Everyday Stories of Climate Change

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Educator Guide

Introduction

The following resources are aimed at enhancing students' understanding of the issues raised in *Everyday Stories of Climate Change.* The activities outlined below are suitable for Secondary education level. Educators should modify these resources as appropriate for their students. While most activities are more relevant to the Humanities or Geography subject areas, there are opportunities to study some of these topics in other subjects such as Science and English, allowing for a cross-curricular project. The table below shows how this comic can fit within various year levels based on the Australian Curriculum for Geography.

Year Level	Australian Geography Curriculum V9
5	Geography: the management of Australian environments, including managing severe weather events such as bushfires, floods, droughts or cyclones, and their consequences AC9HS5K05
6	Geography: the geographical diversity and location of places in the Asia region, and its location in relation to Australia AC9HS6K04
7	Water in the World: the causes and impacts of an atmospheric or hydrological hazard, and responses from communities and governments AC9HS5K05 Place and Liveability: factors that influence the decisions people make about where to live, including perceptions of the liveability of places and the influence of environmental quality AC9HG7K05
8	Landscapes and Landforms: Various descriptors
9	Biomes and Food Security: the distribution and characteristics of biomes as regions with distinctive climates, soils, vegetation and productivity AC9HG9K01
10	Environmental Change and Management: Various descriptors Geographies of Human Wellbeing: Various descriptors

Introductory activities on climate change

It is important to gauge the students' prior understanding of climate change and the science behind it. Before reading the comic, a lesson or two dedicated to this is suggested. An introductory discussion to discover students' prior knowledge about climate change is useful as some may be more aware of the social and political motivations behind climate change action e.g. from the popular media, but have little understanding of the actual scientific processes involved. To assist teachers in their own preparation, an explanation of climate change, its causes and consequences, along with some of the complexities in understanding and communicating it is available at: https://www.gtav.asn.au/resources/levels-7-8/everyday-stories-of-climate-change-new-graphic-novel

A key overarching question to pose to students is: "How do we know climate change exists?" This will spark interest in exploring the evidence. Students can then be introduced to both the natural greenhouse effect and the enhanced greenhouse effect and some of the key elements which are affecting climate change due to the latter. [At more senior levels such as Year 9 and 10, students could be asked what changes might not indicate climate change, but be merely part of natural climate variability. They could be asked to design simple methods of measuring climate change. They could also explore why some places might be more affected than others by climate change.] NASA provides an excellent summary of evidence, causes, effects and solutions relating to climate change on various scales (see: NASA: Climate Change and Global Warming).

Below are some useful links to introducing climate change with many activities to undertake.

- Starting with a science experiment may help to explain the enhanced greenhouse effect. There are many options which just require household materials.
  Here is an example: https://earthgenwa.org/news/climate-change-activity-for-earth-month/
- NASA resources provide many interactive videos and activities for students of different ages.
  - This site provides some of the key evidence to show climatic changes over time. It is suitable for all ages and would support an introductory discussion.
    https://climate.nasa.gov/interactives/climate-time-machine
  - This is a graph of the annual temperature changes since 1880
    https://svs.gsfc.nasa.gov/cgi-bin/details.cgi?aid=12133&button=related
  - This site is suitable for primary and middle school students
    https://climatekids.nasa.gov/
  - This site is suitable for upper secondary students
    https://climate.nasa.gov/

Geography activities after reading *Everyday Stories of Climate Change*:

Prior to reading *Everyday Stories of Climate Change*, explain to students that the comic explores how climate change is affecting the everyday lives of people around the world.

After reading the comic book students should find the location and investigate key geographic characteristics of each of the case studies:

- Khulna, Bangladesh
- Cape Town, South Africa
- Cochabamba, Bolivia
- Puerto Rico (territory of the United States)
- Barbuda (island in the country Antigua and Barbuda)

1) On a blank world outline map or on a digital map (e.g. Google Earth Pro), students should symbolize the location of each case study. Students could research various physical features nearby to each location and label these on their map such as rivers, seas, mountains, forests, deserts etc.
2) Students should create a table which identifies some of the major geographic characteristics of each place. A suggested table format is below. Students should try to gather as much information from the comic first, before doing further research. The CIA World Factbook could assist with some characteristics.

Geographic Characteristic	Khulna	Cape Town	Cochabamba	Puerto Rico	Barbuda
Latitude					
Main biome					
Landscape (e.g. coastal, inland, arid)					
Climate and rainfall					
Environmental impacts of climate change					
Population and average age					
Average income or GDP					

3) Identify the environmental similarities and differences between the five locations using your completed table from question 2.

4) Identify the socio-economic similarities and differences between the five locations using your completed table from question 2
5) Why is it so difficult for so many people in these five places to reduce climate change?
6) Group work activity: There are many opportunities for your class to work in groups and investigate one case study each from the comic book in more depth. Each group could research the various SHEEPT (social, historical, environmental, economic, political and technological) factors for their chosen case study to understand how climate change is affecting everyday life and how people are adapting to it. This could be a brainstorm or mind mapping activity performed after reading the comic or it could become a formal research presentation delivered to the class.
7) Further Research: Students could explore the UN Sustainability goals https://sdgs.un.org/goals and identify which goals relate to the needs of various case studies in the comic. In particular, they could study the targets and progress of 'Goal 10 Reduce inequality within and among countries' as a major social issue affecting all the case studies in the comic.

Cross-curricula subject area	Activity	AC Identifiers
English (Literacy)	**Literature Analysis** Within the English subject area, this comic can be explored at all year levels as a piece of literature. Students should be encouraged to discuss and share their own opinions about how the language and images in the comic position the readers to respond. Potential questions and activities to raise with students include: • What is the overall message communicated in this comic book? This could be a Think Pair Share activity. • What are some common themes explored in the story? Explore the themes and language used throughout the novel. Use https://www.gapminder.org/dollar-street to create a new case study for *Everyday Stories of Climate Change* with similar themes using one of the Dollar Street families. How strong is the point of view expressed by the various characters? Students could choose a character and write a creative piece of their life story which explores how they developed their viewpoint. Perhaps a prequel to one of the case studies in *Everyday Stories of Climate Change.* • How do the characters in each case study feel towards their government? Following a discussion about the messages portrayed in *Everyday Stories of Climate Change*, students could compile a media folio of texts and articles portraying the different perspectives and stances taken towards the issue of human-induced climate change by government organisations. • Research and discuss how the stories in *Everyday Stories of Climate Change* differ from those about climate change impacts in mainstream media? Students may consider the focus, themes or language used in articles and media.	**Level 7 English:** Engaging with and responding to literature AC9E7LE02, AC9E7LE03 Examining Literature AC9E7LE05, AC9E7LE06 Creating literature AC9E7LE07 Analysing, interpreting and evaluating AC9E7LY05 Interacting with Others AC9E7LY02
Numeracy	**Analysing Statistics through Graphical Representations** The Gapminder website www.gapminder.org provides many animated interactive graphs showing world data comparisons between countries over time. This is an opportunity for some graph interpretation and analysis activities. There is often an interactive timeline at the bottom of each graph and a play arrow for students to watch a visualization of the data. For each type of graph, students should identify trends, skewness, symmetry and changes in the data. In reporting their observations, they need to quantify their findings by searching for key data such as the most, the least, the mean, median and mode, the range and any outliers. • Bubble charts: This chart is labelled as “Bubbles” on the website. Select and compare the case study locations (except Puerto Rico) in regards to different variables. The default chart will show income vs life expectancy. This is a good place to start • Trend lines: This chart is labelled as “Trends” on the website. Select and compare the case study locations (except Puerto Rico) as well as Australia, Japan and a European country. Choose the variable labelled ‘babies per woman’.	**Level 7 Mathematics:** Statistics AC9M7ST01, AC9M7ST02 **Level 7 Science:** Science inquiry - Processing, modelling and analysing AC9S7I04, AC9S7I05 **Level 7 Digital Technologies:** Processes and production skills -

Cross-curricula subject area	Activity	AC Identifiers
	• Age structure: This chart is labelled as "Ages" on the website. Select and compare the case study locations (except Puerto Rico) as well as Australia, Japan and a European country. Study the shape of the age structure and try to estimate the average age of the population. • Area graphs: This chart is labelled as "Income" on the website. Compare the income and the percentage of the population living below the poverty line in each case study location (except Puerto Rico) • Bar Charts: This chart is labelled as "Ranks" on the website. Compare the rank of the case study locations (except Puerto Rico) as well as Australia, Japan and a European country according to the CO2 emissions (tonnes per person).	Acquiring, managing and analysing data AC9TDI8P02
Civics and Citizenship	**Mock UN Class Debate** Considering this is a contentious global issue, students could hold a mock UN class debate using the following prompt: *"Governments are not doing enough to adapt and protect their citizens from the impacts of climate change."* Choose a variety of countries from across the globe that include varying economic progress, levels of carbon dioxide emissions and face different threats from climate change. Students would research their country in relation to the national government's stance on climate change and form an argument to debate to the rest of the class. **Government Comparison** Compare the political structure and features of Australia's government to one of the case studies in the novel. Consider the rule of law, protection of human rights and freedoms, use of elections for decision making and the potential impact of corruption. • How might the different government structures impact on climate responses? • Compare each government's roles and responsibilities at a regional and global level in regards to the issue of climate change.	**Level 7 Civics and Citizenship skills:** Questioning and Research AC9HC7S02 Analysis, evaluation and interpretation AC9HC7S03 Communicating AC9HC7S05 **Level 10 Civics and Citizenship Knowledge:** Government and Democracy AC9HC10K01, AC9HC10K02

Science	**Scientific Research on climate change** The Intergovernmental Panel on Climate Change (IPCC) is the UN body for assessing the science related to climate Change. Their world view report was released in August 2021 issuing a 'Code red' for human inducing global heating. • Research how new evidence into climate change is leading to changes in scientific knowledge. • Students should study the IPCC diagram which outlines the level of impact to both ecosystems and human systems around the world (https://www.ipcc.ch/report/ar6/wg2/figures/summary-for-policymakers/figure-spm-2/) and formulate 10 key statistics by carefully analysing the data represented. • Read the UN News article about the IPCC 'Code Red' report https://news.un.org/en/story/2021/08/1097362 that argues the evidence is irrefutable and irreversible in some cases. Work in groups to create a mindmap which examines how the proposed scientific responses to the issue of climate change will impact society and explore the ethical, environmental, social and economic considerations. • Hold a class discussion: How are the IPCC reports informing global, national and community policies and regulations in regards to the effects of climate change?	**Level 7 Science:** Nature and development of science AC9S7H01, AC9S7H02 Use and influence of Science AC9S7H03, AC9S7H04 Evaluating and Communicating AC9S7I07, AC9S7I08

Health and wellbeing	**Climate Change and Wellbeing**
	• For each case study in *Everyday Stories of Climate Change* note down the different burdens that family or community members experienced. Assess how greatly these burdens affected their wellbeing. Was their one family or character in particular that you thought was particularly resilient or particularly struggling in terms of their mental health.
	• Go to the World Happiness Report website https://worldhappiness.report/ed/2022/.
	  ○ Search for the ranking of each case study in the comic and look at how the 6 factors affect their overall life evaluation. How might life satisfaction be impacted by climate change? How might your ability to 'adapt' to climatic or environmental conditions be impacted by income, access to education, life satisfaction or safety?
	  ○ Using a blank outline map, create a legend and colour in the top 20 and bottom 20 in the World Happiness ranking.
	• Look up the Gender inequality index: https://hdr.undp.org/data-center/thematic-composite-indices/gender-inequality-index#/indicies/GII. Compare any three countries from the comic book and study which indicators have a greater gender gap.
	• Plan and implement a culturally sensitive strategy which would help to reduce the gender gap in any of the three countries chosen. The Girl effect website https://www.girleffect.org/ might provide some extra ideas. It is suggested that students first watch the short video summarising the Girl Effect.https://www.youtube.com/watch?v=WIvmE4_KMNw
		Level 7/8 Health and Physical Education:
		Making Healthy and safe choices
		AC9HP8P10
		
		Identities and Change
		AC9HP8P03
		
		Level 10 Geography:
		Geographies of Human Wellbeing
		AC9HG10K07, AC9HG10K08

	• Class discussion: How do gender roles vary as a result of climate change? What is possibly implied by the characters on the front cover of the comic?	
Drama, Art and Media	**Stakeholder Role Play** Students could work in groups to create a dramatic play as to what they think should happen next. They must consider the viewpoints of many stakeholders such as the government, corporations, family etc. This provides an opportunity to explore student empathy and to discern the main ideas or messages students have taken away from reading the comic. Below are some possible topics or key questions that could be explored in a dramatic play. • Year 7: How does climate change affect the characters' liveability? • Year 8: How are landforms and landscapes being affected by climate change? • Year 9: How does climate change affect the environment and food security of a place? • Year 10: How are the characters managing the environmental changes? • Year 10: How does climate change affect the characters' wellbeing? **Other activities to consider:** • Create an artwork which illustrates a key theme in the novel. • Create an animation for one of the main story lines, including points of view, settings, ideas, sounds and text.	**Level 7/8 Drama:** Developing practices and skills AC9ADR8C01 Creating and Making AC9ADR8C02 **Level 7/8 Visual Arts:** Creating and Making AC9AVA8C01, AC9AVA8C02 **Level 7/8 Media Arts:** Creating and Making AC9AMA8C01, AC9AMA8C02