

Everyone is a road user – Five sample activities

The following activities offer an opportunity to introduce students to the “wicked transport problems” that face road users seeking safer journeys on local roads.

ACTIVITY 1: Determining Prior Knowledge

ACTIVITY 2: Exploring local roads.

ACTIVITY 3: Parking on local roads. [Maths]

ACTIVITY 4: Stories about road users. [English]

ACTIVITY 5: Seeing and reacting on local roads. [Science]

They have been selected from the NZ Transport Agency resource “Everyone is a road user”.

Each activity is tagged with a reference number identifying where it is located in the full resources. The reference enables teachers to explore alternative activities to build understanding and extend understanding of the “wicked transport problems” for road users on local roads.

ACTIVITY 1: Determining Prior Knowledge

Finding out what students know about the challenges (problems and opportunities) for road users on local roads before we start

Ask students to:

- Pause – clear your mind and then think deeply about challenges (problems and opportunities) and keeping safe on local roads. What is dangerous and what is wonderful about local roads?
- Discuss the following question prompts in turn.
 - **What are the dangerous things** you know to watch out for on local roads?
 - **What are the wonderful things** provided by local roads?
 - **What have you done** that was potentially dangerous on a local road?
 - **Why do you think** you did this?
 - **What have you done** that was wonderful when using a local road?
 - **Why do you think** you did this?
 - **What have you seen** other people do that was dangerous on a local road?
 - **Why do you think** people do things that are dangerous on local roads?
 - **How do you feel** when you see people doing things that are dangerous on local roads?
 - **What do you do** when you see people doing things that are dangerous on local roads?
 - **What have you seen** other people do that was wonderful when using a local road?
 - **Why do you think** people use local roads to do things that are wonderful?
 - **How do you feel** when you see people using local roads to do things that are wonderful?
 - **What do you do** when you see people using local roads to do things that are wonderful?
 - **What do kids need to know** about keeping safe on local roads?
 - **What do grown-ups need to know** about keeping safe on local roads?
 - **How should we help kids** to keep safe on local roads?
 - **How should we help grown-ups** to keep safe on local roads?
- Record your answers to each question on a collaborative online document (e.g. Google Forms www.google.com/google-d-s/createforms.html) or using Post-it notes and large sheets of newsprint.
- Discuss each question in a small group and then with the class.
- At the end of the discussion on each question, collate your individual and group responses for future reference.

The Official New Zealand Road Code has a list of facts that are worth thinking about before starting the activities exploring safer journeys on local roads.

Ask students to:

Choose a fact that interests you and make a visual image to communicate the same message. Look for connections between your images and other's images.

What children would like drivers to know (*The Official New Zealand Road Code*, pp. 248–249)

www.nzta.govt.nz/resources/roadcode/about-other-road-users/sharing-road-with-pedestrians.html

- Children are not little adults, so don't expect them to act as adults do.
- Children, especially those under the age of nine, may not have the skills and abilities needed to be safe in traffic. Be very careful when driving near them.
- Young children have narrow vision. This means they may not see vehicles as easily as adults do.
- Children have trouble judging the speed of moving vehicles. They may let a slow vehicle pass and try to cross in front of a fast one.
- Children often don't understand that it takes time for a vehicle to stop.
- Children may have difficulty working out where sounds are coming from.
- Because children are small, they often can't see over bushes and parked vehicles. This also means they can't be seen easily by drivers.
- Children tend to think about one thing at a time and ignore other things happening around them.
- Because children are always on the move, they may have trouble stopping at a kerb and could dart out into traffic.
- Children can freeze when they find themselves in danger, instead of taking quick action as an adult might.

Keep a lookout for children at all times. Take special care when driving during 8–9am and 3–4pm, when children are travelling to and from school.

ACTIVITY 2: Exploring local roads.

What are your local roads like? Who uses your local roads? What challenges (problems and opportunities) do road users face on local roads?

A half-hour walk [Refer Everyone is a road user – English: 1.1.1]

Ask students to:

Go for a half-hour walk to explore the local roads in your community. Look for the challenges (problems and opportunities) that the roads provide for road users. What do you see? Who do you meet? What stories can you find? What poems are waiting to be written?

Pause frequently to notice the small stuff that is easily missed when driving or cycling on the road. Use all your senses to record what the roads are like. Take photographs, video, sketch, record street noises and/or make written or oral notes to help you remember. Reflect on your walk when you return; use Google Street View to prompt your reflections.

Use the instructions for Ze Frank's Childhood Walk http://www.zefrank.com/the_walk/ to create a collaborative gallery, of Google Street View memories, about places on the local road.

Create a visual text inspired by your walk, the things you saw and the people you met. If some students travelled the same route by bicycle or as passengers in a car, how would their experience be different from yours? What might their visual text look like?

Map your walk on large sheets of paper or by using Google Earth <https://earth.google.com> Create a collaborative map on which different groups of students can mark each challenge or opportunity they find – adding photos, video, audio and written and oral descriptions.

Discussion prompts

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

Look at the map showing problems and opportunities for road users on local roads.

What do you see? Why do you think it is like that? What does it make you wonder?

If you are a citizen using the local roads as a cyclist, pedestrian or passenger, what is worth sharing about safer journeys on local roads?

ACTIVITY 3: Parking on local roads

What are the hazards for people, places and the planet when we create parking spaces for cars? [Refer Everyone is a road user – Maths 1.3.1]

“They've paved paradise and put up a parking lot.” Joni Mitchell

Parked cars take up a lot of space which creates problems for people, places and the planet.

Just as schools spend the majority of the time empty, vehicles spend the majority of the time parked. The demand for parking space has increased along with the increase in car ownership.

Refer to:

How parking spaces are eating our cities alive (Video): www.citylab.com/commute/2014/07/how-parking-spaces-are-eating-our-cities-alive/374413/

The case for tearing down park and ride lots: www.citylab.com/cityfixer/2014/06/the-case-for-tearing-down-park-and-ride-lots/372558/

Ask students to:

List ways in which parking vehicles creates challenges (problems and opportunities).

For example,

- Parking areas bring pedestrians and cars together in small spaces.
- The restricted space in a parking lot leaves no room for evasive action if a pedestrian steps into the path of a car.
- Parking areas on the side of the road or in parking lots are “shape-shifter” zones. Drivers become pedestrians and pedestrians become drivers. Problems arise when people continue to act as if they were a driver when they are now on foot, and vice versa.
- Drivers are distracted when cruising around looking for a space.
- Distracted pedestrians (cell phone use when get out of cars and leave parking lot).
- Lack of affordable parking increases use of public transport, car pooling etc.
- The creation of parking spaces harms the environment.
- Lack of parking is bad for retail businesses.
- Non-drivers subsidise the cost of providing parking for drivers.
- Providing more spaces simply creates more demand.

Create an official code of practice for a parking lot in your local community. What are the skills and responsibilities needed when using a parking lot? Refer to three levels of skills and responsibilities outlined in *The Official New Zealand Code for Cyclists* (pp. 17–35) to see what this might look like: www.nzta.govt.nz/resources/roadcode/cyclist-code/index.html

Discussion prompts

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

Look at official code of practice for a parking lot in your local community.

What do you notice? Why do you think it is like that? What does it make you wonder?

If you are a citizen using the local roads as a cyclist, pedestrian or passenger, what is worth sharing about keeping safe when parking?

How much space is used for car parking? [Refer Everyone is a road user – Maths: 1.3.2.]

Ask students to work in groups to come up with three different strategies for determining the surface area needed by a parked car. Provide students with card and model cars to help them think.

Students should record their three strategies using annotated diagrams or photographs.

Strategies for determining the surface area that a parked car needs

Strategy 1	Strategy 2	Strategy 3

Groups will select their best strategy using a decision-making grid like the one below and success criteria constructed by the class.

Note: The criteria should: be simple; address only one concern; use superlatives (best, least, most, greatest); indicate a desired direction; and be based on what you have identified as important when determining the surface area covered by a parked car.

Some examples are suggested below but the class should identify the final criteria for a successful strategy.

Each group uses the established criteria to assess their strategies. Give each strategy a score out of 3 for each criterion (from 3 best to 1 worst).

Total the scores for each strategy and circle the “best strategy”. Explain why your group thinks it is the best strategy.

Decision-making grid to determine the best strategy

Criteria	Score (from 1 worst to 3 best)		
	Strategy 1	Strategy 2	Strategy 3
Which strategy will be the easiest to implement with existing resources?			
Which strategy will give the most accurate results?			
Which strategy requires the least preparation?			
Which strategy is least likely to damage the car?			
Which strategy will be the most fun to use?			
Total			

Ask students to share their strategies with the class. Explain to students that they are now ready to use area finding strategies with real cars.

Make the following resources available: chalk, road cones, bean bags, string, tape measures, calculators, print maps, Google Maps.

- Arrange for several cars to be parked in an open space in the school grounds.
- With the students, mark an outline around the perimeter of each car on the ground using string, cones, chalk etc. Carefully move the cars back onto the road.

Ask students to:

- Use the outline to calculate the area of ground covered by each car.
- Calculate the total area taken up by the cars.
- Calculate the average area taken up by one car. Explain why the area marked out in a parking area is liable to be greater than the area calculated.

Discussion prompts

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

Look at the strategies used for parking vehicles on local roads.

What is common to all the strategies? Why do you think it is like that? What does it make you wonder?

If you are a citizen using the local roads as a cyclist, pedestrian or passenger, what is worth sharing about parking – the challenges (problems and opportunities)?

Extension: Count the number of parked cars in the school parking area. Use your previous parking bay calculations to estimate the “footprint” of cars in the school grounds. Explain why the actual area needed for the school car park is greater than this.

Go for a walk around the school and estimate the number of cars associated with the school that are parked on the street. Use this figure to calculate the area needed for school-related parking. How does this figure relate to the number of people on the school campus?

How could you reduce the area needed for school-related parking? What effect might this have on road users on local roads?

ACTIVITY 4: Stories about road users.

How is using the road portrayed in poetry and children’s books? [Refer Everyone is a road user – English 3.1.1.]

Ask students to read and view texts about the knowledge and skills that young road users (cyclists, pedestrians or passengers) need to stay safe on the roads.

Reference: *The Official New Zealand Code for Cyclists* lists skills, rules and responsibilities needed for beginning, intermediate and advanced cyclists: pp. 17–21,
www.nzta.govt.nz/resources/roadcode/cyclist-code/index.html

Other suitable texts for keeping safe when cycling

NZTA – By bike: www.nzta.govt.nz/traffic/ways/bike

NZTA – Cycle safety: www.bikewise.co.nz/bikes-riding/cycle-safety

Ministry of Health – Cycling: www.health.govt.nz/your-health/healthy-living/food-and-physical-activity/physical-activity/activity-guides/cycling

Road safety for cyclists: www.sustrans.org.uk/change-your-travel/get-cycling/road-safety-cyclists

Cycling safety advice: www.nhs.uk/Livewell/Roadsafety/Pages/Cyclists.aspx

How to stay safe on your way to work: Eight tips for safer cycling:

www.bikeradar.com/gear/article/how-to-stay-safe-on-your-ride-to-work-29886/

Cycling: The key ways to stay safe: www.theguardian.com/lifeandstyle/2009/dec/03/cycling-ways-to-stay-safe

Be on the safe side: http://roadsafety.transport.nsw.gov.au/stayingsafe/bicyclists/safe_riding.html

After reading the texts, ask students to:

Make a checklist of up to 10 actions that help keep young road users (cyclists, pedestrians or passengers) safe when they are using the road.

Read a poem or children’s book that features young road users (e.g. cyclists, passengers or pedestrians).

You may choose your own favourite road user poem/book or choose one from the list below.

Analyse the poem/book from the perspective of an advocate for safe road use.

Consider how well the poem/book shows the responsibilities outlined in *The Official New Zealand Code for Cyclists*: www.nzta.govt.nz/resources/roadcode/cyclist-code/index.html How many safe actions from the code’s checklist does the poem/book describe?

Write a blog post or an open letter to the author/poet praising or expressing concern over their portrayal of road user behaviours in the text.

Discussion prompts

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

Think about how safe user behaviour is communicated through poetry and children’s books.

What do you notice in the poems/books about cyclists? Why do you think it is like that? What does it make you wonder?

If you are a citizen using the local roads as a cyclist, pedestrian or passenger, what is worth sharing about road user messages in poems/books? And who is it worth sharing these messages with?

A list of suggested texts follows. For a full list of titles and brief summaries of each book, refer to Appendix 2.

Suitable books about cycling

Non-fiction

The Official New Zealand Code for Cyclists: www.nzta.govt.nz/resources/roadcode/cyclist-code/index.html (Refer to the sections with information for other road users (pp. 255 to 263) and the cyclist's responsibilities (p. 21))

Elizabeth Raum, *Timeline History: Transportation: From Walking to High-speed Rail* (Chicago: Heinemann Library, 2011).

Joanne Mattern, *Staying Safe on My Bike* (Milwaukee: Weekly Reader Early Learning, 2007).

Lisa M. Herrington, *Bicycle Safety* (Auckland: Scholastic, 2013).

Michelle Mulder, *Pedal It! How Bicycles are Changing the World* (Victoria, B.C.: Orca Book Publishers, 2013).

Paul Mason, *Instant Expert: Bike Mechanic* (London: A & C Black Publishers Limited, 2011).

Fiction

A. B. Paterson, illustrated by Kilmeny and Deborah Niland, *Mulga Bill's Bicycle* (Australia: Angus & Robertson, 1973).

Allen Say, *The Bicycle Man* (California: Parnassus Press, 1982).

Cari Best, illustrated by Christine Davenier, *Sally Jean, the Bicycle Queen* (New York: Farrar Straus Giroux, 2006).

Chris Raschka, *Everyone Can Learn to Ride a Bicycle* (New York: Schwartz & Wade Books, 2013).

Claudia Mills, illustrated by Catherine Stock, *Gus and Grandpa and the Two-wheeled Bike* (New York: Farrar Straus Giroux, 1999).

Emilie Warren McLeod, illustrated by David McPhail, *The Bear's Bicycle* (New York: Little, Brown & Company, 1975).

Errol McLeary, *The Path to Ponga Pond* (New Zealand: Scholastic, 2007).

Frank Viva, *Along a Long Road* (New York: Little, Brown and Company, 2011).

Mark Pett, *The Girl and the Bicycle* (New York, Simon & Schuster, 2014).

Matt Davies, *Ben Rides On* (New York: Roaring Book Press, 2013).

Mordicai Gerstein, *How to Bicycle to the Moon to Plant Sunflowers* (New York: Roaring Brook Press, 2013).

Peter Smith, illustrated by Bob Graham, *Monsieur Albert Rides to Glory* (Australia: Allen & Unwin, 2014).

Rod Waters, *Eric's Big Day: A Bicycle Race Unlike Any Other* (Colorado: VeloPress, 2014).

Stanley and Janice Berenstain, *The Bike Lesson* (London: HarperCollins, 1964).

Sue Stauffacher, illustrated by Sarah McMenemy, *Tillie the Terrible Swede: How One Woman, a Sewing Needle, and a Bicycle Changed History* (United States: Alfred A. Knopf, 2011).

Suitable poems about cycling

The World's Fastest Bicycle" by Kenn Nesbitt: www.poetry4kids.com/poem-381.html

Going Down Hill on a Bicycle – A Boy's Song by Henry Charles Beeching:

www.poets.org/poetsorg/poem/going-down-hill-bicycle

Mulga Bill's Bicycle by A.B. "Banjo" Paterson:

www.middlemiss.org/lit/authors/patersonab/poetry/mulgab.html

Snake Mistake by Kenn Nesbitt: www.poetry4kids.com/poemprint.php?poemid=502

Catch a Little Rhyme by Eve Merriam: www.poets.org/poetsorg/poem/catch-little-rhyme

The Rider by Naomi Shihab Nye: www.poets.org/poetsorg/poem/rider

Brandon Branson's Backpack by Ken Nesbitt: www.poetry4kids.com/poemprint.php?poemid=80

Ode to Bicycles by Pablo Neruda: <http://mirthmemoriesandmore.blogspot.co.nz/2007/08/ode-to-bicycles-pablo-neruda.html>

Boy on a Bicycle by James Roderick Burns:

www.poetrymagazines.org.uk/magazine/record.asp?id=10346

Bicycle by David Malouf: www.poetrylibrary.edu.au/poets/malouf-david/bicycle-0427036

Ten Poems about Bicycles edited by Jenny Swann:

www.candlestickpress.co.uk/pamphlet/ten-poems-about-bicycles

www.amazon.com/Ten-Poems-About-Bicycles-Various/dp/095589445X

ACTIVITY 5: Seeing on local roads.

What do drivers see? [Refer Everyone is a road user – Science 3.6]

Being able to “see” the pedestrian or cyclist is not as straightforward as it might seem. Just because you can see the car driver does not mean that the driver can see you.

After a collision a driver will sometimes claim that they did not see the pedestrian or cyclist. When travelling on the road, drivers focus most of their visual attention directly ahead (in a 60° cone of vision). Their focus on what is in front of them increases when visibility is poor or the traffic density is high. Drivers genuinely do not see objects on the edges of their gaze.

Pedestrians and cyclists are often outside the driver’s direct line of sight. If the driver sees them at all, it is in the driver’s peripheral vision (“out of the corner of my eye”). The eye finds it harder to detect objects seen in peripheral vision because there are fewer light-detecting cells in these areas of the retina.

Exploring peripheral vision [Refer Everyone is a road user – Science 3.6.1.]

Ask students to work in pairs to complete one of the following activities.

Either – Map your field of view

- Pin a large sheet of paper on the classroom wall.
- Student 1 stands close to the wall, in a position where the tip of his/her nose will be approximately 20cm away from the paper.
- Student 2 uses a marker pen to put a spot on the paper directly opposite the first student’s right eye.
- Student 1 covers their left eye and looks straight ahead – directly at the spot – with their right eye.
- Student 2 stands on the right-hand side of Student 1. Student 2 holds a marker pen against the paper about 2m away from the spot in front of the right eye of Student 1.
- Student 2 moves the marker slowly towards the spot. When the marker moves into Student 1’s field of view, they call out and Student 2 marks this position on the paper.
- This process is repeated for three further positions: 2m to the left of the spot; 2m above the spot; and 2m below the spot.
- The students join the four marks in a circle to represent the field of view (FOV) for the right eye of Student 1.
- This process can be repeated to determine the field of view for the left eye, while Student 1 covers their right eye.
- Look for any overlap between the two fields of view – this area represents binocular vision where the judgement of distance is easier.

Note: Some students will be interested in reading more about the use of FOV in video game design.

Refer to: FZD School of Design – EPISODE 29 FOV in Games part 1: <http://youtu.be/blZUao2jTGA>

Or –

Test the limits of your peripheral vision

Complete the activity described in Exploratorium Snacks – Peripheral vision:

www.exploratorium.edu/snacks/peripheral_vision

Then read the following information in *The Official New Zealand Road Code*:

- About other road users: Sharing the road, pp. 248 and 249:
www.nzta.govt.nz/resources/roadcode/about-other-road-users/sharing-road-with-pedestrians.html
- About other road users: Information for pedestrians, pp. 255 to 258:
www.nzta.govt.nz/resources/roadcode/about-other-road-users/information-for-pedestrians.html

Choose three pieces of information from the text and describe how each can be explained in part by thinking like a scientist about “field of view” and “peripheral vision”.

Use field of view to explain why, when you can clearly see a car approaching, the driver may not have seen you.

Text from “About other road users: Sharing the road”	Explanation
For example “Always be ready to stop near schools, bus stops and pedestrian crossings.”	<i>These are all places where pedestrians might step out into the road. If the driver is looking straight ahead, their field of view may not be wide enough to notice the pedestrian in time to put on the brakes and bring the car to a stop.</i>
“Young children have narrow vision. This means they may not see vehicles as easily as adults do.”	<i>Young children have a narrower field of view than adults. They will not see the same hazards that an adult sees; as a consequence, they may step into the road without seeing an approaching vehicle.</i>

Discussion prompts

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

Think about seeing and being seen when using the road.

What do you know? Why do you think it is like that? What does it make you wonder?

If you are a citizen using the local roads as a cyclist, pedestrian or passenger, what is worth sharing about “field of view” when using the road?