

Where have all the bikes gone?

Downloaded from www.education.nzta.govt.nz

Year 9/10 HPE Unit Outline

Introduction

This unit of work is designed for Year 9 and 10 students and it is set at Levels 4 and 5 of the New Zealand Curriculum. The main learning in this unit is enhancing students' bike skills and bike-riding knowledge while gaining a greater understanding of how cycling can increase the hauora of self, others and society. It involves creating a game, physical activity or social action that could help to positively influence the number of people cycling in the future. This unit allows students to consider cycling more often as a mode of transport. It also allows students to develop critical thinking skills and take action to design future transport.

Accessing bikes and helmets is important to completing this unit, and is a worthwhile issue to problem solve. Some schools may have a set of bikes and helmets. Other schools may be able to rely on students bringing in their own, or at least have enough for a ratio of one bike and helmet to every two students who are riding bikes. The closer the ratio of bikes to students is to 1:1 the better., Charitable trusts may assist in some regions.

A RAMS (Risk Assessment and Management Strategy) or SAP (Safety Action Plan) should be completed and approved prior to physical activities. Parents/caregivers will need to be informed and give consent for their child to take part. All bikes and helmets must be roadworthy and correctly fitted (especially important if bikes have been out of use for some time). Storage of bikes and helmets is another factor. If students bring bikes in, storage at school over the duration of the unit ensures you have the bikes in every lesson they are required.

Ideally this unit should last for 15 hours, spread over five weeks. Adapt as necessary. The first three weeks (nine lessons) is on learning how cycling can enhance hauora of self, others and society while taking part in practical activities. These lessons allow the students to enhance bike skills and gain greater confidence while learning about potential risks and challenges. Over the final couple of weeks, students use design thinking to create a game, physical activity or social action that will help to positively influence the number of people cycling in the future. This task will be in groups of three and will enable the students to develop skills in relating to others. More time in the later stage of the unit could improve outcomes.

Design thinking enables students to follow a process in which they gain empathy for the problem or issue they are trying to solve. This step allows the students to come to a deeper understanding of the problem/issue before being creative. It encourages innovative thinking before they take action. Design thinking also helps students turn their ideas into reality. Some incredible learning can take place when students are making something happen. Reflection and feedback on success and failure allow for rich learning experiences.

The collaborative nature of design thinking also lends itself to using Hellison's social responsibility model. Four SOLO Taxonomy rubrics cover self-direction, caring, participation and respect. These are written by Pam Hook from HookED. The rubrics allow students to self-assess during the unit of work and at the conclusion.

The design aspect of the unit provides a fantastic opportunity for teachers from across learning areas to collaborate and provide a multidisciplinary approach. The making and design thinking component of this unit would be enhanced if students tap into resources from the Technology learning area. Additionally, gaining more perspectives from areas such as Maths, English and Social Sciences would add depth to learning and thus allow students to potentially create even more meaningful games, activities or social actions.

New Zealand Curriculum links

Values

- Innovation, inquiry, and curiosity, by thinking critically, creatively, and reflectively
The use of design thinking enables learners to be critical (develop empathy), creative (ideate) and reflective (prototype and testing)
- Community and participation for the common good
Aiming to increase the numbers of people of bikes and people feeling more confident on bikes

Key Competencies

- Thinking
Using design thinking
- Using language, symbols, and texts
Reading and understanding key text that relates to road safety
- Managing self
When riding to ensure safe choices are being made. While working through the process of creating a game, activity or social action while in a group.
- Relating to others
While working through the process with others to create either a game, activity or social action
- Participating and contributing
Taking part and learning more about the importance of road safety while giving back to the community in the form of a game, physical activity or social action to enhance the learning of others regarding road safety

HPE Achievement Objectives Levels 4 & 5

A2 Regular physical activity

Demonstrate increased responsibility for incorporating regular and enjoyable physical activity into students' personal lifestyle to enhance well-being (e.g. riding bikes regularly and making links to hauora)

A3 Safety management

Access and use information to make and action safe choices in a range of contexts (e.g. preparing safety action plans for all physical activities that are designed and carried out)

B1 Movement skills

Demonstrate consistency and control of movement in a range of situations (e.g. being challenged to ride a bike in a variety of settings such as on the school courts, fields, campus, at local parks and on the road as well as riding in a variety of different contexts e.g. cyclocross, time trials, group riding, social riding)

B2 Positive attitudes

Demonstrate willingness to accept challenges, learn new skills and strategies, and extend their abilities in movement-related activities (e.g. learning new skills on the bikes appropriate to each learner's level such as how to ride a bike, ride a bike with confidence, ride a bike with confidence while functioning safely on the road with other road users)

B3 Science and technology

Experience and demonstrate how science, technology, and the environment influence the selection and use of equipment in a variety of settings (e.g. the use of different technology such as cameras/GoPro to enable much greater perspective to be gained from cycling experiences thus allowing the learners a much greater understanding of challenges/ potential risks that exist when people are cycling)

C3 Interpersonal skills

Describe and demonstrate a range of assertive communication skills and processes that enable them to interact appropriately with other people (e.g. work that goes on within the groups as they create their own game, physical activity or social action to enhance cycling in their local area. This may include collaborative agreements within teams, feedback and feedforward skills that are developed during the prototype/testing phases)

D1 Societal attitudes and values

Investigate and describe lifestyle factors and media influences that contribute to the wellbeing of people in New Zealand (e.g. why are less people on bikes now compared with the past? What has changed and how could the wellbeing of New Zealanders be enhanced if more people were cycling)

D3 Rights, responsibilities, and laws; D4 People and the environment

Specify individual responsibilities and take collective action for the care and safety of other people in their school and wider community (e.g. rules based around cycling on the road, keeping yourself and others safe. Knowing personal environments and taking action to improve them so that students, others and society can be safer on the roads riding bikes)

Learning intentions

- Enhance bike riding skills and road safety knowledge
- Explore the effect cycling has on hauora of self, others and society
- Develop a deeper understanding of the current cycling situation within students' local communities
- Use technology to gain greater perspectives regarding road safety while riding a bike
- Learn how the design thinking process works and apply it to create a game, physical activity or social action
- Work in a team to create a game, physical activity or social action and present this

Online ICT resources

Useful posters to put up around school

https://www.bikewise.co.nz/sites/default/files/safety_tips_urban_web.pdf

RAMS Risk Management Plan and Action Plan Templates

<http://eotc.tki.org.nz/EOTC-home/EOTC-Guidelines/Tool-Kit>

Useful background information regarding the importance of cycling in our communities

<https://www.nzta.govt.nz/assets/Walking-Cycling-and-Public-Transport/docs/benefits-of-investing-in-cycling/cyclelife-benefits-booklet.pdf>

<https://www.nzta.govt.nz/assets/Walking-Cycling-and-Public-Transport/docs/NZTA-summary-of-attitudes-and-perceptions-of-cycling->

<http://www.transport.govt.nz/assets/Uploads/Research/Documents/25yrs-of-Travel-Summary.pdf>

Bike maintenance

<https://www.youtube.com/playlist?list=PLwdQL7ny3E69KmXMU7crT2jPIvfPMqxES>

Hauora (Total Wellbeing defined)

<http://health.tki.org.nz/Teaching-in-HPE/Health-and-PE-in-the-NZC/Health-and-PE-in-the-NZC-1999/Underlying-concepts/Well-being-hauora>

The Road Code for Cyclists

<http://www.nzta.govt.nz/resources/roadcode/cyclist-code/about-cycling/cyclist-responsibilities/>

The MOT 25 years of Travel Study Summary

<http://www.transport.govt.nz/assets/Uploads/Research/Documents/25yrs-of-Travel-Summary.pdf>

How to sign in and make a Kahoot (online quiz)

https://getkahoot.com/?utm_name=controller_app&utm_source=web_app&utm_medium=link

New Zealand Cyclocross site and local video footage

<http://www.nzcyclocross.co.nz/what-is-cx.html>

<https://www.youtube.com/watch?v=cxrBqJ5R3Hs>

Design Thinking resources

<https://www.youtube.com/watch?v=a7sEoEvT8l8>

<http://www.designthinkingforeducators.com/>

<http://www.slideshare.net/secret/hXywrXCQaHOLO>

How to sign in and use Padlet

<https://padlet.com/>

Solo Taxonomy resources (see HookED resources attached)

Hexagon A4 Template

<http://pamhook.com/wp-content/uploads/2012/12/HookED-SOLO-Hexagons-Template-Secondary.pdf>

Lesson plans: Where have all the bikes gone?

Lesson 1 - Getting started on a bike

The big ideas and key skills

- Ensuring the bike and helmet are correctly fitted
- How to look after a bike
- Important safety measures
- Trust in one another

The activities

- Develop Class Safety Guidelines for how students will manage themselves when using bikes in various environments. Guidelines could be outlined in poster form, on a whiteboard with a photo taken, or on a padlet.
- Go over the key features of a bike to make sure every student understands how the bike is set up, how to maintain it and simple tips for riding. Basics to include (but are not limited to):
 - Fitting helmet
 - Adjusting seat to fit
 - How to change gears
 - When and how to use brakes
 - Ensuring brakes are on and quick release levers are secured tightly
 - How to get the chain back on if it falls off
 - How to pump the tyres up and how much air is need for the type of riding
 - How to change a tyre
- Cycling self-assessment: use the attached resource - Cycling: Knowing how to ride safely on the road Solo Assessment Rubric
- Partner bike relay with seat down. Divide students into pairs with one bike per pair. Ask students to ride 100-200 metres out and back with the seat down to its lowest point (easy if the bike has a quick release lever). If it doesn't, the students could do the task while trying not to sit down. After both have completed the first return ride, they adjust the seat to its correct height and continue the activity. If students are not comfortable with riding the bike at this point it may be best to allow them to observe this activity.
- Class discussion based on the seat down relay exploring the following points:
 - Ensuring bikes are correctly set up for the individual
 - The effect that seat height has on riding a bike
 - The importance of ensuring helmets are swapped over and adjusted accordingly

Notes for teachers

- Given the nature of this unit with students riding bikes in both closed and open environments, the class needs to establish some basic guidelines so everyone can operate in a safe manner and get the most out of the experience. These guidelines need to be visible when the class meets so that student behaviours can be discussed and always brought back to the agreed guidelines. The teacher will introduce the unit including activities that the students will be taking part in and the environments they will going into. Involve the students in developing guidelines and what to do if guidelines are not adhered to so that safety is always put first.

- It would be ideal to try to get a local bike mechanic in to go over the key features of the bike, how to size it up and how to maintain a bike. They will also be able to advise on how to correctly fit helmets as well. If you are unable to get someone in, you could use relevant “how to” videos such as these put together by Auckland Transport [Bike Clips](#).
- Self-assessment - The Cycling self-assessment rubric allows the students to see what they need to focus to enable them to improve. This rubric could be used as a quick and simple learning tool as you go through the unit.
- If time permits, you could set up a simple time trial bike race. If possible pair students up who are a similar height so that big adjustments don't need to be made each time the bike is swapped. The time trial could be a timed relay where students ride out and back on the school fields or courts and then swap over with their partner who does the same. The twist with this activity is to get the pair to drop the seat down to its lowest point for the first leg and then ask that they put them back to the correct height for the second leg. The students will soon realise the importance of riding a bike that is correctly set up for the individual. This will also allow for discussion around the following points:
 - Ensuring bikes are correctly set up the individual
 - The effect that seat height has on riding a bike
 - The importance of ensuring helmets are swapped over and adjusted accordingly

Resources: Bikes, helmets, bike pump, repair kit, cones, personal devices, blank A2/3 paper for Class Safety Guidelines

Lesson 2 - Bikes skills and my hauora

The big ideas and key skills

- Recap Class Safety Guidelines
- Recapping important aspects from the previous lesson regarding bike safety and set up etc.
- Bike handling skills
- How does cycling affect hauora

The activities

- Recap Class Safety Guidelines - ask students if they would change any in light of observations after the previous class.
- Recap important bike setup and safety tips.
- Introduce the bike warm up which will be performed at the start of each physical lesson. Students create a bike course in pairs that takes three to four minutes to complete. This must be on the school campus and has the rider turning both left and right, going up and down a small hill (if possible) and around a tree. Add any other requirements according to your environment and students. During the warm up, students should practice changing gears, braking, riding with one hand on the handlebars, looking back etc.
- Bike handling course on the courts - set up three different courses that get the students weaving through cones, changing direction using both tight turns around corners and big open turns around corners, stopping and then starting again. One person rides while the other times or supports depending on the course. The reason for three different courses is to allow students to opt into where they feel more comfortable:
 - 1) the getting started course for those who are new to cycling or need more confidence
 - 2) the group that feels confident but is happy to take things at a gentle pace
 - 3) the confident group that would like to make it more competitive and do time trials around the course.
- Time Trials - come up with a designated area that will be known as the students' time trial course. It could be as simple as using a grass 400m athletics track in the summer months. The students complete the time trial course, one person riding while the other times. Students record times on a notebook or personal device and observe improvements.
- How is our hauora affected by cycling? Get the students into small groups to come up with how each of the dimensions of hauora is affected by cycling in a positive way. Either get students to share back their ideas with the class or get them to put ideas up on a padlet.
- Question to ask at home tonight to parents/whānau/caregivers/grandparents etc. What has changed in terms of young people and cycling to school from when they went to school? Why do you think this has happened?

Notes for teachers

- Bring the Class Safety Guidelines or display them on a screen so they can be discussed
- When recapping bike fitting and safety points, ensure emphasis is placed on checking the bike prior to riding, and helmets are being worn correctly
- You will always start with a bike warm up, so give yourself a little extra time to ensure the students understand what is expected of them. This ensures they can do this with very little instruction in future lessons.
- Set up the bike handling courses with cones prior to the lesson starting to allow for better transition time between activities. The closer the cones are together the slower the riders will be.

- Time trials - keep this simple. You are just enabling students to cycle in a relatively safe environment and getting them to think about gaining more confidence or, for those with lots of confidence, getting them to ride faster.
- Some ideas for how [hauora](#) can be positively affected by cycling include but are not limited to:
 - taha tinana - improved anaerobic and aerobic fitness, improved strength and power, improved cardiovascular and respiratory systems
 - Taha whānau - cycling with others to and from school could be very social and might create social links with others
 - Taha wairua - increase sense of purpose, enable the achievement of other goals students have set for themselves
 - Taha hinengaro – allow space for thinking time, a place to take your mind off other things, get a buzz from riding fast and having the wind on your face
- The question being asked of the students and older whānau/caregivers may set the scene for the next lesson's activity based around why cycling in schools is on the decline

Resources Bikes, helmets, cones, timing devices, either blank paper and pens or personal devices, a cycling hauora padlet already created

Lesson 3 - Why are so few students riding bikes to school?

The big ideas and key skills

- Recap the influence cycling can have on hauora
- Investigate the statistics showing a decline in cycling in New Zealand and discuss the reasons for this
- Develop communication skills for riding with others on the road

The activities

- Hauora recap: review how cycling can influence a person's hauora. Have the padlet on display and ask if students have any other examples.
- Ask students to share in pairs/three what older whānau members/caregivers said about what cycling was like when they were younger. Ask them to discuss why they think it is different now. Ask students to feedback to the whole class any common themes.
- Give students (either in paper or in digital form) a Hooked ED Solo Describe map (attached) to complete regarding the statistics from the [25 Years of NZ Travel Study](#) with the infographic from the study below the main feature in the centre of the page:

Cycling has seen the most dramatic decline in rates for getting to school. In the late 1980s, 12 percent of primary school journeys and 19 percent of secondary school journeys were by bike, but by 2010-2014 this had fallen to 2 percent and 3 percent respectively.

1989/90 travel to school

19% of secondary school children biked

12% of primary school children biked

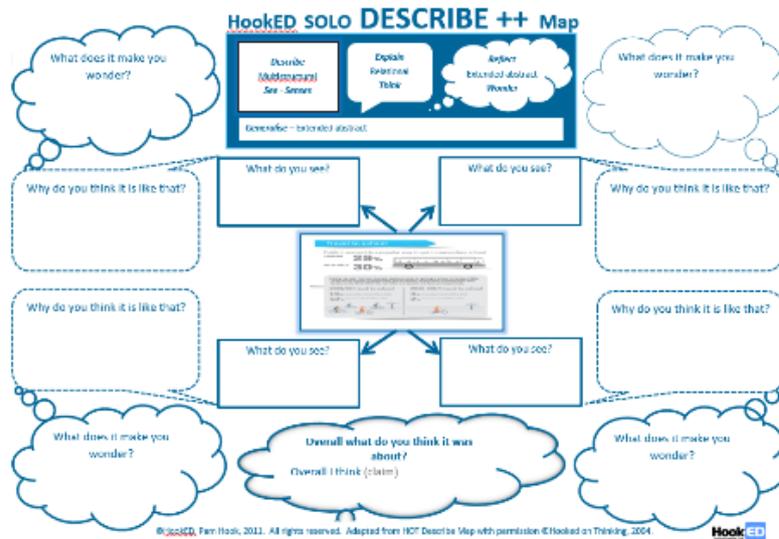


2010-2014 travel to school

3% of secondary school children biked

2% of primary school children biked





- Students complete the warm up ride they created in the previous lesson, ensuring that a bike and helmet check is completed prior to anyone cycling.
- Then ask students to cycle around their own warm up course again practising hand signals as shown in this [NZTA Resource](#). For many, gaining confidence in taking one hand off the handle bars will be a big step. Once students feel confident using hand signals, ask them to continue to ride around a predetermined course, but this time in small groups. Ask students to practice using the hand signals for slowing down, stopping, turning left and right while also practising pointing out potential hazards while they ride. In a small group, they should all take turns at leading and getting used to a chain reaction of commands as they ride together.

Notes for teachers

- You may want to explain the [MOT 25 Years of NZ Travel Study](#) to your students prior to giving out the Solo Map task as it may back up some of the conversations that students have had at home.
- The Solo Describe map allows learners to think in multi-structural, relational and extended abstract ways around the issues of cycling within our community both now and in the past. Observe the level the students are thinking at. This enables the teacher to give more targeted feed forward to help students develop a deeper sense of understanding around cycling in their community (a copy of Solo describe map is provided at the end of this document).
- If the students understood the warm up task from the previous lesson, they should get on with task. The use of predetermined paths/tracks/routes that the students know will cut down on instruction time and allow more active time. Always ensure a bike and helmet check is carried out prior to cycling.
- Hand signals are a very important communication method for not only cyclists with other cyclists but also with all other road users to indicate a cyclist's movements in advance. Stress the importance of this in creating a safer road system so that everyone is more informed while using the road. This [NZTA Resource](#) talks about this and provides more helpful information.

Resources Hauora padlet, digital or paper solo Describe Maps, bikes and helmets

Lesson 4 - Knowing the rules and riding in a group

The big ideas and key skills

- Recap issues relating to the recent decrease in students cycling to schools
- Learning important rules cycling rules and accessing the cycling road code
- Creating an online or quiz with information learnt while reading the cycling road code
- Enhance bike skills while being challenged in a different context - group riding

The activities

- Warm up - same as previous lessons. Remind students to add hand signals into their warm up ride.
- Group riding - using a designated course like a grass athletics track, get students into groups of four to six. Explain to the class the benefits of drafting and aerodynamics and how cyclists can work together to go faster and be more efficient. Discuss the importance of communication so that group rides remain safe.
- Task 1 - each group cycles around the 400m running track twice, with riders using hand signals when they go into each bend, when they stop at the end of the two laps and when they spot a potential hazard on the track (that the teacher may have placed prior). The group must stay together for the whole ride and everyone should be taking their turn at the front.
- Task 2 - group time trials - get each of the groups to see how fast they can get around the track while staying together and using hand signal communication.
- A quick recap of the [MOT 25 Years of NZ Travel Study](#). Ask students to share reflections. This could be as part of a small group discussion or as a larger full class discussion.
- Make the [Cycling Road Code](#) available to students via paper or digital copy and ask them to come up with a 15-question quiz using the different sections of the Cycling Road Code. This quiz could be created on paper or by using a Google form/Office 365 form or by creating one on an app like [Kahoot](#).

Notes for teachers

- Group riding important information can be found in the [Cycling Road Code](#) to help you with main points to impart.
- The recap of the MOT 25 Years of NZ Travel Study will allow students to share what they thought about the issue of student cycling numbers decreasing and to share any questions.
- If students don't get enough time to complete the Cycling Road Code during class time, this could be done as individual homework so they have a quiz ready for the next lesson.

Resources – Bikes, helmets, cones, screen, personal devices, NZTA Cycling Road Code

Lesson 5 - Knowing the rules and giving cyclocross a go

The big ideas and key skills

- Reinforce the main rules related to cycling on the road
- Enhance bike skills while being challenged in a different context - cyclocross

The activities

- Quiz challenge - ask students to pair up and have them test out each other with their quizzes. Swap over and ask students to take note of any questions they got wrong so they can start to understand those points. Ask them to pair up with another student in the class. Challenge them to work with someone who they might not usually work with. Repeat the process.
- Follow this up with a quick discussion about any rules that people were unaware of before looking into the Cycling Road Code and any rules they thought were interesting.
- Warm up - same as previous lessons and remind students to continue practising hand signals in their warm up ride.
- Introduction to cyclocross - you could show this [Cyclocross clip](#) to set the scene. Set pairs the challenge of doing X number of laps around a course you have created which has students riding on both grass and concrete with small hurdles placed around the circuit, forcing students to get off their bikes to get over them.

Notes for teachers

- The discussion following on from the quiz could be a great time to bring up rules that students may have left off their quiz while also encouraging deeper thought around the purpose of the rules and why they have been put in place. Take a chance to play devil's advocate by questioning what might happen if we took some rules out.
- To learn more about [cyclocross](#) click on the link. Early preparation in setting up a course will allow the lesson to flow. Have a variety of different surfaces within the circuit. Try to add any small mounds to go up and down and trees to go around as well as a few hurdles. Benches from the gym would make good hurdles. The variety the students experience could be related to the dynamic environment that is a road, providing rich discussion material.

Resources Student prepared quiz, screen, bikes, helmets, cones, hurdles and YouTube clip about [cyclocross](#)

Lesson 6 Getting a different perspective while on the road

The big ideas and key skills

- Using technology to gain a greater perspective of what's happening on the road
- Being safe on the road while riding in small groups
- Putting practised skills such as hand signals, gear changing, braking into action on the road

The activities

- Warm up - same as previous lessons and remind students to continue practicing hand signals and gear changes.
- To ensure safety, get another teacher to help you with this lesson. One teacher will stay back at school with those who are less confident about being out on the road, while the other goes out with the students on the road on a bike. Students choose which option they do. Those staying at school can set up or complete any of the previous cycling activities done as a class previously. Those going on the road need to wear a high visibility vest and choose a block or an area that students can cycle around. Choosing a block and getting the students to go anticlockwise will decrease risk as they will always be turning left with traffic rather than against it. Put the students in groups of no more than four to five and explain that the groups are not to become bigger than this. Point out that hand signals must be used at all times and that the groups must cycle in single file. Attach a GoPro camera or something similar on each group and explain how to turn them on etc. Ensure you attach it to different locations e.g. on a helmet, handlebars, back of a seat or on someone's back.
- Ensure groups are going out and then coming back to a meeting point and swapping with others if students are sharing bikes.
- Bring everyone together and ask those who were cycling on the road to share some of their experiences. Ask questions such as "what was it like cycling in a group on the road? How did you get on in terms of following the road rules? What potential hazards did you see while you were out there?" should promote helpful discussion.
- Ask that students bring a board game or an online game they like to play on a personal device for the next lesson.

Notes for teachers

- Setting up the class for this lesson requires the teacher to be comfortable with who they are allowing out on the road. It may pay to reflect and query any students who have struggled to comply with the safety guidelines. Review the Class Safety Guidelines at the beginning of this lesson.
- For those less confident, it's a chance to continue practising in a safe environment.
- Teacher-created groups would be the best practice for this type of activity as you need to ensure the groups are going to get on with the task in a safe manner.
- Once the lesson is over, upload the footage from the camera and take a snapshot of the footage from the different perspectives. Put this together via moviemaker/iMovie or similar so that it is set up for viewing in the next lesson.

Resources An extra teacher (get the principal to come and see the great learning that is going on!), GoPro Camera or something similar that is able to be mounted onto a bike, helmet or person. Bikes, helmets, high visibility bibs or vests.

Lesson 7 What actually happens when we are cycling on the road?

The big ideas and key skills

- Observing what is happening around people while they ride bikes
- Reflecting about road safety and if everyone shares the road in a thoughtful manner
- An introduction into the Design Thinking Process
- What makes a good game?

The activities

- Show the footage from the cameras attached to the students in the previous lesson to the class. Ask them to observe and note down what is happening related to what they have learned already. Prompt them with questions such as the one below in the notes.
- Viewing the footage will lead nicely into a class discussion about what they observed and what surprised or shocked them.
- Introduction to the design thinking process. Show this clip on [Design Thinking](#). Explain that over the last six lessons they have been in the empathy stage of design thinking: learning about how to cycle, the benefits to our hauora from cycling, why there has been a drop in the numbers of school children cycling and the rules associated with cycling on the road. The next step is a challenge which involves creating a game or physical activity that will enhance cycling skills, increase the player's knowledge and awareness of road rules how to share the road with others.
- What makes a great game? Over the remainder of the lesson, the students have the opportunity to play both an online game and a board game. While playing or just after they need to make a note of what they liked about the games they played and explain what makes these games so appealing for others to want to play them.

Notes for teachers

- Example questions to ask students while they watch the footage from the previous lesson: are students using hand signals? Are students following the road rules? What are some things they are doing well and what could they improve on? Are they keeping left? Are other road users sharing the road well? Are cars parked legally?
- The discussion that follows from watching the footage will allow the students to think about what shocked them or what they were surprised to see happening as they went around the block.
- The introduction into design thinking allows students to start getting the concept of the model that they will use in the last part of this unit. For more information on design thinking go to this resource [Design Thinking for Educators](#) or look up design thinking on the internet.
- As students play games for the remainder of the lesson, ask them questions like “what do you like about this game? Why is this game so popular?” so they can add these thoughts into the next lesson.

Resources - Footage from the cameras from the previous lesson. Board games, personal devices with online games, design thinking YouTube clip, screen

Lesson 8 What makes a great game continued and the start of the design process

The big ideas and key skills

- Gain a greater understanding of what makes games work
- Taking part in a design thinking processes
- Working with others to begin creating a project
- Thinking about potential risk and making a plan to avoid it

The activities

- Encourage students to reflect on what made games they played in the last lesson work well. Ask students to pair up or form small groups to discuss what makes a good game. Share ideas/thoughts with the class.
- Arrange students into groups of three or four. Take them through a design thinking process based on the question: “how might we create a physical game or activity that will enhance people's cycle skills?”
- Empathy stage -. Ask students to think about the problem from different people's perspectives and note down key ideas/issues (e.g. why are fewer people on bikes, why is that?)
- Define - ask students to identify the main themes that emerged from the empathy stage. Answers will form the group's key design principles for when they get creative.
- Ideate – encourage groups to come up with as many different ideas as they can in a certain time (e.g. how to increase numbers of people cycling). Challenge them to think outside the square about random ideas that may spark other great ideas! After the time is up, get students to refine an idea, keeping the design principles they came up with earlier at the forefront.
- Prototype – develop a model/concept/drawing of what the game might look like and how it will work.
- Test – ask students to pitch their first designs with another group. The other group needs to give feedback using only “I like” or “I wonder” comments. Ask groups to swap over feedback roles. Ask each team to consider the feedback they received and make any changes.
- Preparation for the next lesson - explain to the groups that they will each have five minutes to test their game during the next lesson, so they need to plan accordingly. They also need to complete a safety action plan for their game, this points out what could go wrong and what is in place to ensure people are safe.

Notes for teachers

- To help guide students use the design thinking process you could use this slideshow to help prompt them through the different stages. Design Thinking Process - <http://www.slideshare.net/secret/hXywrXCQaHOLo>
- The Safety Action Plans can be found at this link [Safety Action Plan](#). You may want to modify this for your students to keep it more user-friendly.
- This lesson is designed so that students begin to understand design thinking. The outcome of what they design is less important than this understanding. Emphasise each stage of the process so students will require less support when they use this process in subsequent lessons.

Resources Pens and paper, sticky notes, Safety Action Plan, design thinking slideshow, screen

Lesson 9 - Play the games

The big ideas and key skills

- Present/play games/activities
- Giving and receiving feedback

The activities

- Present and play the game or physical activity. Depending on your numbers, allow each group enough time to present their game and for it to be played. At the completion of each game, allow a short period of feedback from the participants using “I like” and “I wonder” comments.
- To wrap up the lesson, ask questions around what the students would change now that they have tested their game/activity. Ask them what their next steps would be.

Notes for teachers

- This lesson allows the students to see their ideas become reality while getting them used to giving and receiving feedback. It is another chance to reinforce the process of design thinking.

Resources - Equipment required by students for their game

Lesson 10-14 Game/Physical Activity or social action creation

The big ideas and key skills

- Relating to others
- Collaboration within a team
- Gaining a deeper understanding of the issues related to cycling on the road
- Game, activity or social action creation/prototyping
- Presentation of game

The activities

- In groups of three or four, students discuss and note down on individual hexagons all the important factors that make a successful team. Ask them to think about how their team for the previous activity worked to draw on personal experiences. Once each group has been able to come up with at least 10 -15 factors they place the hexagons together where natural connections occur e.g. leadership might connect with communication, and so it would go on.
- Collaborative team agreement. Groups create an agreement for how they will work together on the upcoming task. Get it reviewed by another group using “I like” and “I wonder” comments. Agreement is signed by the group. This agreement needs to be visible whenever the team is working together over the next five lessons.
- Share the SOLO assessment rubric at the end of this document with the students so they can get an understanding of what they are required to do.
- Design thinking process - ***“how might we create a game, physical activity or social action that helps participants to use bikes as a transport mode and increases their skill, confidence and safety?”***
- Empathy – ask the students to draw on all the knowledge they have gained from personal experience and information covered in this unit to try to unpack how to answer the question. Remind them not try to solve it at this point. They should be trying to gather as much information on the issue at this stage. Remind students to look back at the hauora activity, the MOT 25 Years of NZ Travel Study, the Cycling Road Code as well as thinking about all the

physical activities they took part in. The students should come up with some key points about the issue and why it is an issue.

- Define - ask the students to refine all their ideas about the issue into key themes. These themes or points will form the design principles that will shape what the group creates.
- Ideate - with the design principles in mind, get the students to ideate on ways to solve the “how might we” question. Remind them to think outside the square. From here, teams need to decide on what ideas they are going to go with.
- Prototype/Testing - teams need to make a prototype. This starts the prototype – testing cycle that will continue right up until they present in the final lesson. Encourage students to test their projects out on a variety of different users and to use feedback to make changes.
- Presentation – explain to the teams that in lesson 15 they will be required to give a three-minute presentation to the whole class and anyone else who they might like to invite. Teams need to give some time to working on their presentation.

Notes for teachers

- Over the next five lessons, students again go through the design thinking process to create a game, activity or social action that will have a positive impact on the future of cycling within their local area. Students should choose groups of three to four. They will be guided through the first three stages of design thinking before managing themselves as they prototype and test, leading up to a final presentation in lesson 15.
- At the beginning of this phase, the importance of positive teamwork needs to be highlighted because each student's success relies heavily on how well their team works together. The collaborative team agreement that is created would make a great document for students to reflect on, at the conclusion of this task in terms of next steps in relating to others.
- The first three steps of the design thinking process may need to be teacher-led, depending on how well the students understand the process. After that, students should have the time and space to get on with the task, allowing the teacher to give feedback on managing self. It may be useful to use the slideshow that was used earlier in the unit and adapt the how might we question to - ***“how might we create a game, physical activity or social action that helps participants to use bikes as a transport mode and increases their skill, confidence and safety?”***

Resources Depends on student need. Paper [hexagon template](#) click on this link.

Lesson 15 - The presentation

The activities

- Each team has three minutes to present their game, activity or social action. They can choose the means of presentation that best suits them. For example, they may wish to play a movie they have created, use a PowerPoint presentation or any other medium that will best convey their concept.
- Assessment of this would be using the solo rubric and could be teacher-assessed, peer-assessed, self-assessed or a combination of these.
- Challenge students to make these games, activities or social actions into a reality by entering competitions, publishing within school or sharing on social media.

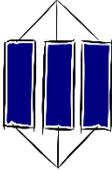
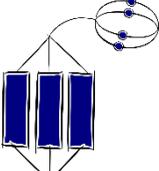
Notes for teachers

- At the conclusion of this unit, professional judgment should be used when deciding what to ask students to reflect on.

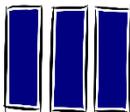
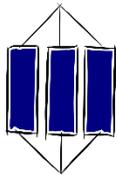
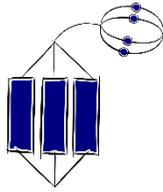
Resources Depend on student needs e.g. screen

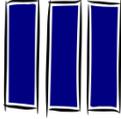
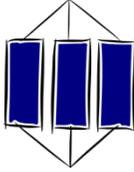
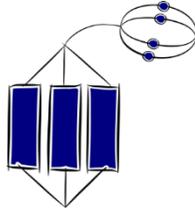
Assessment

Cycling: Knowing how to ride safely on the road.

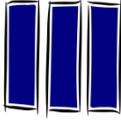
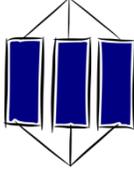
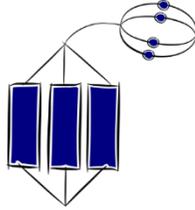
	 Prestructural	 Unistructural	 Multi-structural	 Relational	 Extended abstract
	no idea	one idea	several ideas	linked ideas	extended ideas
Functional knowledge: Knowing how to ride a bike safely on the road	I need help to ride my bike Still learning how to ride a bike and gain the confidence to ride a bike on the road	I can ride a bike safely on the road if I am prompted or directed I can ride a bike on the road but need help from others as to what I should be doing to make sure myself and others are safe	I use several strategies to ride a bike safely on the road but I am not sure when and or why to use them <i>(trial and error – aware of strategies but not sure why or when to use them so makes mistakes)</i> I can ride a bike on the road and know some of the rules such as what you do at a stop sign and that I am not allowed to ride on the footpath, but haven't really thought too much about why these rules are in place.	I use several strategies to ride a bike safely on the road and I know when and why to use them <i>(strategic or purposeful use of strategies – knows why and when)</i> I can ride a bike on the road safely knowing the rules and why they are in place. I use such strategies as hand signals to allow me to share the road safely with others.	I use several strategies to ride a bike safely on the road and I know when and why to use them I can teach others to ride a bike safely on the road I act as a role model for others to help them ride a bike safely on the road I seek feedback on how to improve how I can ride a bike safely on the road

Create: Game, Physical Activity or Social Action to enhance cycling in our local area.

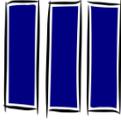
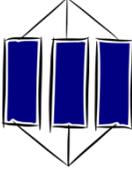
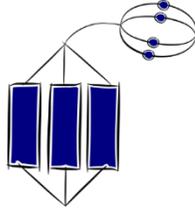
	 Prestructural	 Unistructural	 Multi-structural	 Relational	 Extended abstract
	no idea	one idea	several ideas	linked idea	extended ideas
Functional knowledge:	<p>I need help to create a game, physical activity or social action to enhance cycling in our local area</p>	<p>I can create a game, physical activity or social action to enhance cycling in our local area if I am prompted or directed</p>	<p>I use several strategies within my game, physical activity or social action that I create to enhance cycling in our local area, but I am not sure when and or why to use them. (trial and error – aware of strategies but not sure why or when to use them so makes mistakes)</p>	<p>I use several strategies within my game, physical activity or social action that I create to enhance cycling in our local area and I know when and why to use them. (strategic or purposeful use of strategies – knows why and when)</p>	<p>I use several strategies within my game, physical activity or social action that I create to enhance cycling in our local area and I know when and why to use them</p> <p>I can teach others within my game, physical activity or social action that I create to enhance cycling in our local area</p> <p>I act as a role model for others to help them within my game, physical activity or social action that I create to enhance cycling in our local area</p> <p>I seek feedback on how to improve game, physical activity or social action on that I created to enhance cycling in our local area.</p>
	<p>I am not able to create a game, physical activity or social action that will enhance cycling in the local area</p>	<p>I am able to create a game, physical activity or social action that will enhance cycling in the local area that focuses on one area e.g. creates a physical activity where people learn how and when to use hand signals for cycling</p>	<p>I am able to create a game, physical activity or social action that will enhance cycling in the local area that introduces more than one strategy with the creation e.g. creates a social action that uses Facebook to promote safe helmet use and hold a free sausage sizzle for all those who biked to school</p>	<p>I am able to create a game, physical activity or social action that will enhance cycling in the local area that uses more than one strategy within the creation and links these together. E.g. creates an online game that has several different strategies being used throughout the game that reinforce cycling safely</p>	<p>I am able to create a game, physical activity or social action that will enhance cycling in the local area that uses more than one strategy within the creation and links these together but has created it so that its influence within the local area will be on going</p> <p>I show how I have used feedback to improve my creation</p>

<p>Hellison’s Model of Social Responsibility: Level Five</p>					
<p>I can demonstrate CARING for others in group activities and discussion.</p> <ul style="list-style-type: none"> • Extend sense of responsibility to include others • Cooperate with others • Give support to others • Show concern for others • Help others 	<p>I need help to know what [CARING] looks like</p> <p>They should look out for themselves – I am not going to look after them - be responsible for them.</p>	<p>I can [CARE for others] if I am reminded.</p> <p>I can care for others if I am directed/reminded.</p>	<p>I use several strategies to [CARE for others] but I am not sure when and or why to use them.</p> <p><i>(trial and error – aware of strategies but not sure why or when to use them so makes mistakes)</i></p> <p><i>I can give it a go but I sometimes forget and rely on others</i></p>	<p>I use several strategies to [CARE for others] and I know when and why to use them.</p> <p><i>(strategic or purposeful use of strategies – knows why and when).</i></p> <p><i>I am on to it – I keep an eye out for others - explain why/justify</i></p>	<p>AND ...</p> <p>I can encourage others to [CARE for others]</p> <p>I act as a role model for others to help them [CARE for others]</p> <p>I extend this to other contexts outside of school – e.g. has become part of who I am - habitual – I become irritated if something prevents me from acting in this way e.g. checking my cell phone</p>
<p>Effective Strategies</p> <p><i>[insert strategies suggested by students and teachers]</i></p>	<p><i>Show them examples.</i></p> <p><i>Opportunity to practise.</i></p>	<p><i>Clear instructions (step-by-step).</i></p> <p><i>Prompting.</i></p> <p><i>Situational teaching.</i></p> <p>[External feedback]</p>	<p><i>Revisit, recap & remind!</i></p> <p><i>Debrief</i></p> <p><i>Role play</i></p> <p>[Internal feedback start]</p>	<p><i>Repeated opportunities to practise</i></p> <p>[At level]</p>	<p>[Beyond level]</p>

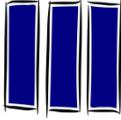
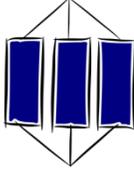
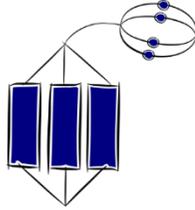
demonstrate: social responsibility: self-direction [Y10]

<p>Hellison’s Model of Social Responsibility: Level Four</p>					
<p>I can demonstrate SELF DIRECTION in group activities and discussion.</p> <p>Act without teacher supervision</p> <ul style="list-style-type: none"> • Show respect • Participate fully • Identify my own needs 	<p>I need help to know what [SELF DIRECTION] looks like</p> <p>I want/need others to look out for me/supervise what I do and say.</p>	<p>I can [SELF DIRECT] if I am reminded.</p> <p>I can make my own decisions/take responsibility for my own actions if I am reminded.</p>	<p>I use several strategies to [SELF DIRECT] in group activities and or discussion with others but I am not sure when and or why to use them.</p> <p><i>(trial and error – aware of strategies but not sure why or when to use them so makes mistakes)</i></p> <p><i>I can give it a go but I sometimes forget and rely on other</i></p>	<p>I use several strategies to [SELF DIRECT] in group activities and or discussion with others and I know when and why to use them.</p> <p><i>(strategic or purposeful use of strategies – knows why and when).</i></p> <p><i>I am on to it – I keep an eye on my own actions – take responsibility for my own actions - it does not matter if the teacher is supervising or not - explain why/justify</i></p>	<p>AND ...</p> <p>I can encourage others to [SELF DIRECT] in group activities and or discussion with others.</p> <p>I act as a role model for others to help them [SELF DIRECT] in group activities and or discussion with others</p> <p>I extend this to others outside – e.g. has become part of who I am - habitual – I become irritated if something prevents me from acting in this way e.g. checking my cell phone</p>
<p>Effective Strategies</p> <p><i>[insert strategies suggested by students and teachers]</i></p>	<p><i>Show them examples.</i></p> <p><i>Opportunity to practise.</i></p>	<p><i>Clear instructions (step-by-step).</i></p> <p><i>Prompting.</i></p> <p><i>Situational teaching.</i></p> <p>[External feedback]</p>	<p><i>Revisit, recap & remind!</i></p> <p><i>Debrief</i></p> <p><i>Role play</i></p> <p>[Internal feedback start]</p>	<p><i>Repeated opportunities to practise</i></p> <p>[At level]</p>	<p>[Beyond level]</p>

Demonstrate: social responsibility: participation [Y10]

<p>Hellison’s Model of Social Responsibility: Level Three</p>					
<p>I can PARTICIPATE in group activities and discussion under teacher supervision</p> <ul style="list-style-type: none"> • Takes part/join in • Contribute in some way to what is going on • Physically active • Accept challenges • Reach for personal best <p>Even if you don’t feel like joining in</p>	<p>I need help to know what [PARTICIPATION] looks like</p> <p>I don’t want to join in</p>	<p>I can [PARTICIPATE] in group activities and or discussion with others if I am prompted or directed.</p> <p>I can take part if I am told to</p>	<p>I use several strategies to [PARTICIPATE] in group activities and or discussion with others but I am not sure when and or why to use them.</p> <p><i>(trial and error – aware of strategies but not sure why or when to use them so makes mistakes)</i></p> <p><i>I can give it a go but doesn’t always work</i></p>	<p>I use several strategies to [PARTICIPATE] in group activities and or discussion with others and I know when and why to use them.</p> <p><i>(strategic or purposeful use of strategies – knows why and when).</i></p> <p><i>I am on to it – explain why/justify</i></p>	<p>AND ...</p> <p>I can teach others to [PARTICIPATE] in group activities and or discussion with others.</p> <p>I act as a role model for others to help them [PARTICIPATE] in group activities and or discussion with others</p> <p>I extend this to others outside – e.g. has become part of who I am - habitual – I become irritated if something prevents me from acting in this way e.g. checking my cell phone</p>
<p>Effective Strategies</p> <p><i>[insert strategies suggested by students and teachers]</i></p>	<p><i>Show them examples.</i></p> <p><i>Opportunity to practise.</i></p>	<p><i>Clear instructions (step-by-step).</i></p> <p><i>Prompting.</i></p> <p><i>Situational teaching.</i></p> <p>[External feedback]</p>	<p><i>Revisit, recap & remind!</i></p> <p><i>Debrief</i></p> <p><i>Role play</i></p> <p>[Internal feedback start]</p>	<p><i>Repeated opportunities to practise</i></p> <p>[At level]</p>	<p>[Beyond level]</p>

Demonstrate: social responsibility: respect [Y10]

<p>Hellison's Model of Social Responsibility: Level Two</p>					
<p>I can RESPECT rights and feelings of others</p> <ul style="list-style-type: none"> Show self-control Does not disrupt learning others 	<p>I need help to know what [RESPECT] looks like</p> <p>I don't know what your problem is</p> <p>e.g.</p> <p>Unmotivated</p> <p>Interruptive</p> <p>Make excuses</p> <p>Blames others</p> <p>Intimidates others</p> <p>'Put's down' others</p>	<p>I can demonstrate [RESPECT] when with others if I am prompted or directed.</p> <p>I can do it if I am told to</p>	<p>I use several strategies to demonstrate [RESPECT] when with others but I am not sure when and or why to use them.</p> <p><i>(trial and error – aware of strategies but not sure why or when to use them so makes mistakes)</i></p> <p><i>I can give it a go but doesn't always work</i></p>	<p>I use several strategies to demonstrate [RESPECT] when with others] and I know when and why to use them.</p> <p><i>(strategic or purposeful use of strategies – knows why and when).</i></p> <p><i>I am on to it – explain why/justify</i></p>	<p>AND ...</p> <p>I can teach others to [RESPECT] when with others.</p> <p>I act as a role model for others to help them [RESPECT] when with others</p> <p>I extend this to others outside – habitual – irritated if something prevents them from doing e.g. cell phone</p>
<p>Effective Strategies</p> <p><i>[insert strategies suggested by students and teachers]</i></p>	<p><i>Show them examples.</i></p> <p><i>Opportunity to practise.</i></p>	<p><i>Clear instructions (step-by-step).</i></p> <p><i>Prompting.</i></p> <p><i>Situational teaching.</i></p> <p>[External feedback]</p>	<p><i>Revisit, recap & remind!</i></p> <p><i>Debrief</i></p> <p><i>Role play</i></p> <p>[Internal feedback start]</p>	<p><i>Repeated opportunities to practise</i></p> <p>[At level]</p>	<p>[Beyond level]</p>

HookED SOLO DESCRIBE ++ Map

