

Lesson 8: Planning to avoid hazards

Bikes are for everyone!

Anyone can ride a bike. However, some students may require additional assistance in the form of modified equipment and differentiated teaching. Suggestions for activity differentiation are provided throughout the lesson plans. Some students may also benefit from learning support aids such as social stories and other resources. If you would like further information on options for equipment modifications, adaptive bicycles and assistive technology, and learning support aids to assist with the delivery of Bike Ed, please email bikeed@transport.vic.gov.au.



SUGGESTED STAGE

While this Unit is designed for Years 7 and 8 (age range 12-15 years), you may choose to use these lessons for a different age range, depending on the development, maturity and existing bike riding experience level of your students.



SUGGESTED DURATION

This is the eighth of nine lessons for Unit 4 – Riding independently.
Suggested lesson duration: 45 minutes.



LEARNING INTENTIONS

- For students to use a variety of technologies and other information (with teacher oversight) to plan several routes for lesson 9, identifying and minimising the hazards and planning alternatives.



SUCCESS CRITERIA

- Map several alternative safe routes using technologies and other information (such as local knowledge).
- Identify and minimise hazards through planning on the routes.
- Choose the safest route for the group ride, justifying the reason.
- Retell the planned route with others.



EQUIPMENT

Workbook, worksheets, video projector, maps, computers.
Optional riding activity: bikes and helmets.





CURRICULUM LINKS

The Bike Ed program is designed to support all students by emphasizing the importance of safety and promoting independent travel skills. The Bike Ed program caters for all students and recognizes the need to teach safety and independent travel for all. Acknowledging the diverse needs of learners, we are committed to providing tailored assessment materials for students working at levels below the Foundation stage (A-D curriculum). For more information please email bikeed@transport.vic.gov.au.

CONTENT DESCRIPTORS (Geography)

VC2HG8S02 collect, organise and process information and data from primary and secondary sources, including fieldwork, and using geospatial technologies and digital tools as appropriate.

VC2HG8S03 represent and describe information and data using a range of formats, including maps constructed with geospatial technologies.

(HPE)

VC2HP8M01 refine and transfer movement skills in a variety of movement situations, including indoor, outdoor and aquatic settings.

VC2HP8M02 design and demonstrate how movement strategies can be manipulated to improve movement outcomes.

VC2HP8M03 demonstrate and explain how movement concepts related to effort, space, time, objects and people can be manipulated to improve movement outcomes.

VC2HP8M04 adapt and perform movement sequences in a variety of contexts, demonstrating how the movement elements of time, effort, space, people and objects can enhance performance.

ACHIEVEMENT STANDARD (EXTRACT) (Geography)

By the end of Level 8, students:

- collect, organise, process and represent information and data from primary and secondary sources using geospatial technologies.

(HPE)

By the end of Level 8, students:

- apply and transfer movement skills and movement concepts across a range of situations. They implement and evaluate the effectiveness of movement strategies on movement outcomes. They propose and evaluate strategies designed to promote personal health and wellbeing outcomes.



LEVEL 7 – 8 RUBRIC: BIKE ED

By the end of Level 6	Progressing towards Level 8	By the end of Level 8
Students can identify safety issues in their own and others' bikes, clothing, and equipment, and suggest practical solutions to improve safety.	Students can undertake some of the basics of bike maintenance: <ul style="list-style-type: none"> · change a flat tyre · check tyre pressure · adjust seat height to fit individual · clean and oil the chain · fix a punctured tube 	Students can undertake all of the basics of bike maintenance: <ul style="list-style-type: none"> · change a flat tyre · check tyre pressure · adjust seat height to fit individual · clean and oil the chain · fix a punctured tube
Students demonstrate successful communication to other riders whilst riding outside of the school (head scan, head checks, hand signals, voice commands).	Students demonstrate successful communication to other riders whilst riding outside of the school (head scan, head checks, hand signals, voice commands) and are beginning to take the lead or serve as role models for others.	Students demonstrate and can lead successful communication to other riders whilst riding outside of the school (head scan, head checks, hand signals, voice commands).

Continued overleaf.



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LEVEL 7 – 8 RUBRIC: BIKE ED (Continued)

By the end of Level 6	Progressing towards Level 8	By the end of Level 8
Students obey all road safety rules whilst riding outside the school (Keep to the left side of the road, leave at least 1 metre space from the parked cars, give way to the right, obeys all traffic signals and signs).	Students obey all road safety rules whilst riding outside the school (Keep to the left side of the road, leave at least 1 metre space from the parked cars, give way to the right, obeys all traffic signals and signs) and are beginning to take the lead or serve as role models for others.	Students lead others in adherence to all road safety rules, instructions and norms whilst riding outside the school (Keep to the left side of the road, leave at least 1 metre space from the parked cars, give way to the right, obeys all traffic signals and signs).
Students obey all road safety instructions and norms whilst riding outside the school (follows all instructions from the teacher ride in single file and does not overtake unless instructed, maintains safe space between riders of two bike lengths).	Students obey all road safety instructions and norms whilst riding outside the school (follows all instructions from the teacher ride in single file and does not overtake unless instructed, maintains safe space between riders of two bike lengths) and serve as role models for others.	Students lead others in obeying all road safety instructions and norms whilst riding outside the school (follows all instructions from the teacher ride in single file and does not overtake unless instructed, maintains safe space between riders of two bike lengths).
Students can identify and mitigate hazards in a community setting with assistance. Students can plan a safe travel route using a range of technologies and information (with teacher oversight)	Students can plan a safe travel route using various geospatial technologies and information (with teacher oversight) based on current conditions, hazards and the environment.	Students can plan several safe travel routes alternatives using various geospatial technologies and information (with teacher oversight), choosing the best and safest route based on current conditions, hazards and the environment.

Tuning in activity. Observations from on-road ride.

Approx. 5 minutes

Resource Requirements

- Workbook and pen.

Safety

- N/A.

Activities & Differentiation

Brief recap of the ride that students did previously. Students, in groups of 2-3, write down at least five different hazards that they saw whilst they were on the recent community ride.

- For each hazard, describe how it is hazardous and how you negotiated it safely.

Compare this list with the group next to you. Pick one of the items from your list and share it with the class, including how you safely negotiated it.

Teaching Points

What types of hazards were there?

- Cars, intersections, parked cars, pedestrians, slippery surfaces, loose stones etc.

Key Questions

- Where are you looking to see the hazards (i.e., always scanning around the scene)?
- Which hazards do you think are the most common?
- How would you avoid the hazards?



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Activity 1. Virtual ride.

Approx. 10 minutes

Resource Requirements

- Computers for students.

Activities & Differentiation

Distribute iPads or computers for each student or one between two.

- Using Google Street View, students should do a virtual bike ride through the route.
- Students should rank the key intersections and locations by difficulty, writing this down on the maps.
- After ranking, talk through the most difficult intersection(s) with the class. Show how we will be negotiating them and providing strategies on negotiating similar locations.

Modification

- If no IT is available, the activity can be teacher led using a screen at the front of the classroom.

Safety

- N/A.

Teaching Points

Teachers should focus on map reading skills in addition to gaining familiarity with the route and riding from a bike riders' perspective.

Key Questions

- Why did you rank this as the most difficult location?
- Which was the easiest place to ride? Why?

Progression

If time allows challenge students to find a better route to ride.

The criteria should be:

- Easy to ride (i.e., not too hilly)
- Safe to ride (safe roads, safe intersections, identify potential hazards)
- The right length to fit in class (approx. 60 minutes)

Plot the ride on a fresh map. Provide a justification- for the ride that addresses the key criteria.

Activity 2. Road hazards story worksheet.

Approx. 15 minutes

Resource Requirements

- Hazard perception worksheets, video projector.

Activities & Differentiation

Hand out the worksheet, where students will need to identify common hazards in a road scene.

- Students will take these hazards and create a story of a hypothetical ride where they encounter these hazards.

Safety

- N/A.

Teaching Points

One of the best ways to react to hazards is if you've already imagined them. This means that you can already have a plan and then simply enact it when you encounter the hazard in real life.

Key Questions

- How do we know what the hazards are?
 - Does it have the potential to affect our riding path? Such as a car crossing the bike lane, or dog, or a slippery bit of road?
- How should we be reacting to them?
 - Don't make sudden movements, like swerving, as you may put yourself in the way of other road users



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- behind you.
- Slow down in a controlled manner, and ride at a speed where you can easily deal with the hazard.

Activity 3. Route planning.

Approx. 10 minutes

Resource Requirements

- Printed maps, and/or digital devices and mapping apps such as Google Maps, RideWithGPS, Strava, etc.

Safety

- N/A.

Activities & Differentiation

In groups of 2-4, students will:

- Choose a starting point and destination – eg riding to school from home, or from school to a recreational or entertainment activity.
- Plan the safest riding route, considering hazards, intersections, and using bike infrastructure (bike shared paths, bike lanes, priority bike routes) where possible.
- Plot the ride on Google Maps (or other mapping tool of their choosing)

Present the planned route to the class and provide a virtual ride-through using Google Street View. Discuss the main intersections they will be passing through, and the key hazards they will find at these key locations, and how they plan to negotiate them.

Teaching Points

Key understandings are:

- Becoming more familiar and comfortable with using route-planning tools, maps and apps.
- Making choices to determine the safest riding route, considering hazards, intersections, and using bike infrastructure (bike shared paths, bike lanes, priority bike routes) where possible.
- Identifying hazards and potential hazards in route planning.
- Appropriate reactions to hazards.

Key Questions

- What tools can we use to plan a safer route?
- What are the best ways to avoid a hazard?
- Do you know these roads and intersections?
- Can you think of any hazards when you have walked or driven down these roads before?

Optional. Follow the leader.

Approx. 5 minutes

Resource Requirements

- Bicycles and helmets.

Safety

- Students must maintain at least two bike lengths distance to other bike riders.
- Ensure full safety checks are completed before any bike riding activity.

Activities & Differentiation

If you wish to (and can) get the students out of the classroom and onto their bikes, then do some practice following the teacher on bikes. This is what they will be doing next class on their outside ride, so this is a good skill to practice.

Teaching Points

Teacher or assistant should lead the ride since moderating the speed will be important.

Signaling

- Communication is very important so that group



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Practice ride for next class

Ask students about what is important when you are riding with other people?

- Keeping space between yourself and the bikes around.
- Keep at least two bike lengths between yourself and the bike in front.
- Remember signaling and head-checks.

Follow the leader

Set up a large square or oval circuit for students to ride around.

Students ride in a single file around the course.

- Students must be careful to maintain the two bicycle lengths between them and the bike in front.

An alternative is for the teacher to lead a ride around the school ground or surrounds. This is preparation for the out of school ride next class.

- Include hand signals and voice calls that need to be passed back along the group – such as hand signals for turning, and calls for “slowing”, “stopping”, or pointing out obstacles (pot-holes, posts, speed humps, sticks, rocks, dogs, potential car doors, etc).

Modifications

- Students who are not yet able to balance and pedal can still participate in this activity using a balance bike (refer to additional resources).

For students who are struggling or nervous about taking a hand off the handlebars to signal, suggest that they follow this process. Once they can ride for at least 10 metres completing the task, they can move to the next step.

1. Start by simply loosening the grip with the signaling hand, to feel how the balance needs to shift.
 2. Take the hand off the grip completely but hover it approx. 5-10cm above the grip.
 3. Take the hand off the grip and place it on the knee on the same side.
 4. Take the hand off and move it very slowly outwards away from the body.
 5. Progress to a full signal.
- *Note that the first 3 steps have the hand in line with the body, so that the balance point is not disrupted by moving the arm sideways. Explain this to students so they understand the importance of moving the arm out slowly, until they are very comfortable with the process.*

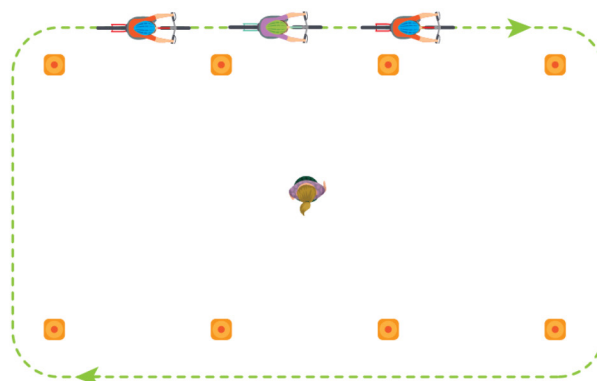
members and other road users (cars etc.) are not going to be surprised by our movements.

- Use both voice and arm signals.

Head checks

- The head check should be smooth and brief, just long enough to see what's around.
- The tendency is for riders to drift in the direction they are doing the head-check. Make sure that the riders keep riding straight.
- To avoid drifting while performing a head check over the right shoulder, lock the right elbow (straight arm), and bend the left. This locks the handlebars in position and prevents them turning outwards when you turn your head. (for the left side head check, lock the left elbow).
- It is easier to turn your head when you tuck your chin slightly towards your armpit first, especially for those with limited range of motion.

Activity Setup



Key Questions

- Why do we need to keep space between the bikes?
 - To help us prevent any collisions.
 - Safe attitude!
- Why do we signal?
 - So that other people can know what we are going to do, so they can avoid us.
 - Safe!
- Why do we do a head-check?
 - Because we want to make sure that nobody is coming when we turn or change lanes.
 - We can't see behind us, so we need to do a quick look so that we know what's coming.
 - Safe!



Reflection & closure.

Approx. 5 minutes

Activities & Differentiation

Reflect on route mapping and hazard identification activities.

Thumbs up/down/sideways: Are you confident in knowing how to use technology to plan and map a safe route?

Key Questions

- What are the most common hazards, and how do we best negotiate them?
- What are the most important things to look for when selecting a route to ride?
- Why should we look to check our route online before we go for a ride?
- Are you confident negotiating the hazards we will be seeing on the class ride?

