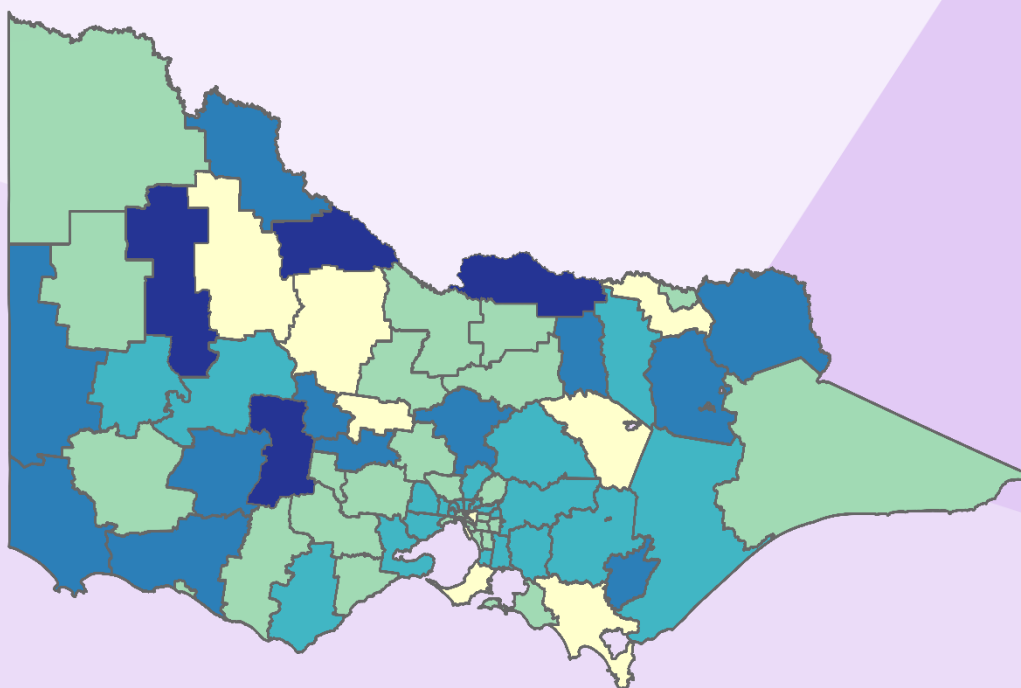


Empowering change through data: exploring human wellbeing in Victoria with geospatial technologies

Geography Level 9-10: Teacher guide

Geography Teachers' Association of Victoria

March 2026



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Published March 2026

Suggested citation

Geography Teachers' Association of Victoria (2026) Empowering change through data: exploring human wellbeing in Victoria with geospatial technologies: Level 9-10 Geography: **Teacher guide**. Women's Health Victoria, Melbourne. - (*Victorian Women's Health Atlas Education Resource*)

Use in conjunction with

Empowering change through data: exploring human wellbeing in Victoria with geospatial technologies: Level 9-10 Geography: **Student guide**.

The Geography Teachers' Association of Victoria (GTAV) is the peak body for Geography education in Victoria.

GTAV is an incorporated, not-for-profit, professional membership association supporting Geography teachers. Our mission is to achieve excellence in Geography education in Victoria through leadership and advocacy, building teacher capacity, providing student support, and developing curriculum resources.



gtav

Women's Health Victoria is a statewide, feminist, not-for-profit organisation leading the pursuit of gender equity in health.

All of our work contributes to gender-transformative health systems in Victoria. We deliver vital support services and empowering health information to the community. We share evidence and recommendations to challenge bias in the health system. We build capacity in the health sector to achieve equitable health outcomes.



Women's Health Vic

Women's Health Victoria acknowledges the support of the **Victorian Government.**



Summary

This enquiry-driven resource is aligned with the Victorian Curriculum 2.0 for Level 9-10 Geography.

Students will investigate local and statewide patterns of wellbeing, build spatial data skills, and develop a critical understanding of gendered health inequities.

Features:

- Five structured, teacher-facing lesson plans aligned with key curriculum content and skills
- Five accompanying student activity worksheets that scaffold data interpretation and analysis
- Student-led list of call to action activity suggestions encouraging changemaking and local application
- Seamless integration of the **Victorian Women's Health Atlas** with relevant geographical topics
- Use of both primary and secondary data sources, including opportunities for students to collect local data
- Explicit interconnections to community action, allowing students to apply their learning in real-world contexts

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Acknowledgement of Country

Women's Health Victoria (WHV) acknowledges the Traditional Owners of the land we work on, the Wurundjeri people of the Kulin Nation. We pay our respects to their Elders past and present and acknowledge their continued custodianship of these lands and waters. As a statewide organisation, we also acknowledge and pay our respects to the past and present Elders and Traditional Owners of the lands and waters across Victoria.

We recognise that sovereignty was never ceded and that we are the beneficiaries of stolen land and dispossession, which began over 230 years ago and continues today.



Our Commitment to Gender Diversity

Women's Health Victoria's focus is women (cis and trans inclusive) and gender diverse people. We address gendered health issues and are committed to supporting all people impacted by gender inequity who can benefit from our work. As a proud intersectional feminist organisation, Women's Health Victoria is working towards meaningful inclusivity, guided by and supporting people who identify as women, trans, intersex and gender diverse. We will seek and value feedback and be accountable to our partners and stakeholders from diverse communities.



Introduction

The bigger picture

This enquiry helps you understand how human wellbeing varies across Victoria and why some communities experience better health outcomes than others. By using the Victorian Women's Health Atlas, you'll explore real-world data about gender, place and health, building your skills in analysing patterns, interpreting data and drawing conclusions.

Over five lessons, you'll plan and carry out a geographical enquiry using both secondary (existing) and primary (fieldwork) data. Your final product will be a short report or presentation that explains your findings, supported by maps, graphs and evidence from your research. In the last stage, you'll create a call to action, a practical idea or message for how individuals or communities can promote greater equality and wellbeing in Victoria.

Lesson pacing is flexible

Some lessons may require additional time, depending on the student group.

Real-world sensitive content and adaptation

This resource includes real-world, potentially sensitive, health and wellbeing content (e.g. sexual violence, family violence, sexually transmitted infections). Students may come across these indicators while exploring, even if not their chosen focus area.

Ensure that students are briefed so they understand that sensitive topics may be encountered and discussed. Establish classroom guidelines to ensure students feel safe (i.e. know their options if they want to take time out, discuss any of the topics further, find further help or support, or disclose an experience of violence). Note that the Atlas includes details of support services where relevant.

Teachers may exercise discretion in excluding or swapping potentially sensitive content, eg: *Stalking, harassment and threatening behaviours*

Framing the enquiry

Lesson focus

Introduction to data tools and key wellbeing themes of **Women's Health Victoria**

Learning goals

Students explore datasets and form an enquiry question

Use in conjunction with

Student worksheet 1: Framing the enquiry

Time estimate

One to two 50-60 minute lessons

Victorian Curriculum 2.0 Links: Levels 9 and 10

Geographical Knowledge and Understanding > Geographies of Human Wellbeing	
<p>Reasons for and implications of spatial differences in human wellbeing at a local scale and regional scale in Australia and in a country in Asia (VC2HG10K16)</p>	<p>Relevant elaborations:</p> <ul style="list-style-type: none"> • examining the spatial pattern of human wellbeing by small areas, such as local government areas in a city or regional area in Australia, and discussing ways to explain it • reflecting on the consequences of changing the scale at which wellbeing is mapped in Australia • discussing the consequences of spatial differences in human wellbeing in Australia on, for example, health, education and income • investigating the influences of relative location and place on human wellbeing and explaining how possible causal factors (such as access to medical facilities and green space, income, education and government policies) can be identified through a controlled comparison of places
Geographical Skills > Geographical inquiry	
<p>Develop a range of questions for a geographical inquiry related to a phenomenon, issue or challenge (VC2HG10S01)</p>	<p>Relevant elaborations:</p> <ul style="list-style-type: none"> • developing a geographical question on a geographical phenomenon, issue or challenge studied, using one or more geographical concepts • developing and modifying questions to sharpen the focus of an investigation using concepts or scale of study, for example, 'How would you measure human wellbeing in the local area?' (local scale) • discussing the choice of scale for an investigation, such as at a local or regional scale
<p>Collect, process and compare information and data from primary and secondary sources, including fieldwork and secondary research materials, using geospatial technologies and digital tools as appropriate (VC2HG10S02)</p>	<p>Relevant elaboration:</p> <ul style="list-style-type: none"> • collecting quantitative and/or qualitative data and information from primary and/or secondary sources and evaluating its <ul style="list-style-type: none"> ○ relevance (e.g. 'Does the information reflect current thinking on sustainable food production?'), ○ reliability (e.g. 'Who is/are the author(s)? Does the author reference other experts or reports in the field of environmental management?') and ○ bias, such as information bias (e.g. presenting one side of an issue) or selection bias (e.g. presenting information on the positive aspects of foreign aid with cultural and social issues not considered)

Teacher notes

This lesson introduces the **Victorian Women's Health Atlas** as a source of local-scale wellbeing data. Previously, such data were hard to find in a student-friendly format, so **the Atlas** provides a time-saving resource for Year 9 and 10 Geography teachers.

A free online training module is available at [How to use the Atlas - Women's Health Victoria](#).

You may wish to complete this yourself; students can navigate **the Atlas** using only the instructions in the worksheet.

Explore **the Atlas** beforehand, as it contains sensitive data (e.g. sexual violence, family violence, sexually transmitted infections). Introduce these topics with care and sensitivity in class.

The worksheet is self-paced, but by the end of this lesson all students should:

- Use the **Victorian Women's Health Atlas** basic tools
- Formulate a research question for deeper investigation in subsequent lessons

The research table at the end of the worksheet restricts choices to indicators suitable for fieldwork surveys and to data that remain stable and are regularly updated.

Timing and lesson pacing advice

Lesson 1 may take longer than planned due to the time required for students to become familiar with the **Victorian Women's Health Atlas** interface and navigation tools.

- Depending on your group of learners you may choose to divide Lesson 1 into two separate sessions, particularly for classes with diverse levels of digital literacy or confidence with geospatial technologies
- The additional time allows students to explore the Atlas independently, test different indicators, and build confidence before moving on to data collection in Lesson 2.

Student differentiation

- **Less confident students** may focus on asthma rates (the worked example in later lessons), giving them both a research question and ready-made survey questions.
- **More confident students** should select a different **Atlas** indicator to broaden their enquiry skills.

Extension activity

Use Microsoft Excel to plot a scatter graph and test the correlation between two data sets from the worksheet (for example, percentage of population born in Australia versus total fertility rate).

Collecting data

Lesson focus

Designing and conducting a simple fieldwork or survey task

Learning goals

Students collect localised data in an ethical and purposeful way

Use in conjunction with

Student worksheet 2: Collecting data

Time estimate

Two 50-60 minute lessons to prepare and then time taken to complete the fieldwork. This will vary according to whether the teacher decides to collect data in the school setting or in the wider community.

Victorian Curriculum 2.0 Links: Levels 9 and 10

Geographical Knowledge and Understanding > Geographies of Human Wellbeing

Reasons for and implications of spatial differences in human wellbeing at a local scale and regional scale in Australia and in a country in Asia
(VC2HG10K16)

Relevant elaborations:

- examining the spatial pattern of human wellbeing by small areas, such as local government areas in a city or regional area in Australia, and discussing ways to explain it
- investigating the influences of relative location and place on human wellbeing and explaining how possible causal factors (such as access to medical facilities and green space, income, education and government policies) can be identified through a controlled comparison of places

Geographical Skills > Geographical Inquiry

Develop a range of questions for a geographical inquiry related to a phenomenon, issue or challenge
(VC2HG10S01)

Relevant elaboration:

- developing and modifying questions to sharpen the focus of an investigation using concepts or scale of study, for example 'How would you measure human wellbeing in the local area?' (local scale)

Collect, process and compare information and data from primary and secondary sources, including fieldwork and secondary research materials, using geospatial technologies and digital tools as appropriate
(VC2HG10S02)

Relevant elaborations:

- identifying primary research methods, including fieldwork, to collect original materials
- planning an investigation of a geographical phenomenon, issue or challenge being studied at a range of scales
- collecting quantitative and/or qualitative data and information from primary and/or secondary sources and evaluating its relevance, reliability and bias
- applying ethical research methods
- comparing findings from primary research with those from secondary research materials for relevance and reliability

Teacher notes

1. Survey design:

This lesson requires students to develop a survey based on an aspect of wellbeing in their local area. This should be focused on one aspect of wellbeing from the **Victorian Women's Health Atlas** table at the end of Student worksheet 1.

2. Ethical considerations:

Begin by discussing the ethics of collecting personal information. Refer to the guide at <https://geographyfieldwork.com/Ethical-Considerations-Geography-Fieldwork.htm> for prompts.

Use these headings as discussion starters:

1. Informed consent	5. Use of photography
2. Anonymity and confidentiality	6. Researcher safety
3. Researcher behaviour and neutrality	7. Environmental impacts
4. Researcher bias	8. Data collection, interpretation and storage

3. Question-writing guidance:

Remind students to avoid overly broad or open-ended questions, which yield unwieldy data. Use SurveyMonkey's guide on writing effective questions and, where appropriate, AI tools to support students who need extra help. Ensure questions align with the **Victorian Women's Health Atlas** methods of data collection and measurement, enabling meaningful comparisons between primary and secondary data.

It is also important to remind students that the privacy of respondents is to be respected at all times. An important consideration, therefore, is that individual students cannot be identified in the data used for the final report. For example, if there is only one female student who responds to the survey then the data used for females will obviously refer to this student. To avoid this, make sure that there is a large group of respondents and that small groups are identified as <5 or something similar.

4. Fieldwork support:

For teachers new to fieldwork, the **Geography Teachers' Association of Victoria** offers practical guides. Emphasise that fieldwork develops observation, questioning, interpretation and collaboration skills, as stated in the Victorian Curriculum rationale for Geography.

Teacher notes continued

5. Secondary data exploration:

The student worksheet gives a brief overview to allow students to pursue their own interests. Some may need additional structure. You might suggest they explore one of these topics:

Asthma

1. Why are female rates generally higher than male rates?
2. What interconnections exist between asthma and environmental factors (air quality, weather, pollen, thunderstorm asthma)?
3. How do asthma rates vary between urban and rural LGAs, and why?
4. Is the distribution of asthma similar to other chronic diseases mapped in the Atlas?

Food insecurity

1. Why are female percentages generally higher than male percentages?
2. How does food security vary between urban and rural LGAs, and why?
3. What interconnections exist between food insecurity and socioeconomic factors?
4. What local and population-level actions can be taken to overcome food insecurity.

Loneliness

1. Why are rates of loneliness generally higher in younger adults than older adults?
2. What are some of the drivers of loneliness, and how do they intersect?
3. What local and population-level actions can be taken to help overcome loneliness?
4. How can young people be better supported to maintain social inclusion and connection?

Multiculturalism

1. How do attitudes to multiculturalism vary between urban and rural LGAs?
2. Are there connections to the % of people born in Australia in each LGA?
3. Why might younger people in Victoria be more accepting of multiculturalism?
4. How can national and world events and media influence attitudes to multiculturalism?

Teacher notes continued

Participation/representation

1. Are women underrepresented in local government?
2. Has this pattern changed over time?
3. What impact does this gender imbalance have?
4. Does the trend persist at state and federal levels?

Smoking / vaping

1. Why are male percentages generally higher than female percentages?
2. Which age groups are more likely to be (a) smokers or (b) vapers, and why?
3. What are the long-term trends for (a) cigarette smoking and (b) vaping?
4. How safe is vaping?

Stalking, harassment and threatening behaviour

1. Why are female rates generally higher than male rates?
2. Are there connections to mental health conditions and perceptions of personal safety?
3. How do these rates correlate with maps of violence-affected areas?
4. Consider in-person and online settings for stalking and harassment

Unpaid domestic work

1. Why are female rates generally higher than male rates?
2. Has this pattern changed over time?
3. Consider a household survey on how tasks are divided by gender (e.g. paid work, cooking, shopping, cleaning, transport, child supervision, gardening, informal care, study).

6. Student differentiation:

Less confident students could focus on asthma, using the provided example and survey questions for their fieldwork.

7. Extension activity:

Conduct the survey with another school to compare spatial differences at a local scale and explore underlying causes.

Representing data

Lesson focus

Visualising data using graphs, tables, and/or geospatial tools

Learning goals

Students develop spatial and statistical literacy

Use in conjunction with

Student worksheet 3: Representing data

Time estimate

Two 50-60 minute lessons

Victorian Curriculum 2.0 Links: Levels 9 and 10

Geographical Knowledge and Understanding > Geographies of Human Wellbeing	
Reasons for and implications of spatial differences in human wellbeing at a local scale and regional scale in Australia and in a country in Asia (VC2HG10K16)	Relevant elaborations: <ul style="list-style-type: none">• examining the spatial pattern of human wellbeing by small areas, such as local government areas in a city or regional area in Australia, and discussing ways to explain it• investigating the influences of relative location and place on human wellbeing and explaining how possible causal factors (such as access to medical facilities and green space, income, education and government policies) can be identified through a controlled comparison of places
Geographical Skills > Geographical Inquiry	
Collect, process and compare information and data from primary and secondary sources, including fieldwork and secondary research materials, using geospatial technologies and digital tools as appropriate (VC2HG10S02)	Relevant elaborations: <ul style="list-style-type: none">• collecting quantitative and/or qualitative data and information from primary and/or secondary sources and evaluating its relevance, reliability and bias
Represent and analyse information and data using a range of formats, including graphs and maps constructed with geospatial technologies (VC2HG10S03)	Relevant elaborations: <ul style="list-style-type: none">• representing data and information in maps, graphs, diagrams, tables and other appropriate forms• creating a presentation of data and information using digital tools• creating visual representations of multi-variable geographical data using digital tools• representing multi-variable data using digital tools

Teacher notes

This lesson asks students to collate and process the data they gathered during their fieldwork. Collation often takes longer than anticipated, particularly if students need to combine each other's results. As students produce digital graphs and maps, ensure they save their work for the final report. Consider in advance how you would like them to present this report—your choice may depend on available class time and whether you plan to assess it.

Using ArcGIS StoryMaps:

- One engaging option is ArcGIS StoryMaps (<https://storymaps.arcgis.com/>). The site's Gallery demonstrates what students can create, and the built-in tools support the assembly of maps, text and multimedia into a coherent narrative.
- Bear in mind that StoryMaps can be time-intensive to learn and build—avoid attempting it within a single double period.
- For a step-by-step introduction, see Claire Andrewartha's article in *Interaction* Vol. 49 No. 4 (December 2021), "**A practical example: Teaching digital and spatial technology with ArcGIS StoryMaps,**" which includes both a worked example and a user guide.

Student differentiation

Less confident students might use only their own survey data (rather than pooling results) and produce one or two graphs instead of one per survey question.

Extension activity

Encourage students to use ArcGIS StoryMaps to assemble their final report, integrating maps, graphs and narrative into a polished digital presentation.



Interpreting & concluding

Lesson focus

Visualising data using graphs, tables, and/or geospatial tools

Learning goals

Students develop spatial and statistical literacy

Use in conjunction with

Student worksheet 4: Interpreting & concluding

Time estimate

One to two 50-60 minute lessons

Victorian Curriculum 2.0 Links: Levels 9 and 10

Geographical Knowledge and Understanding > Geographies of Human Wellbeing

Reasons for and implications of spatial differences in human wellbeing at a local scale and regional scale in Australia and in a country in Asia (VC2HG10K16)

Relevant elaborations:

- identifying and describing the economic, social, technological, political or environmental causes of variations in human wellbeing within India or another country compared to Australia
- examining the spatial pattern of human wellbeing by small areas, such as local government areas in a city or regional area in Australia, and discussing ways to explain it
- reflecting on the consequences of changing the scale at which wellbeing is mapped in Australia
- discussing the consequences of spatial differences in human wellbeing in Australia on, for example, health, education and income
- investigating the influences of relative location and place on human wellbeing and explaining how possible causal factors (such as access to medical facilities and green space, income, education and government policies) can be identified through a controlled comparison of places

Geographical Skills > Geographical Inquiry

Interpret and evaluate information and data to make generalisations and predictions, analyse patterns and trends, infer relationships and make forecasts (VC2HG10S04)

Relevant elaborations:

- using concept maps to explore relationships between data and information collected, represented and analysed
- developing generalisations and using them to make forecasts about the future of a selected geographical issue
- using map interpretation, map comparison, graphs, statistical methods and scatterplots to identify patterns, relationships and trends
- making generalisations about trends and/or developing generalisations
- explaining patterns or trends
- explaining relationships between causes and impacts of factors represented in data

Victorian Curriculum 2.0 Links: Levels 9 and 10

Geographical Skills > Concluding and Decision-making

Consider ethical values and perspectives to justify conclusions related to a phenomenon, issue or challenge using geographical concepts (VC2HG10S05)

Relevant elaborations:

- recognising the influence of their personal beliefs and attitudes on their responses to a selected geographical issue
- drawing conclusions about the impact of a geographical challenge on people, places and environments
- justifying conclusions by reflecting on perspectives identified and reasons for these perspectives
- examining the reasons given for making a specific decision and explaining how these reasons have or have not justified the conclusion reached

Geographical Skills > Communicating

Explain and evaluate proposed actions, using geographical knowledge and concepts and appropriate methods, and incorporating and acknowledging research findings (VC2HG10S07)

Relevant elaborations:

- completing a fieldwork report in relation to Geographies of human wellbeing, using geospatial technologies and media of choice
- creating a description of a geographical issue or challenge, using representations of data
- presenting conclusions using geospatial technologies and digital tools to create representations of data and research findings to explain causes and impacts of a geographical phenomenon, issue or challenge, and reinforcing understanding of the interconnections between people, places and environments
- developing an explanation of a geographical issue or challenge, applying tone appropriate to purpose and audience

Teacher notes

This lesson asks students to draw valid conclusions from the data they have interpreted. Encourage them to describe their findings from both primary data (the survey) and secondary data (for example, information gathered from the **Victorian Women's Health Atlas**).

Emphasise the importance of using data to support conclusions. While some students may stray from their original research question, this is acceptable provided they still draw valid conclusions from their collected data. Nevertheless, remind them that maintaining focus on their essential question generally leads to clearer outcomes.

The **Victorian Curriculum** specifies that students should reflect on their personal beliefs and attitudes as part of ethical research. You might frame this as a distinct task:

In what ways do you think your own beliefs and attitudes influenced your research?

Student differentiation

Less confident students could be given question prompts and sentence stems to support their final report. Possible prompts include:

- Why did you choose this aspect of wellbeing?
- What did you expect to discover?
- What was the most significant finding in your enquiry?
- How did your survey questions illuminate this finding?
- Which secondary data supported your conclusion?

Teacher notes continued

Discussion or extension activity – Interconnections with time of year

Encourage students to explore how patterns in wellbeing and health data may change across different times of the year. Discuss temporal interconnections between health issues and seasonal or social events.

For example:

- Increased alcohol use and gambling around events such as the *Melbourne Cup*, football finals, or end-of-year holidays.
- Heat-related illness during summer months.
- Mental health and loneliness during winter or festive seasons.
- Asthma and allergy flare-ups during spring due to pollen and air quality.

Students can use this discussion to consider how time, place and behaviour are interconnected, and how seasonal patterns can influence wellbeing outcomes in different communities.

Extension activity – Structuring the final report as a field report

You may wish to ask students to structure their final report according to the *VCE Geography Study Design* field report format (page 13 of the Study Design: <https://www.vcaa.vic.edu.au/curriculum/vce-curriculum/vce-study-designs/geography/geography>). Bear in mind that completing the full format can exceed a double period; you might instead adapt the structure.

The *Study Design* outlines these sections for a completed field report:

- Definition of topic
- Primary sources and data-collection techniques
- Secondary sources and data-collection techniques
- Presentation of processed data and information
- Analysis of processed data and information
- Analysis of processed data and information (continued)
- Evaluation
- Referencing

Call to action

Lesson focus

Visualising data using graphs, tables, and/or geospatial tools

Learning goals

Students explore ways to raise awareness or support local change

Use in conjunction with

Student worksheet 5: Call to action

Time estimate

This is an optional lesson, and time will differ according to the options taken by the teachers and students.

Victorian Curriculum 2.0 Links: Levels 9 and 10

Geographical Skills > Concluding and Decision-making	
Justify responses and develop and evaluate strategies using environmental, economic or social criteria, recommend a strategy and explain the predicted impacts (VC2HG10S06)	Relevant elaborations: <ul style="list-style-type: none">• evaluating the effectiveness of a strategy in relation to environmental, economic or social criteria• designing appropriate strategies to support the implementation of appropriate responses to a selected geographical issue• proposing individual action and supporting the proposal with reasons• proposing collective action• explaining the outcomes and impacts of a strategy
Geographical Skills > Communicating	
Explain and evaluate proposed actions, using geographical knowledge and concepts and appropriate methods, and incorporating and acknowledging research findings (VC2HG10S07)	Relevant elaborations: <ul style="list-style-type: none">• developing a response to a geographical issue or challenge, using geographical concepts and terms
Civics and Citizenship > Knowledge and Understanding > Citizenship, Diversity and Identity	
Individual and group participation in, and contribution to, civic life and global citizenship (VC2HC10K09)	Relevant elaborations: <ul style="list-style-type: none">• investigating individuals and communities, including religious and cultural groups, that actively participate in local and global civic life, and identifying gaps in civic contributions where new groups may need to form, including areas not yet supported online or in person

Victorian Curriculum 2.0 Links: Levels 9 and 10 continued

Civics and Citizenship > Skills > Participating in Civic Processes

Participate in and evaluate the methods and strategies of civic participation with regard to contemporary issues, from local to global (VC2HC10S07)

Relevant elaborations:

- examining ways in which people under the age of 18 can participate in responding to a contemporary political, legal or civic issue
- determining effective ways to participate in various issues, from school and local issues to global crises
- participating in civic processes in response to a contemporary global issue by creating an awareness-raising campaign at school
- engaging with democratic institutions about a contemporary issue through at least one method of participation, such as letter-writing, a petition and/or contributing to a campaign

Teacher notes

This optional lesson invites students to consider how they might respond to the issues they have investigated. Many pupils feel passionate about social justice and fairness, and the suggestions in the worksheet may inspire them to take meaningful action. It also provides an authentic way to address several skills from the **Civics and Citizenship** strand.

