235 to 236

Responsible driving

Watch the Waka Kotahi video about distracted drivers in New Zealand:

Distraction video

Do a think–pair–share activity to reflect on and discuss what you saw.

Discussion prompts

[think–pair–share]

What did you find out? Why was it like that? What did it make you wonder? What surprised you? What shocked you? What made you happy, sad or mad? What did you know already?

Watch the video again and take notes that you can use when writing a film review for other young people.

Write a review of the video for young people:

- Express your opinion of the video, but back it up with reasons and examples.
- Adjust your writing to suit an audience of young people.
- Avoid simply describing everything that happened in the video.
- Judge the video. Did it use good examples? Was it provocative? Would it make young people think in a new way about distracted drivers?
- Offer some recommendations as to the suitability of the video as a community resource to help young people learn more about distracted drivers.
- Evaluate the content and animation. What could the film-makers have done to make the video work better for an audience of young viewers?

Road code links	Pathways Awarua modules	Possible evidence for:
Page numbers from 2023 hardcopy. **About driver responsibility** Responsible driving p135 **Supported by Drive:** The dangers of distraction What is good driving? The truth about speed Speed limits Types of speed signs	RC-300. Speed signs RC-301. Speed and curves RC-400. Responsible driving RC-412. Stopping in different conditions	Unit 26622: Write to communicate ideas for a purpose and an audience. AS 90053: English 1.5 Produce formal writing

Activity 1.6.2: Things you see, things you hear, things you do and things you think about

As a class, revisit the list of driver distractions in the NZ road code:

Responsible driving (road code online) (print page 139)

Read about diverted attention from the Ministry of Transport:

Diverted attention

Take a look at this graph from the above website.

Use the graph to work out:

- Which age group of drivers is most at risk from distraction?

- Which age group of drivers is least at risk from distraction?

Do a think–pair–share on distractions. Recall times when:

- you have been distracted
- you have been the distraction
- the driver of your car or bus has been distracted
- you have been distracted when using the road as a driver, pedestrian, passenger or cyclist.

Be prepared to share some of these experiences as part of a wider class discussion on distractions.

As a class, brainstorm all the things that can distract drivers from their driving.

Sort the ideas into the categories shown in the table.

Driver distractions			
Things you see	**Things you hear**	**Things you do**	**Things you think about**

Discuss the following distraction facts:

Young drivers are more easily distracted by passengers than older drivers. When a young driver has friends in the car, he or she is four times more likely to have a fatal crash than if driving alone. This risk increases when the driver and passengers are male.

Use think–pair–share, or a small group or whole class discussion, to explain why:

- young drivers are more easily distracted than older drivers
- young drivers who carry passengers are more likely to crash
- the risk of crashing increases when young drivers and their passengers are male.

Road code links	Pathways Awarua modules	Possible evidence for:
Page numbers from 2023 hardcopy. **About driver responsibility** Responsible driving p135 **Supported by Drive:** The dangers of distraction What is good driving? The truth about speed	RC-300. Speed signs RC-301. Speed and curves RC-400. Responsible driving RC-412. Stopping in different conditions	Unit 26625: Actively participate in spoken interactions. Unit 26624: Read texts with understanding.

Activity 1.6.3: Making a series of “Did you know?” distracted driver screensavers for the phones of young road users

Your brief is to design a series of five screensavers based on facts the “road user” needs to know about distraction.

First, identify what young drivers need to know about distraction.

In a small group, read one of the reports or blog posts on distracted driving listed at the end of this activity.

Break a long reading into several sections and share what you have read with the group.

Find 5 facts that support the claim that distracted drivers are dangerous drivers. For example:

- Distracted drivers have poor control over their speed and following distance.
- Distracted drivers are less aware of what else is happening on the road.
- Distracted drivers are less aware of what other traffic is doing.
- Distracted drivers have difficulty maintaining their position on the road.
- Distracted drivers miss traffic signals and signs.
- Distracted drivers have a slower response to hazards.

Second, define the task. What is the best design for a series of screensavers to communicate this message to young drivers?

Explore media that appeal to young people – such as video game, music video, manga cartoon, anime.

Develop criteria for assessing the suitability of the design options. For example, if you want the screensaver to appeal to teenagers, keep the design light on text. Research suggests teenagers **don’t like to read a lot on the web.**

Teenager’s UX: Designing for Teens

For the “Did you know?” series of screensavers:

- consider and create several different options
- refine your designs down to a few that best meet the criteria
- choose the best plan of action and create mock-ups of your designsshare your designs with young road users and get feedback on how to improve them.

Readings on distracted drivers

Driver distraction (Waka Kotahi)

The science of distracted driving and why it’s just so dangerous

Distracted Driving Is More Dangerous Than People Realize, New Research Shows (Scientific American)

Distracted Driving (CDC)

Measuring cognitive distraction in the automobile

National Safety Council, Distracted driving video channel

Road code links	Pathways Awarua modules	Possible evidence for:
Page numbers from 2023 hardcopy. **About driver responsibility** Responsible driving p135	RC-300. Speed signs RC-301. Speed and curves RC-400. Responsible driving RC-412. Stopping in different conditions	Unit 26624: Read texts with understanding. AS 90853: English 1.9 Use information literacy skills to form conclusion(s).

Supported by Drive: The dangers of distraction What is good driving? The truth about speed		AS 90855: English 1.7 Create a visual text.

Activity 1.6.4: How distraction-proof are you?

Are you distraction proof? Test yourself with this online game:

Cards of distractibility

Discuss your results with other students.

What surprised you about the class results?

Road code links	Pathways Awarua modules	Possible evidence for:
Page numbers from 2023 hardcopy. **About driver responsibility** Responsible driving p135 **Supported by Drive:** The dangers of distraction What is good driving? The truth about speed	RC-300. Speed signs RC-301. Speed and curves RC-400. Responsible driving RC-412. Stopping in different conditions	Unit 26625: Actively participate in spoken interactions.

Activity 1.6.5: Driving like a slug

Fact: Any delay in a driver's response to a hazard on the road can cause an accident.

Fact: Drivers talking on a cell phone have "sluggish responses".

Fact: Drivers using alcohol or drugs have "sluggish responses".

The following online simulator lets you test your reaction time and braking distance for a car at different speeds.

Braking distance simulator

www.stoppingdistances.org.uk/simulator/Stopping_Distances.html

Try playing it while talking with a friend, or while typing or texting on another device.

Use it to learn more about the effects of distractions on reaction time.

With a partner, discuss what surprised you about your results.

Road code links	Pathways Awarua modules	Possible evidence for:
Page numbers from 2023 hardcopy. **About driver responsibility** Responsible driving p135 **Supported by Drive:** The dangers of distraction What is good driving? The truth about speed	RC-300. Speed signs RC-301. Speed and curves RC-400. Responsible driving RC-412. Stopping in different conditions	Unit 26625: Actively participate in spoken interactions.

Activity 1.6.6: Stopping distance matters

Research stopping distance: Find out why stopping distance matters when you are using the road.

Use the following readings and videos to help you understand the importance of stopping distance and the factors that can affect it.

Following distance (NZ road code)

Speed and crash risk (Ministry of Transport)

Safe Drive Directory Ch 16 Stopping distances

Stopping distance (video)

Use the same resources to write a draft script for a motor programme like Top Gear, for an episode in which the hosts explore stopping distance with different cars, drivers or conditions.

Top Gear TV Show

Before you start, you will need to review some scripts so that you understand the:

— important elements of script writing - characters, pace, mood, setting and plot
— lay-out and function of a scriptpurpose of stage directions.

Useful online resource are:

How to write a script (BBC)

How to write a script (Wikihow)

You can also ask your English teacher for help with script-writing conventions.

Your script should answer the following questions:

- What is stopping distance?
- What is thinking distance?
- What is braking distance?
- Why is stopping distance important for safe road use?
- To what extent can drivers minimise their stopping distance?

Road code links	Pathways Awarua modules	Possible evidence for:
Page numbers from 2023 hardcopy. **Key driving skills** Following distance p55 **Sharing the road** Sharing the road with trucks and buses p166 **Supported by Drive:** What is good driving? The truth about speed Stopping and parking	RC-300. Speed signs RC-301. Speed and curves RC-400. Responsible driving RC-403. Breakdowns and tyres RC-404. Towing and speed RC-412. Stopping in different conditions	Unit 26624: Read texts with understanding. Unit 26622: Write to communicate ideas for a purpose and an audience. AS 90853: English 1.9 Use information literacy skill to form conclusion(s). AS 90052: English 1.4 Produce creative writing.

Activity 1.6.7: Thinking, braking and stopping

Stopping distance = reacting distance + braking distance

Two factors influence your stopping distance:

1. Reacting or thinking distance – the distance the car travels before the driver reacts to the event and starts to apply the brakes.

List some factors that could **increase** reacting/thinking distance, for example: distractions, alcohol, drugs.

2. Braking distance – the distance taken to stop once the brakes are applied.

List some factors that could **increase** braking distance, for example: road surface, speed, car tyres.

The table below shows some typical stopping distances for an average driver travelling on a dry road with no distractions. Fill in the missing data.

Typical stopping distances with no distractions on dry roads

Speed km/h	Thinking time s	Reacting/thinking distance m	Braking distance m	Stopping distance	
				in metres (m)	in car lengths (1 car length = about 4m)
30	1	6	5		3
40	1		9	17	4
50	1	9		24	6
60	1	11	21		8
70	1	13	29		10
80	1	15		53	13

90	1	17	47	64	
100	1		58	77	19

Source: Based on figures from:

Car stopping distance calculator

Use the data in the table to make a bar graph showing speed (km/h) against stopping distance(m).

- Put speed (km/h) on the x-axis and stopping distance (m) on the y-axis.
- Give your graph a title and label both axes.
- If you are not sure how to construct a bar graph, read How to make bar graphs
- Add more detail to your bar graph by using a colour key to show that each stopping distance bar is made up of a reacting/thinking part and a braking part.

The distraction time was the same at each speed. The distance travelled during that time changed. What does the data tell you about distraction and reacting/thinking distance?

Take chalk, plastic cones or pegs and a long measuring tape into the school grounds and mark out the reacting/thinking, braking and stopping distances for cars travelling at different speeds.

- Imagine you are travelling in a car that sees a hazard on the road ahead and brakes suddenly.
- In a small group, walk the reacting/thinking and braking distances for different travelling speeds.
- What does the experience make you wonder? Share your “what if” wonderings with your group.

Search the NZ road code for road rules that are intended to help drivers manage stopping distances. For example:

Following distance (NZ road code)

In the table below, list the rules and the reason why each one helps drivers to manage stopping distances.

NZ road code rule to help drivers manage stopping distances	**Why this rule helps**

Road code links	Pathways Awarua modules	Possible evidence for:
Page numbers from 2023 hardcopy. **Key driving skills** Following distance p55 **Sharing the road** Sharing the road with trucks and buses p166	RC-301. Speed and curves RC-400. Responsible driving RC-403. Breakdowns and tyres RC-404. Towing and speed RC-406. Passing RC-411. Stopping in different conditions	Unit 26623: Use number to solve problems. Unit 26627: Use measurement to solve problems. Unit 26626: Interpret statistical information for a purpose.

Supported by Drive: What is good driving? The truth about speed Stopping and parking	RC-412. Stopping in different conditions	

Activity 1.6.8: Wipe off 5

Driving to the conditions rather than the speed limit is a road rule that helps drivers manage stopping distances.

The "Wipe off 5" advertising campaigns in the Australian state of Victoria are designed to show road users that low-level speeding has a big impact on stopping distances.

The Wipe Off 5 campaign began in August 2001 to educate road users about the dangers of travelling, even a little, over the speed limit. Many drivers believe that driving 5 to 10 km/h over the posted speed limit is acceptable, but evidence shows that if Victorian drivers reduced their average speed by 5 km/h, up to 95 lives could be saved and 1300 serious injuries prevented in one year.

Wipe off 5 (Transport Accident Commission)

Watch some of the videos: Wipeoff5 (Youtube)

Use a stopping distance calculator to see how the reacting/thinking, braking and stopping distances change when you "wipe off 5" from the speed you normally use to travel to and from school.

Car Stopping Distance Calculator

Discuss the arguments for and against wiping off 5. Does wiping off 5 make a difference to road safety?

Write a blog post in response to the Wipe off 5 campaigns. Justify your response with reasons and evidence.

Road code links	Pathways Awarua modules	Possible evidence for:
Page numbers from 2023 hardcopy. **Key driving skills** Following distance p55 **Sharing the road** Sharing the road with trucks and buses p166 **Supported by Drive:** What is good driving? The truth about speed Stopping and parking	RC-400. Responsible driving RC-301. Speed and curves RC-411. Stopping in good conditions RC-412. Stopping in different conditions	Unit 26622: Write to communicate ideas for a purpose and audience. AS 90853: English 1.9 Use information literacy skills to form conclusion(s). AS 90053 English 1.5 Produce formal writing.

Activity 1.6.9: What's the deal with cell phones?

Distractions matter because they delay a driver's reactions. You can see the impact of distractions when you compare stopping distances for distracted and focused drivers.

Rules about using cell phones when driving are designed to help drivers manage stopping distances.

Responsible driving (road code online) (print page 138)

The table below shows the distances needed for stopping when a driver is distracted because he or she is using a phone.

Use the Car Stopping Distance Calculator to complete the table.

Car Stopping Distance Calculator

Assume that talking on a cell phone will increase the 1-second thinking time by 0.46s. Change the custom time to 1.46s.

Typical stopping distances with a distraction (cell phone) on dry roads

Speed km/h	Thinking time s	Reaction/thinking distance m	Braking distance m	Stopping distance	
				in metres (m)	in car lengths (1 car length = about 4m)
30	1.46				
40	1.46				
50	1.46				
60	1.46				
70	1.46				
80	1.46				
90	1.46				
100	1.46				

Draw a graph showing how reacting, braking and stopping distances change as the speed of the car increases.

- You will need to decide on the best kind of graph to represent your data.
- Use a colour key to distinguish between the three different kinds of distances.
- Make your graph a sensible size, give it a title and label the axes (include units).

Use data from your graph or table to answer the following questions.

- What is the stopping distance when using a phone and travelling at 50km/h?
- What is the stopping distance when using a phone and travelling at 100km/h?
- How much does stopping distance increase when the travelling speed increases from 50km/h to 100k/h?

Compare your figures to those in Activity 1.6.7 to determine how the total stopping distance changes when drivers are distracted because they are using a cell phone.

Why would the time taken to notice a hazard and react change if a driver was using a cell phone?

Return to the place in the school grounds where you marked out reacting/thinking and breaking distances in Activity 1.6.7.

- Pace out the extra distances that will be involved if a driver is distracted by texting or talking on a cell phone.
- Write a report on your investigation. Include screenshots and photos from your graphing and measuring activity.

Discuss how you would persuade a friend or family member that using a cell phone when driving is as dangerous as driving drunk?

Road code links	Pathways Awarua modules	Possible evidence for:
Page numbers from 2023 hardcopy. Responsible driving Stepping over the line p146 **Supported by Drive:** The dangers of distraction What is good driving? The truth about speed Stopping and parking	RC-400. Responsible driving RC-301. Speed and curves RC-411. Stopping in good conditions RC-412. Stopping in different conditions	Unit 26623: Use number to solve problems. Unit 26626: Interpret statistical information for a purpose. Unit 26622: Write to communicate ideas for a purpose and audience. AS 90853: English 1.9 Use information literacy skills to form conclusion(s). AS 90053 English 1.5 Produce formal writing.

Activity 1.6.10: Drugged drivers

The NZ road code makes it clear that alcohol and drugs can seriously affect your driving by slowing your reaction time and affecting your senses.

Alcohol and drugs, including some drugs given to you by a doctor, can seriously affect your driving. They can slow your reaction times and affect your senses.

You risk causing death and serious injury to yourself and other people if you drive under the influence of alcohol or drugs.

Alcohol and drug limits (print page 128)

Use the road code to find out more about the legal limits for young drivers under 20 years of age, and the rights and the penalties for young people driving under the influence of alcohol or drugs.

Discuss the facts you discovered.

Discussion prompts

[think–pair–share, or small group or whole class discussion only]

Did any of the rules or penalties surprise you? Are the rules for drink and drugged driving in New Zealand the same as those in other countries?

Although the effects of drink and drugs on driver behaviour are well established, some drivers still use alcohol or drugs before getting behind the wheel.

Movie director Taika Waititi directed a television advertisement *Blazed – drug driving in Aotearoa* with a key message: when a person uses cannabis, they do things slower than usual.

If you do things slower than usual when you are driving, then your reaction time is slower, and you are less able to react quickly if anything unexpected happens.

Blazed – drug driving in Aotearoa (NZ on Screen)

Watch the video. Take notes while you are watching it.

Note: The following resource will help teachers develop learning experiences based on exploring moving images.

English online: Moving images

With a partner, plan and create an infographic based on the key messages from Blazed.

In your infographic, you should communicate information about drugged driving, slower reaction times and stopping distances.

Road code links	Pathways Awarua modules	Possible evidence for:
Page numbers from 2023 hardcopy. **About limits** Alcohol and drug limits p128 **Supported by Drive:** What is good driving? Alcohol, drugs and medications Stepping over the line	RC-400. Responsible driving RC-301. Speed and curves RC-411. Stopping in good conditions RC-412. Stopping in different conditions	Unit 26624: Read texts with understanding. Unit 1280: Use graphics in communication. AS 90855: Create a visual text. AS 91103 Create a crafted and controlled visual and verbal text.

Section reflection

What do you know you don't know about citizenship in the context of the safe road network?

What have you learnt that is new to you about citizenship in the context of the safe road network?

What do you wonder about citizenship in the context of the safe road network?

Use the student responses to make decisions about follow-up sessions.