GEOGRAPHY BULLETIN

GEOGRAPHY MATTERS

The Geography Teachers Association of NSW & ACT Inc.

Volume 51 No 4 2019

IN THIS ISSUE:

PROJECTS • REPORTS • RESOURCES • ARTICLES • REVIEWS

EXECUTIVE 2019

GEOGRAPHY BULLETIN

Editor
Lorraine Chaffer

Articles and letters should be sent to the Editor:
Lorraine Chaffer
Email: lchaffer@tpg.com.au

Design and layout:
Jill Sillar, Professional Teachers' Council NSW
jill.sillar@ptc.nsw.edu.au

ISSN 0156-9236

The Geography Teachers Association of NSW & ACT Inc.

OFFICE OF THE GEOGRAPHY TEACHERS' ASSOCIATION OF NEW SOUTH WALES

ABN 59246850128
Address: 67–71 St Hilliers Rd, Auburn NSW 2141
Postal Address: PO Box 699 Lidcombe NSW 1825, Australia
Telephone: (02) 9716 0378, Fax: (02) 9564 2342
Email: gta.admin@ptc.nsw.edu.au
Website: www.gtansw.org.au

ANNUAL MEMBERSHIP (Subscriptions include GST)

Personal membership $90.00
Corporate membership (school, department or business) $200.00
Concessional membership (retiree, part-time teacher or student) $40.00
Primary corporate membership free

Covers: Lighthouse and overnight storm with lightning, Port-la-Nouvelle, France.
Source: Wikimedia Commons

The Geography Bulletin is a quarterly journal of The Geography Teachers' Association of New South Wales. The 'Bulletin' embraces those natural and human phenomena which fashion the character of the Earth's surface. In addition to this it sees Geography as incorporating 'issues' which confront the discipline and its students. The Geography Bulletin is designed to serve teachers and students of Geography. The journal has a specific role in providing material to help meet the requirements of the Geography syllabuses. As an evolving journal the Geography Bulletin attempts to satisfy the requirements of a broad readership and in so doing improve its service to teachers. Those individuals wishing to contribute to the publication are directed to the 'Advice to contributors' inside the back cover. Articles are submitted to two referees. Any decisions as to the applicability to secondary and/or tertiary education are made by the referees. Authors, it is suggested, should direct articles according to editorial policy.

GEOGRAPHY BULLETIN

Volume 51, No4 2019
EDITOR: Lorraine Chaffer

CONTENTS

EDITORIAL

EDITORIAL

Welcome to Edition 4 of the Geography Bulletin for 2019.

Geography Matters was selected as the focus title for this issue to promote the value of Geography in the curriculum and examine the place of citizenship in geographical education, including ideas for teaching about sustainability.

Special thanks to the following authors and publications who have given permission to republish material:

- Anna Davies and Frances Fahy for *'Here are 9 reasons why Geography matters'*
- The Australian Academy of Science from *Geography: Shaping Australia's Future*
- The Conversation for *Caring about Climate Change: Global Citizens and Moral Decision Making*
- Gaye Braiding for *Spark: NSW Ecosystems on show*

Assessment tasks

The generosity of the following schools who have shared assessment tasks is acknowledged with appreciation. It is through teachers and schools sharing ideas and resources that Geography becomes stronger.

- Geography Faculty Saint Ignatius' College, Riverview and Alex Damo, St Pius X College, Chatswood for *Interactions and Patterns along a Transcontinental Transect.* (Elective Geography)
- Geography Department: Cranbrook School for *Changing Places: Changing Assessment* (Stage 5)

Articles

Thank you to the following authors for writing material for publication in the Bulletin. Your contributions are valued by GTA and can be used as self-identified professional learning for your NESA accreditation where relevant.

- Alex Pentz for *Going Global*
- Louise Swanson for *Teaching controversial issues in Geography*
- Grant Kleeman for *The Amazon Burns*
- Paul Batten for *Geography Professional Learning Online report*
- Sasha Jessop for *Hawkesbury Nepean Valley Flood Resource*

NOTE: There are four appendices with this edition to supplement articles.

* Appendix 1 is a PPT of the transect needed for students to complete the *Interactions and Patterns along a Transcontinental Transect assessment task.*
* Appendix 2 is an editable Word version of the assessment task *Changing Places: Changing Assessment* for adaptation to suit individual schools.
* Appendix 3 is an activity linked to *The Amazon Burns*
* Appendix 4: Future Crunch: 99 Good news stories from 2019

Lorraine Chaffer, Editor

EDITORIAL

2019 AGM and 2020 GTA NSW & ACT Council

At the Annual General Meeting on November 27th a motion was passed to change the name of GTA NSW Inc. to GTA NSW & ACT Inc. This formalises an arrangement GTA has with the ACT and provides teachers in the ACT with the same member benefits as NSW teachers.

The 2020 GTA NSW & ACT Council was elected with all nominations unopposed. It is wonderful to have seven representatives from regional NSW and ACT.

President: Susan Caldis

Vice Presidents:
Sharon McLean, Lorraine Chaffer, Louise Swanson and Alexandria Warnock (Newcastle).

Elected Councillors:
Alex Pentz, Grant Kleeman, Martin Pluss, Paul Batten, David Latimer, Adrian Harrison, Karen Bowden, Keith Hopkins, Katerina Stojanovski. John Lewis (Newcastle), Cath Donnelly (Newcastle), Drew Collins (Newcastle), Michael de Rosa (ACT), David Proctor (Broken Hill)

Treasurer: Grant Kleeman

Editor Lorraine Chaffer

There are three co-opted council members:
Paul Alger, Grace Larobina, John Petts (Wagga)

NOTE: The full President's Annual Report for 2019 can be found later in this publication.

UPCOMING EVENTS

GTA NSW & ACT Annual Conference – Term 2 2020

- K–10 Thursday 21 and Friday 22 May (ANZ Stadium Sydney Olympic Park)
- Stage 6 Saturday 23 May Novotel Sydney Olympic Park.

Webinars – Term 1 2020 – Dates and topics tbc

HSC Exam Preparation Lectures – Term 2 2020. Dates and venues tbc

Regional conferences – dates and venues tbc.

NOTE: Expressions of Interest to present at the Annual Conference are open on the Conference website (See flyer after the editorial)

Lorraine Chaffer
Editor

BREAKING NEWS

GTA are excited to announce that Damon Gameau will be a keynote speaker at the 2020 GTA NSW & ACT Annual Conference

Damon's new film, 2040, is an innovative feature documentary that explores what the future would look like by the year 2040 if we embraced the best solutions already available to us to improve our planet. It was released in April 2019 and is already in the top five highest grossing documentaries of all time in Australia at the cinema

GEOGRAPHY MATTERS

Anna Davies, Irish Research Council and Frances Fahy, NUI Galway

1. Geography describes the earth

Geo comes from the Greek word for Earth and the "graphy" part comes from the Greek word which means to write about something. Thus, geo and graphy literally means "to write about the Earth." Geography teaches vital skills that help us describe and read the world and is representations, from ancient maps and charts to contemporary models and satellite images. Irish statesman and scholar Edmund Burke noted, "geography is an earthly subject, but a heavenly science".

2. Geography links the past to the present and the future

Geography helps us understand how past societies and environments developed, which provides the context for the present and helps us to plan for our future. Geography helps us answer the question of "how do we wish to live?" in an informed way. As Michael Palin said, "geography is the subject which holds the key to our future".

3. Geography involves different disciplines

Geography combines the study of physical and human worlds and provides a unique context to study how our world is changing and how we can adapt to and mitigate changes. Geography considers both human and non-human processes and how they affect each other, for example how and why floods occur and how they impact landforms, human settlements and industries.

It combines scientific and social literacy; it provides a bridging space in the curriculum to bring together the creativity of the arts, the insights of social science and humanities as well as the important principles of natural science methods and practices. It gives students a "big picture" view of the world as well as detailed understanding of natural and social systems and provides students with the ability to translate knowledge across disciplinary fields, a skill that will become increasingly important in the 21st century.

4 Geography contains essential survival skills

In December 2004, an earthquake in the Indian Ocean formed tsunamis (tidal or seismic sea waves) that devastated communities and environments in 14 countries making it one of the deadliest natural disasters in recorded history. One student from the UK holidaying with their family recognised the signs of an impending tsunami – the tide rushing out, the bubbling water, and the erratic movement of boats - from the geography lessons they had received and warned their family to leave the beach immediately.

5. Geography provides an understanding of scale

Geography covers processes operating at and across scales, from the microscopic to the extra-terrestrial and the world needs geographically literate and global citizens now more than ever. Understanding the earth and society should be a pre-requisite to govern. Former US president Barack Obama put it like this in 2012: "the study of geography is about more than just memorising places on a map. It's about understanding the complexity of our world, appreciating the diversity of cultures that exists across continents. And in the end, it's about using all that knowledge to help bridge divides and bring people together."

6. Geography gives us an understanding of place

The world around us is geography's laboratory. Geography provides a tangible means for students to put theory into practice, to take learning from the classroom into the real world. It provides the lived context to connect understanding of physical properties – such as landslides - to the fundamental cycling of water to the importance of decision making about appropriate land use and settlement location. It helps people to understand their place in the world and comprehend current and historical social, cultural, economic, environmental and political events. To quote geographer Yi Fu Tuan, "geography is the study of earth as the home of people"

7. Geography helps us address the big challenges

There is no silver bullet to resolve global challenges such as biodiversity loss, mass extinctions, major societal upheaval, rising inequalities and global climate change. Geography provides the intellectual glue that can bind together insights from physics, chemistry, biology, geology, sociology, economics, political science and many other disciplines.

For example, geography helps us understand how our climate has changed over time, how human and physical processes have interacted to cause current conditions and how those interactions will continue to change landscapes, environments and livelihoods in the future. Geographical understanding helps us plan for uncertain futures based on our knowledge of past and current conditions. Geography helps inform human development illustrating how our very survival relies on the effective functioning of both natural and social systems.

8. Geography helps people get jobs

Geography provides important applied and transferable skills, with many employers prizing the knowledge and skills that geography students acquire throughout their education. UK studies have found low levels of unemployment amongst geography graduates where leading universities and politicians recognise geography as one of the key "facilitating" subjects for entry to degree level study.

Geography helps create the kind of global citizens that are required to navigate the challenges that lie ahead

9. Geography provides an education that everyone deserves

Ireland has a proud history of geographical trailblazers, from the late and great Anne Buttimer to the current leaders of our discipline who are making theoretical and empirical contributions to knowledge worldwide. However, geographers are not created at university, the seeds are sown in primary school and cultivated at second level.

Removal of geography as a core subject for the Junior Cycle risks impoverishing our future. Geography fosters critical thinkers who are able to navigate the complexity of our data rich world. Practical and relevant, it is a living, breathing discipline, a science of sciences; a site of synthesis and integration. It helps create the kind of global citizens that are required to navigate the challenges that lie ahead.

Professor Anna Davies is Professor of Geography, Environment and Society and Principal Investigator in the Environmental Governance Research Group at Trinity College Dublin. Dr Frances Fahy is a Senior Lecturer in Geography at National University of Ireland Galway.

Originally published: https://www.rte.ie/brainstorm/2019/0403/1040369-here-are-9-reasons-why-geography-matters/

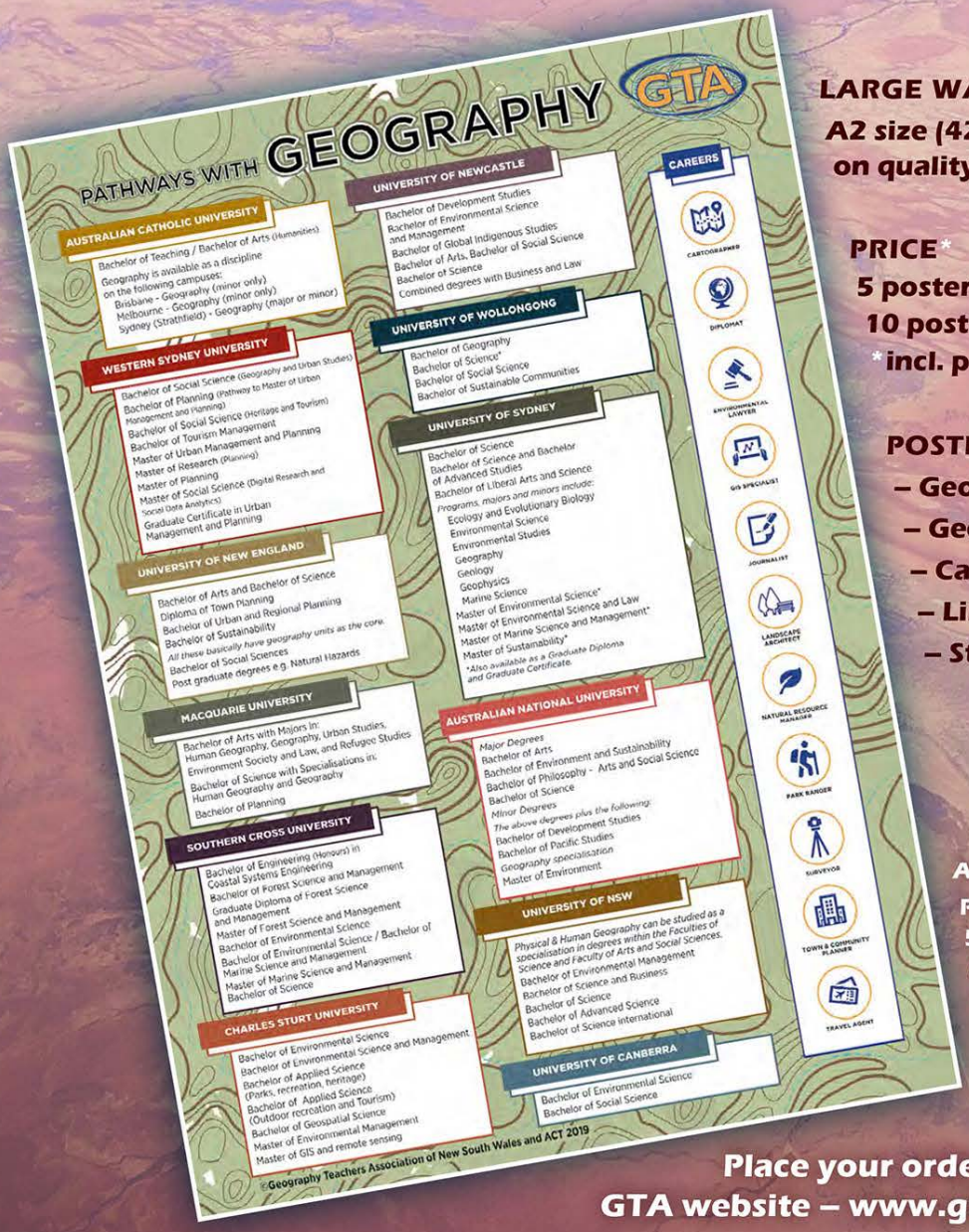
Geography Teachers Association of NSW & ACT

NEW PATHWAYS WITH GEOGRAPHY POSTER

Do you struggle to discuss tertiary options and potential future careers with your Geography Students?

Displaying the PATHWAYS WITH GEOGRAPHY poster in your classroom will stimulate discussion about the value of Geography and how the subject links to a wide range of careers.

The poster will be updated yearly with new tertiary courses and range of different career pathways.



LARGE WALL POSTER

A2 size (42 x 59.4 cm) printed on quality 200 gsm paper

PRICE*

5 posters – $70

10 posters – $100

***incl. postage & handling**

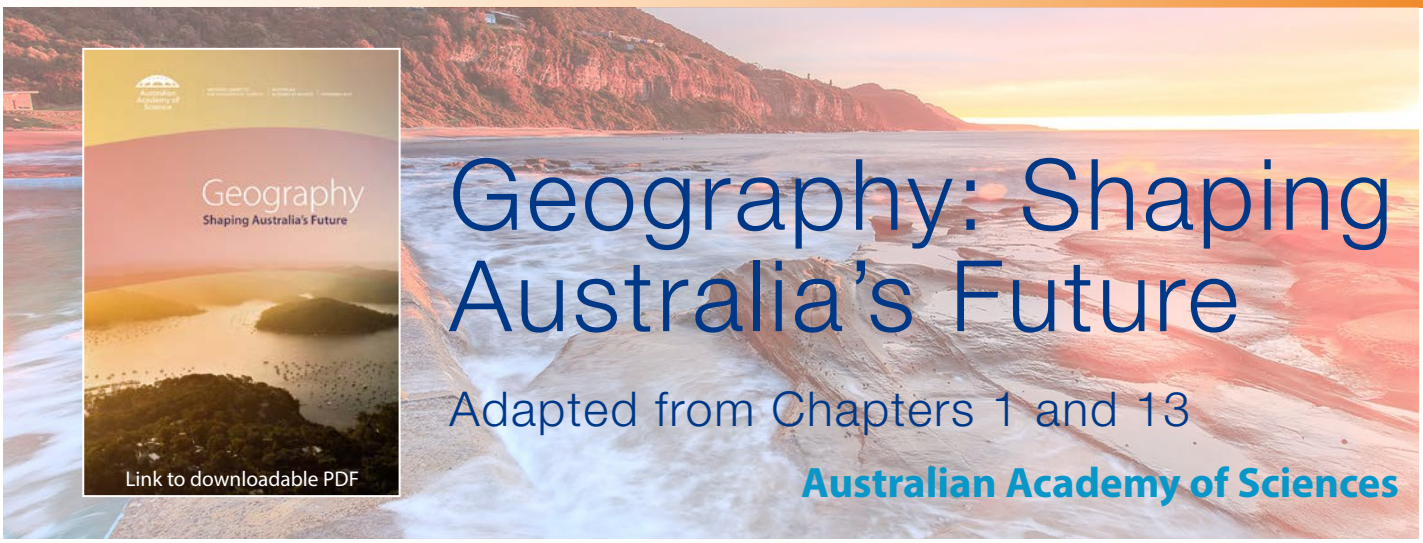
POSTERS FOR

- **Geography classrooms**
- **Geography staffroom**
- **Careers office**
- **Library**
- **Study rooms**

AVOID POSTAGE

Pay and collect option: 5 posters – $50 from the GTA NSW & ACT Office, 67–73 St Hilliers Rd, Auburn (Corner Hall & Percy Sts) Phone ahead 9716 0378

Place your order via the GTA website – www.gta.nsw.org.au



Geography: Shaping Australia's Future

Adapted from Chapters 1 and 13

Australian Academy of Sciences

Geography is a wide ranging and dynamic discipline concerned with exploring issues affecting the wellbeing of people and places. To Australian geographers, wellbeing includes economic welfare based on employment and incomes, as well as the core values of social justice, environmental sustainability, equity and cultural diversity. Geography provides an understanding of the diversity of environments, places and cultures on this planet, and the inequalities within and between places. Applying geographical understandings to contemporary issues allows us to integrate knowledge about the natural world, society and the humanities through the perspective of space, place and the environment. This approach plays an important role in shaping strategic directions in policy formation and in education at all levels

Introduction

Geography is a wide-ranging and dynamic discipline that investigates many of the issues affecting the wellbeing of people and places in Australia and throughout the world. These issues are often inter-disciplinary, and geography brings an ability to integrate knowledge about the natural world, the social world and the humanities, through its perspectives of space, place and environment. For example, Australian geographers research:

- past environmental change, so as to better understand present and future change
- economic change and its effects on the movement of people
- perceptions of, and responses to, natural hazards
- the causes and consequences of spatial differences in human wellbeing, such as health or educational attainment
- managing the environmental consequences of the growth of Australia's cities and regions
- repairing the effects of human modifications of river environments
- the interactions between environmental, economic and social change in Australia's Asia–Pacific neighbourhood
- the sustainability of the ways we use environmental resources.

However, geography has a broader ambition than finding answers to environmental, economic and social problems. The discipline's ultimate goal is to help us to understand the world around us, the diversity of environments, places, peoples and cultures on the planet, and the inequalities within and between places. It is also to understand our place in this world—our dependence on the environment for our survival, our attachments to the places in which we live, and our connections with and dependence on places and people throughout the world. Consequently, geography has an important role in education at all levels.

Geographers bring particular ways of thinking to these matters, which define the discipline. They can be applied to a very wide variety of biophysical and human phenomena, some of them tangible, like landforms or the built environment, and others intangible, like social attitudes or cultural diversity.

Geography as a way of thinking

Geographical thinking is based on a set of concepts that guide the choice of research topics, identify significant questions, and suggest explanations. The core concepts are space, place and environment, while interconnection and scale are important intersecting concepts. Although these concepts are also employed by other disciplines, such as ecology, archaeology, economics and sociology, in none are they as central to thinking and practice as in

geography, and in none are they used as frequently in combination. Their application in geographical research is illustrated throughout this report.

Time is another important concept that intersects with the core geographical concepts, and geographers research changes that have occurred over timescales ranging from hours to hundreds of thousands of years. Geographers also recognise that the past affects the present, which in turn, will guide the future.

Space

Spatial thinking is central to geography. One aspect of this is a focus on how physical and human phenomena are distributed across the Earth's surface. These spatial distributions have patterns, or regularities, and can be analysed to pose questions, identify relationships and suggest explanations. Spatial distributions, such as the concentration of most of the Australian population in just five cities, also have environmental, economic, social and political consequences that require explanation and evaluation

Spatial analysis of hospital admissions

A spatial study of small area variations in hospital admissions for children aged 0–4 showed an expected positive relationship between admissions and socio-economic disadvantage, but also an additional influence from location, through physical accessibility to medical services (Butler et al., 2013).

Spatial thinking is also involved in studies of economic processes and social structures. For example, the spatial segregation of socio-economic groups through the operation of the housing market or the location choices of particular social groups, can perpetuate social inequalities.

In studies of social phenomena, geographers do not view space as absolute but as produced by the relations between people and places. For example, space is experienced very differently by subsistence farmers in the highlands of Papua New Guinea compared with international bankers in New York.

Place

Geographers contend that place matters. One reason for this is that each place is unique in many of its characteristics, whether these are internal to the place (e.g. soil resources) or the result of interconnections with other places (e.g. trade, flows of people or cultural influences). Consequently, the outcomes of similar environmental or socio-economic processes are likely to be different in different places. Likewise, similar

Suburban streets in Melbourne, Victoria.
Credit: Tom Rumble / UNSPLASH / PUBLIC DOMAIN

problems may require different strategies in different places. Geographers are sensitive to the importance of place, and the need to adjust generic explanations and policies to the realities of individual places.

Effects of differences between places in disaster recovery

Research by geographers into how regional communities recover from a natural disaster has shown that there are significant differences between places in the ability of their communities to effectively use resources, both their own and those from outside. Assistance provided by external agencies must recognise and respond to these place-based differences (Wood et al., 2013).

Another theme is that places, through their social and economic characteristics, or people's sense of attachment to them, influence the educational and economic opportunities, aspirations, physical and mental health, and quality of life of their residents. Identifying places where the influences of place perpetuate disadvantage enables governments and agencies to direct resources to areas of greatest need.

Geographers recognise that places are produced and continually changed by the actions of natural processes, individuals, businesses, organisations and governments, and by their relationships with other places through economic, social, demographic, cultural and political influences. Consequently, places can be described as both local and global. This knowledge is the basis of urban and regional planning.

Although transportation and communication infrastructure have made it possible to locate economic activities that are not tied to physical resources almost anywhere in the world, many still cluster in particular locations, like Silicon Valley for information technology and Sydney for financial institutions.

Environment

Geographers' perspective of the environment is underpinned by the idea is that humans are dependent on the biophysical environment for their survival, and are also an integral part of it. Geographical research linked with this idea follows several themes.

One involves basic research into the characteristics of Earth's climate, landforms, vegetation cover, water resources and other environmental features, and the processes that produce them. Recognising the significance of place, geographers are often particularly interested in the interconnections between these phenomena and processes in particular places and landscapes.

Environmental record of past cyclones

Determining the frequency of very high intensity tropical cyclones has been limited by the lack of long-term meteorological records, which extend back less than 100 years. However, studies of Queensland beach ridges provide a record of these cyclones over the past 5000 years, and show that high intensity cyclones have been more frequent than thought (Nott et al., 2009).

A second theme is the effects of humans on the environment. For example, geographers have led studies of the effects of human modification of rivers and floodplains, and of changes to Earth's surface through vegetation clearance and urban development. The latter has been shown to influence changes in rainfall patterns in Australia. They have also studied the ways that societies manage environmental resources, such as through land tenure systems in pastoral regions, Aboriginal and Torres Strait Islander concepts and methods on their land and sea countries, the extraction and storage of water, or the designation of terrestrial and marine protected areas.

This knowledge can be applied to issues such as natural hazards, land degradation, sea-level rise, biodiversity conservation or the management of environmental change. It also directly contributes to our understanding of the concept of the Anthropocene, the name proposed for the present era in which humans are thought to be the dominant influence on environmental change.

A third theme is the influence of the environment on humans—their activities, economies and lives. This includes the effects of the coast on population distribution in Australia, of the environment on agriculture, of water resources on regional development, of droughts or tropical cyclones on settlements and economies, and of landscape on Australian identity.

Gordon River Dam, SW Tasmania Credit: Lode Lagrainge, Upsplash/ Public Domain

Water availability as a constraint on Australia's population growth

A study of water availability concluded that there is adequate water in Australia to meet the needs of any likely future population. Most of Australia's population growth will take place in the major capital cities, which can be supplied from new sources of water such as recycled sewage, groundwater, desalinated water and treated stormwater. Population growth is also unlikely to be restricted by a lack of water for food production, as the increasing efficiency of water use in agriculture, and the diversion of food from exports, will enable production to keep up with population. However, environmental quality and biodiversity may suffer as more water is diverted to human uses (Rutherfurd and Finlayson, 2011).

A final theme is people's perception and knowledge of environments. This includes studies of Aboriginal and Torres Strait Islander environmental knowledge, European perceptions of drought, how knowledge of environmental issues is constructed, or community views on the objectives of environment management. The theme also includes fundamental thinking about the concept of nature, the place of humans in it, and our relationships with other life on the planet.

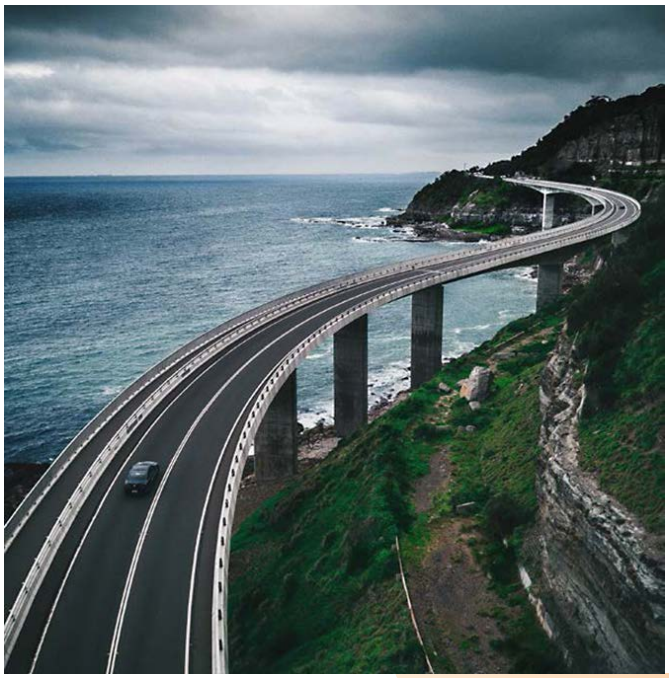
Prevalent in the last three of the four environmental themes is the significance of the interconnections between humans and nature, a long-standing area of geographical research. Geographers study the processes involved in these interconnections, and the ways they interact in particular places, in order to find answers to specific and complex environmental problems.

Interconnection

Interconnection refers to the complex interrelationships between phenomena. These may be relationships within the one place, or between places, and may involve both biophysical and human elements. The concept underpins the study of processes, which are sets of cause-and-effect relationships, or interconnections, operating over time.

Interconnection is also about flows, such as the flow of migrants between countries, of water in the hydrological cycle, or of energy resources in the global economy. Flows are central to the concept of a system, a group of interconnected objects and elements linked together by flows of energy, matter and—in systems involving people—information. Systems thinking is important in geography, and can help in understanding change. Change in one element in the system can produce changes in other elements, which may be experienced in the same place as the initial change, or in different places, or at a different scale. These changes are often not anticipated, such as the salinisation of soils caused by the clearance of deep-rooted vegetation.

An awareness of interconnection prompts geographers to draw on knowledge from a variety of fields, both within geography and in other disciplines. As a result, they are well prepared for the interdisciplinary research increasingly needed to tackle complex issues.



LEFT: Sea Cliff Bridge, Clifton, NSW. Credit: Silas Baisch / Unsplash / Public domain

Scale

Scale can refer to the areal size of an investigation, a level of analysis (typically from local to regional to global), or types of interconnections. Because relationships between phenomena found at one scale may not hold at another, the choice of scale is crucial in designing research. In policy-oriented research it is important to consider the scale of the management system that will use the results of the research. For example, sustainable natural resource management is best achieved at the catchment scale.

Geographers also recognise that there are interconnections between phenomena at different scales. For example, an understanding of climate change requires analysis at a global scale, but the effects of climate change and adaptation strategies are often most effectively investigated at a local or regional scale.

Research methods in geography

Geographers use a very wide variety of methods in their research. These include:

- collecting data through field work, which could involve the direct observation and measurement of environmental data, or interviews and discussions with human participants
- collecting data through remote sensing
- applying qualitative and/or quantitative techniques to obtain information
- using geographical information systems to manage and analyse spatial data
- analysing relationships between variables through statistical modelling, spatial modelling, laboratory experimentation or controlled comparisons of places
- using case studies to understand how processes operate and combine in particular places and at particular times to produce specific outcomes
- theorising from empirical work
- assessing how best to address a public policy problem.

At present, many areas of geographical research are being revolutionised by rapid advances in the spatial technologies that enable scientists to obtain and record very large quantities of data from precise locations. Global positioning systems, remote sensing, increased computing power, the internet, Google Earth, smartphones and drones have changed the geography of the world, and the world of geography. At the same time, developments in geographic information systems and spatial software make it possible to process, analyse

and visualise this wealth of information. Geographers have the knowledge to ask the right questions of these data and undertake appropriate types of analysis.

The branches of geography

The discipline is conventionally divided into physical geography—the geographical study of the biophysical environment—and human geography—the geographical study of populations, societies, economies and cultures. However, a growing number of geographers teach and work across this division, studying the inter-relationships between elements of the biophysical world and elements of society, a sub-discipline often called environmental geography. Many geographers also develop expertise in a related discipline like geology, biology, archaeology, anthropology, economics, urban planning, demography or sociology, and work and publish in the fertile borderlands between geography and these disciplines.

Conclusion

Geography is distinctive in its emphasis on spatial thinking, its interest in knowledge generated from the study of specific places, and its recognition of the fundamental importance of the environment to human welfare. Its vision is both local and global. It is also marked by an awareness of the interconnections between phenomena and processes both within places and across space, and its fields of study span the natural sciences, social sciences and humanities.

> *Places and people are increasingly interconnected globally, and society's current problems require answers that integrate different fields of knowledge. In a world in which inequalities within and between places can threaten social cohesion, and where the pressure of human impacts on the environment is a growing concern, geography has much to offer.*

Geography in Australian Schools

What does geography contribute to the education of young Australians?

Geography builds a sense of national identity and Australia's place in the world. To understand Australia and ourselves we need to understand its geography—our vast area and relatively few people, the diversity of our landscapes and climates, our natural resources, the movement of peoples to and within Australia, our distance from Europe and North America and our closeness to Asia and the Pacific. We learn to understand that different cultural groups, for example, Aboriginal and Torres Strait Islander peoples and the vast waves of immigrants that enter our shores, all engage with the land differently. We also recognise the changing nature of community and identity in Australia, influenced by waves of migration, rapidly changing information and communication technologies, increased mobility and attitudes to globalisation and our mythmaking.

Geography helps students make decisions about the big issues affecting the quality of their lives and environments. It is impossible to read a newspaper without finding reports on current issues that are studied in geography—climate change, coping with floods and droughts, liveable cities, ageing populations, engagement with our neighbours in Asia and the Pacific, and the world beyond. Geography students are encouraged and guided to observe, to seek information, to record what they find in order to understand the processes behind these issues. In doing so, they draw relevant conclusions and evaluate possible solutions.

Geography nurtures students' natural curiosity in, and appreciation of, the world's people and places. Thinking geographically and developing their innate geographical imaginations helps young people think about their own lives and their own communities, as well as people, places and environments throughout the world.

While geographical knowledge and understanding may come from students' innate interest in the world around them, the study of geography nurtures this awareness. It helps us to us to understand our place in the world. More importantly, it develops student competencies to think, reason and act in a rapidly changing world. It also fosters an environmental ethic fundamental to Australia: caring for place —caring for country.

Geography studies phenomena from the natural world, the social world and the humanities, and integrates them through the discipline's perspectives of place, space and environment. This helps students to see the interconnections between different types of knowledge, and to become open to a wide range of ways of understanding and explaining the world they observe and experience.

Finally, geography helps students to think about the future. Geography teachers develop teaching strategies that emphasise the application of geographical understanding in realistic decisionmaking contexts. In doing so, they give young people opportunities to acquire, develop and apply a range of key geographical ideas and principles. Ultimately, geography students are empowered to make judgments that are informed by extensive descriptive knowledge about the world; knowledge that is enriched by theory and deepened by abilities to think about alternative futures for people, places and environments.

Read or download a copy of the Decadal plan for *Geography: Shaping Australia's future*. Australian Academy of Science: www.science.org.au/supporting-science/science-policy-and-sector-analysis/reports-and-publications/geography-shaping

The Amazon Burns

Dr Grant Kleeman

In 2019, fires raged across the Amazon basin. (See figure 1). So great was the destruction wrought by these blazes they represented one of the biggest environmental disasters of the decade. The accompanying worldwide media attention prompted a wave of global concern and focused attention on the valuable environmental services provided by the forests of the Amazon. It also initiated a debate about the fires' link to, and implications for, climate change.

Importantly, there was not just one large fire, but thousands of fires spread all over the Brazilian Amazon – in particular, along the southern edges of the rainforest where the encroachment of agriculture and grazing has resulted in the greatest rate of land cover change. The vast majority of fires were lit by cattle ranchers, loggers and speculators who want to clear and utilise the land.

Figure 1: One of the more than 70,000 fires that caused havoc in the Amazon Basin in 2019

Figure 2: Drone-based image of an Amazon blaze

Figure 3: Slash-and-burn land clearing

The geography of the Amazon Basin

The Amazon Basin of South America is vast. (See Figure 4). It covers about one-third of South America; spans eight countries and features a mosaic of intersecting and overlapping ecosystems. The Basin spans at least six million square kilometres (an area nearly twice the size of India) and is home to earth's largest rainforest. The forest, which covers about 80 per cent of the Basin, supports one-fifth of the world's terrestrial species, including many found nowhere else on earth. (See Figure 5). It is also home to more than 30 million people, including hundreds of indigenous groups and several dozen isolated tribes with limited, if any, contact with the outside world. The Amazon is drained by the world's largest river, as measured by the volume of flow, and the size of its drainage basin.

Despite its vast size, and its importance to the planet, there is still much to learn about the complexity of its contribution to earth's ecosystem services. Given that it is largely surrounded by mountainous plateaus, much of the basin is remote and difficult to access.

Figure 4: South America as seen from space. The vast swathe of the Amazon Basin still dominates the landcover of the northern two-thirds of the continent.

The Amazon rainforest's environmental services

The importance of the Amazon rainforest and the environmental services it provides extend well beyond the borders of Brazil. The rainforest is an enormous 'carbon sink'. It draws down carbon from the atmosphere and sequesters it in the soil and plants of the forest. Additionally, the plants, transform un-sequestered carbon dioxide into oxygen, which is pumped back into the atmosphere. Up to 20 per cent of the earth's oxygen originates from the Amazon forests. Without this sink and oxygen-producing capacity, global atmospheric carbon dioxide concentrations would increase much more rapidly than they are already increasing, resulting in even higher temperatures. When the forest burns, the stored carbon dioxide is released to the atmosphere thereby adding to the warming of the planet.

The Amazon also pumps vast quantities of moisture into the air through a process called transpiration. About half of this moisture falls as rain within the basin. The rest travels large distances to other parts of South America via 'atmospheric rivers' and contribute to the precipitation in these areas. As the forest is lost or fragmented this transfer of moisture is disrupted. Potentially, this could disrupt rainfall patterns across the continent.

Figure 5: Amazon jaguar

Land cover change in the Amazon

Over the past four decades, an extraordinary change has taken place in the Amazon Basin. Remote sensing reveals widespread deforestation associated with the expansion of agriculture and grazing. The scale and scope of this transformation are unmatched anywhere else in the world.

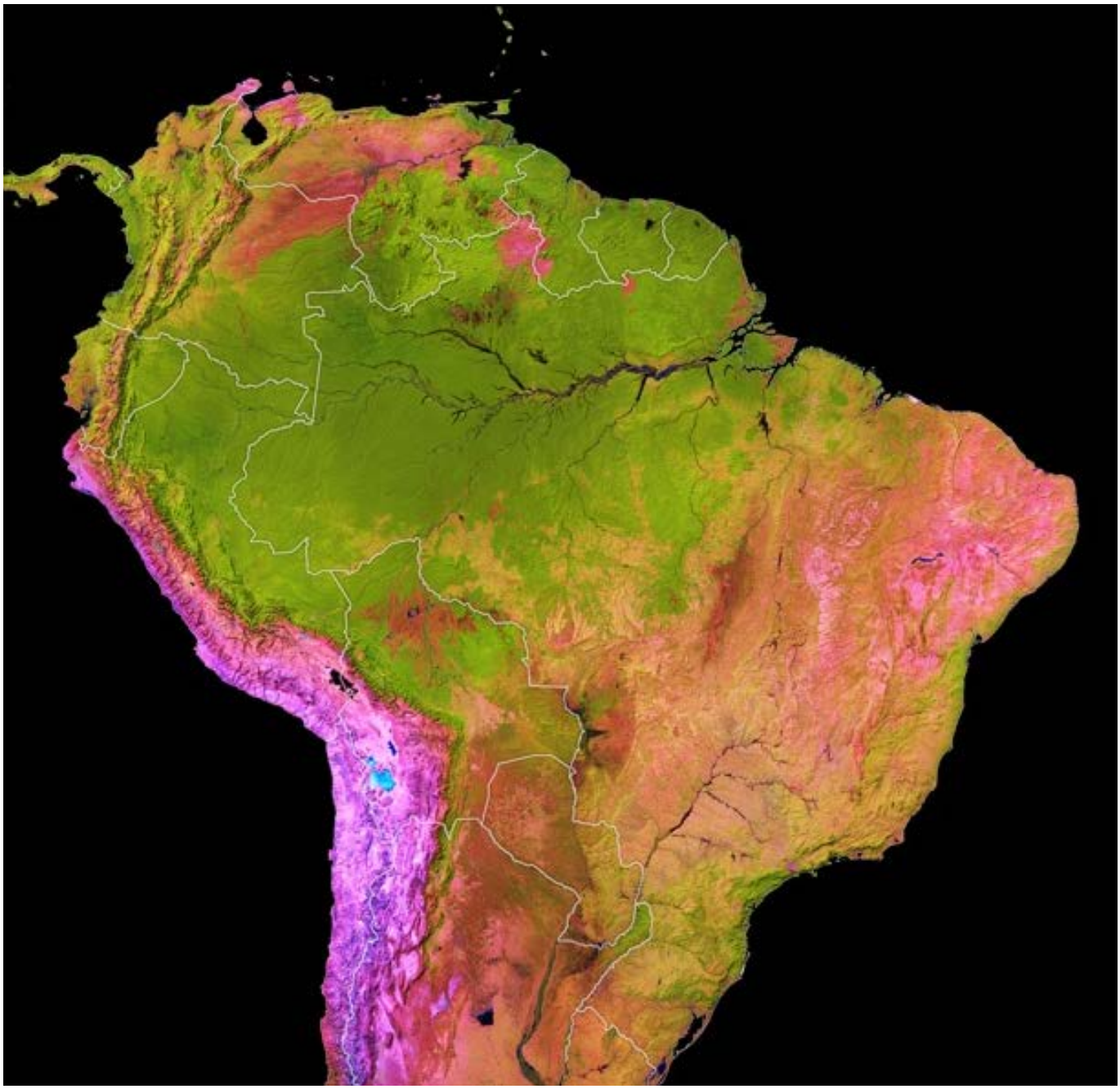
Figure 6, a false-colour satellite image of the Amazon and adjacent regions, highlights key differences in vegetation, moisture levels, and other surface features. The dark green areas show where forest—mostly tropical humid rainforests—thrive and have not been severely changed or degraded by human activity.

The lighter green areas are generally tropical savanna. These woodland-grassland ecosystems often have trees, but they are spaced widely enough that the canopy does not appear fully closed. While tropical savannas receive plenty of rain during the wet season, they typically have vegetation that can withstand the region's lengthy dry season. Rivers and reservoirs appear navy blue in the image. The brown areas are seasonally flooded wetlands.

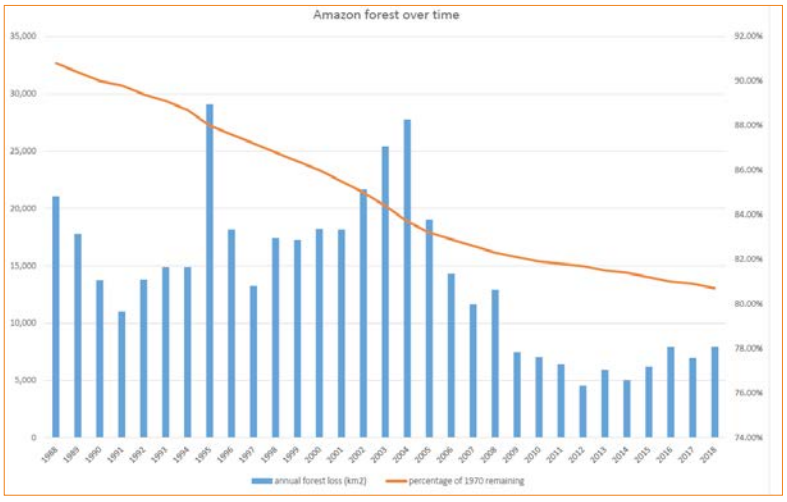
Areas affected by human activity stand out in this image. Forest areas that were converted to pasture generally appear yellow. Savanna converted to cropland is generally pink, especially if fields are fallow or have exposed soil.

Deforestation often achieved through the use of fire, represents the single greatest threat to the Amazon

Figure 6: False colour image of South America



rainforest. **Figure 7 shows the trend in deforestation since 1970.** Almost 20 per cent of the pre-1970 forest cover had been lost by the end of 2018 – down from 4.1 million km2 to 3,307,949 km2. The rate of loss peaked in 1995 when 29,059 km2 was lost. The average annual rate of loss in the period 2010–18 was a more modest 6,433 km2. This reduction in the rate of loss can be attributed to a range of initiatives, some of which have been instigated by international entities such as the European Union.



RIGHT – Figure 7: The trend in deforestation since 1970

The clearing of the rainforest is typically done using slash-and-burn processes. The forest is first cleared using bulldozers during the wetter months of the year (November–June). The piles of felled trees are set alight as the dry season arrives (July–October). All too often these fires spread into the adjacent, uncleared rainforest where they are difficult to extinguish. While most countries in the Amazon have enacted laws against deforestation, these are rarely enforced. Much of the slash-and-burn activity is done illegally.

The inauguration of a right-wing, climate change denying president, Jair Bolsonaro, in January 2019, resulted in a relaxation of environmental protection measures. As a result, Brazil had more than 70,000 fire outbreaks in 2019, an 84 per cent increase on the same period in 2018. More than half of these fires were in the rainforests of the Amazon. Higher temperatures and a dryer than normal summer, both attributed to global climate change, increased the intensity of the fires.

It is increasingly evident that farmers have taken advantage of weaker enforcement of environmental regulations by authorities. Since Bolsonaro assumed the presidency, the environment agency has issued fewer penalties, and ministers have sided with those responsible for the clearing of the rather than the indigenous groups who live in the Amazon rainforest.

The incidence of fire in the Amazon is tracked by satellite imagery and data. While naturally occurring, fires do occur they are much less likely than in Australia for example. While increasing global temperatures play a role, 99 per cent of the fires in the Amazon basin are a result of human intervention, either on purpose or accidentally. Evidence supporting such a claim includes satellite imagery showing a relationship between the points of fire ignition and roads and existing agricultural areas. Very few fires start in remote areas of the Amazon basin.

The Amazon fires and climate change

Climate change can increase the frequency and severity of wildfires by raising temperatures and increasing the chances of drought. Both of these factors create the conditions whereby, once ignited, fires can spread very quickly over large areas of land. The Australian experience with fires in the Autumn–Summer of 2019 bears witness to this observation.

Deforestation, whatever its cause, contributes to climate change. Scientists fear that continued destruction of the Amazon could push it toward a 'tipping point', after which the region would enter a self-sustained cycle of decline resulting in the conversion rainforest into savannah, a process that will release 200 billion tonnes of CO_2 into the atmosphere. As this occurs, temperatures will increase further and the environmental services of the Amazon forest will be greatly diminished to the detriment of the entire planet.

Indonesian fires

Sadly, it's not only the Amazon that burnt in 2019. In Kalimantan, deep within the rainforests of Indonesian Borneo, illegal fires raged, spreading acrid smoke as far as Malaysia and Singapore.

These fires are driven by the world's rapidly growing demand for palm oil, which is used in half of all supermarket products, from chocolates to shampoo. Despite its environmental impacts the oil palm industry thrives because of the money it generates. For farmers, the production of palm oil offers a higher standard of living. They afford to buy appliances such as televisions and refrigerators. The money earned from oil palm is four times greater than is possible from the growing of rice or the production of rubber.

To cash in on the palm oil boom, farmers are clearing land the fastest way they know, by burning. (See Figures 8 and 9). But they are not only burning the forest, they are also destroying the peatlands that lie beneath it. These peatlands are one of the world's largest natural terrestrial carbon sink.

In the absence of human intervention, forests fires in Borneo were very rare events. Peat, which is made up of partially decaying plant material, acts like a giant sponge, soaking up excess water during the monsoon and staying damp to prevent fires during the dry season.

Figure 8: Burning rainforest, Indonesian Borneo

Figure 9: Palm oil plantation on land cleared of its rainforest

Figure 10: Bornean orangutan mother with young

All images in this article from Shutterstock

What is lost on those setting fire to the forest is an appreciation of their ecological importance. The forests are home to 15,000 species of plants, 420 types of bird and 222 mammals, many of which are only found in Borneo. The forest is home to pygmy elephants, clouded leopards, sun bears, mouse deer, flying fox bats, pangolins and the Bornean orangutan. The orangutan is now one of the most critically endangered species on earth. Just 50,000 live in the wild. (See Figure 10).

Like the rainforests of the Amazon Basin, the forests of Borneo have been adversely affected by the warming of the planet. The frequency and intensity of fire have increased even though the vast majority of these blazes have been deliberatively lit. Like the deforestation taking place in the Amazon, the loss of forest cover diminishes the environment's capacity to sequester or store carbon and produce oxygen. It also diminishes the flow of moisture into the atmosphere.

*** See Appendix 4 for Student Activities**

FUTURE CRUNCH curate stories of human progress. They produce free, fortnightly email newsletters and have a presence on social media – Facebook, Twitter and Instagram.

Use Appendix 4 or click the image to access the article 99 Good News Stories curated under the following headings:

- Conservation
- Global Health
- Living Standards
- Peace, Safety and Human Rights
- Energy and Sustainability.

Each story can be linked to content in the NSW Geography syllabus 7–12 Student activities are provided for each category in the Appendix.

https://futurecrun.ch/99-good-news-2019

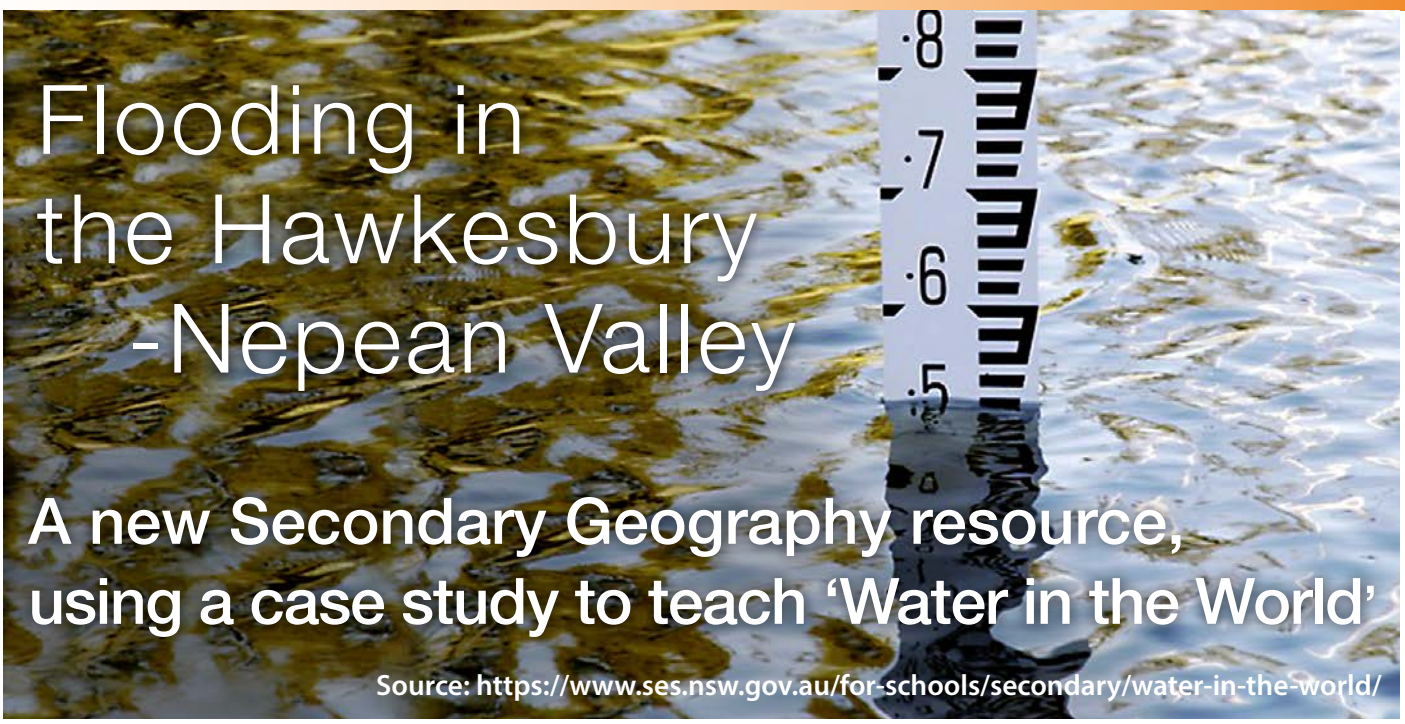


Image: Shutterstock

Sasha Jessop, Research Project Officer on behalf of the Flooding in Hawkesbury-Nepean Valley Schools Project Centre for Educational Research, Western Sydney University

Western Sydney University has developed an innovative, high-quality, teacher-adaptable resource which is freely available to all, online, through the NSW SES website. The resource was developed on behalf of NSW SES in collaboration with Infrastructure NSW and ESRI. It aligns to the Australian Curriculum: Geography and the NSW Geography Syllabus K–10 (2015) to teach the topic in Stage 4 "Water in the World".

Teachers, students and residents in the Hawkesbury-Nepean Valley flood zone will benefit from this resource, as well as the broader community, and anyone who has an interest in flood patterns and also wants to discover about natural hazard risk or what they can do to prepare in the event of a flood. Teachers of geography who would like to adopt a skills-based or problem-based approach to teaching "Water in the World" are also beneficiaries, as well as those who would like to adapt the skills lessons to suit their own local environment.

The link

To find the resource, go to the NSWSES website and look under the "For Schools" link, and you will find "Water in the World" in the "Secondary" section. There are six sub headings with a unit of work, teacher resources, primary sources, useful links and interactive materials.

https://www.ses.nsw.gov.au/for-schools/secondary/water-in-the-world/

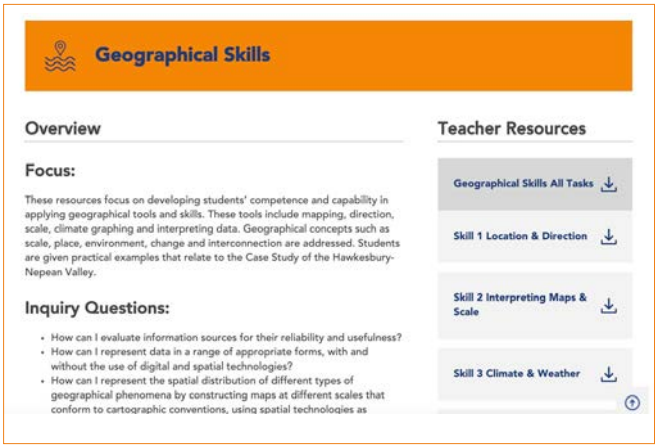
About the resource

This resource has been designed to develop student knowledge of flooding within the unique context of the Hawkesbury-Nepean Valley, by;

- considering the history of flooding
- presenting research on flood patterns
- using data and projections developed as part of the Flood Study 2017 'Hawkesbury-Nepean Valley Flood Risk Management Strategy' (2017)
- using scenarios to work through real-world problems relating to flood risk
- using cross-curriculum content particularly Science, English, Maths and History to explore flooding in the Hawkesbury-Nepean Valley
- delivering a model for high-quality fieldwork experiences
- developing geographical skills
- using an inquiry-based approach

- using a problem- based approach to dealing with the complex issues around flood risk, risk management, preparation and resilience within flood prone communities.

Sample skills lesson

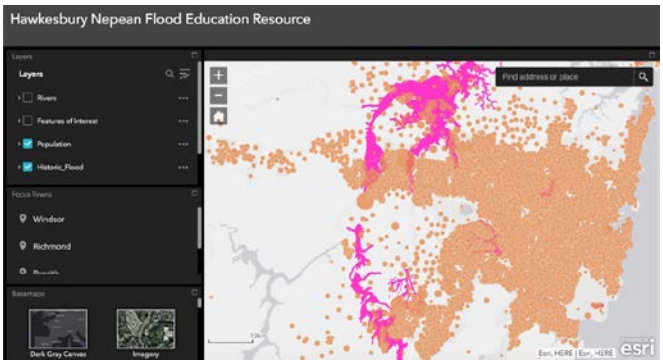


The Hawkesbury-Nepean Valley

The Hawkesbury-Nepean Valley is the longest coastal catchment in Australia, with a river system of more than 470 kilometres stretching from Goulburn to Broken Bay. It provides more than 90% of Sydney's drinking water supply and is over 22,000km^2. The Hawkesbury-Nepean Valley has formed over millennia through regular flooding, and also has tidal influence up to 145Km upstream. The largest flood recorded was in 1867 and reached a maximum level of 19.7 metres in Windsor. There were multiple fatalities during this flood and significant shock to community relating to the severity and destructive nature of this particular flood. The most recent major flood was in 1990, however there have been regular destructive flood events in the years prior to this. Aboriginal accounts of flooding in the region pre-colonisation exist and early British explorers saw evidence of flooding on the Hawkesbury river in the form of flood debris high in trees.

Flooding events, whilst destructive, have also made this land ideal for agriculture, as the soil is enriched with silt and many areas are low and flat which make it useful for farming. Early British accounts of this region describe in detail agricultural practices, use of the river system, the impact of flooding and the dependency of the Sydney Colony on the Hawkesbury-Nepean Valley for produce. In recent decades, however, changing land use patterns have resulted in a rise in population density with large numbers of houses and businesses being built in these areas. At present there are up to 134,000 people residing in the floodplain who may require evacuation (Resilient Valley, Resilient Communities Hawkesbury-Nepean Valley Flood Risk Management Strategy 2017).

ERSI – Hawkesbury-Nepean Flood Education Resource – interactive layers



Source: https://hnvalley.maps.arcgis.com/apps/webappviewer/index.html?id=03d9a837718941ee950da668888ed607

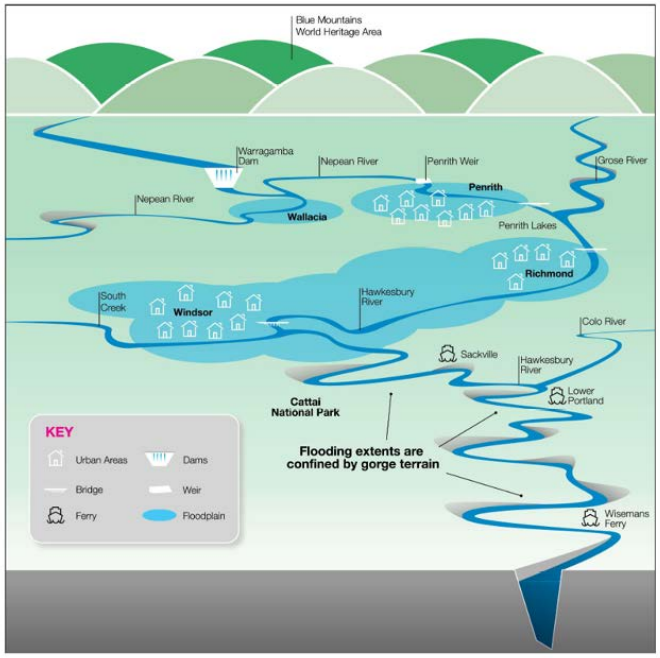
The Bathtub Effect

The unique geomorphic features of the Hawkesbury-Nepean Valley make it particularly vulnerable to dangerous, fast rising floods. In the event of an East Coast Low weather system, where extensive rain is dumped on the Sydney region, the cumulation of water into the Hawkesbury-Nepean Valley can be large. The location of this system at the base of the Blue Mountains causing run off, as well as the five tributaries (Warragamba, Nepean, Hawkesbury, Grose Rivers South Creek) flowing into the Valley result in high volume water flows with significant pressure. Further, the narrowing of the Sackville Gorge towards the north of the catchment causes downstream flowing water to build up at this narrow point rapidly and to flow backwards. This is called the 'Bathtub Effect'. The Sackville Gorge acts a drain or 'plug hole' that results in a very slow release of the floodwaters as well as deep water backflow. Further, deep floodwaters can be affected by wind, creating waves, eddying currents, wind chop and other damaging water phenomena. The appearance of 'flood islands' during flood events also cause concern, as these islands may not be as safe as they appear. Flood islands can be cut off from evacuation routes and eventually consumed. In summary, the potential for danger in such a system is considerable, and the lack of recent flood activity may have resulted in increased complacency in the local population, and long drought periods increase the risk, as ground saturation levels are low, and water does not absorb readily.

The resource features an animation video that explains the bathtub effect, entitled "What makes flooding in the Hawkesbury-Nepean Valley so dangerous?". Teachers may choose to start with this clip as a stimulus for inquiry, or to use this clip to check student understanding after they investigate the Valley using maps, historical accounts and data from the Bureau of

Meteorology website (which can be found under "Useful Links"). Link to the clip: https://www.youtube.com/watch?v=28SN9KixO2I&feature=youtu.be

The Bathtub Effect



View the bathtub effect video here https://www.ses.nsw.gov.au/hawkesbury-nepean-floods/

The brief

The brief was ambitious; the resource aims to deal with 'difficult' and 'complex' geographical problems that are authentic and require critical thinking and problem solving skills to resolve. Social research conducted by INSW and NSWSES suggests that ***70%*** of Hawkesbury-Nepean Valley residents are UNaware of their flood risk (2004), and that a large percentage of young people would engage in potentially risky behaviour in the face of flooding. Recent data from the Townsville flooding (2019) shows that only 50% of the population responded when instructed by SES to evacuate.

The process

GTA NSW was a valued participant on the Schools Advisory Committee which monitored the project and advised on methodology and best practice. A writing team was assembled by Expressions of Interest from Government, Catholic and Independent sectors, including Professional Teacher's Associations WESSTA and GTANSW, as well as expert academics with specialised knowledge of flooding and the Hawkesbury-Nepean Valley. There were multiple drafts and input from a range of experts.

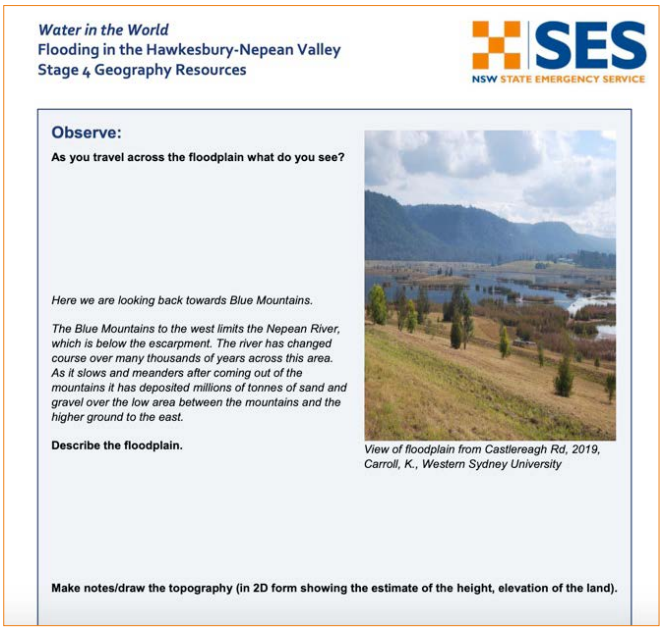
A research and teaching pilot were also conducted in Term 3, and this project engaged 8 schools from within and outside of the Hawkesbury-Nepean Valley. Pilot schools and teachers delivered the teaching and learning packages and commented upon their progress. Student understanding, perception of flooding and natural disaster awareness and preparedness were tested pre and post-teaching, as well as teacher attitudes toward the resources and best practice for delivery. This methodology proved to be highly useful in refining and directing the resource development process and has resulted in some world-class teaching and learning materials, as well as sound pedagogy through Inquiry Based Learning and Problem Based Learning approaches. Preliminary findings of the research are due to be published shortly.

What is in the resource?

The resource is broken into six key areas:

- Flooding in the Hawkesbury-Nepean Valley – which examines historical floods, the bathtub effect, the water cycle and the unique features of the Hawkesbury-Nepean Valley. This section also contains a unit of work that teachers may choose to use or adapt, as well as multiple useful links to other sites and agencies, including maps designed by ESRI specifically to support this resource.
- Geographical Skills Lessons – feedback from teachers reported that students may not necessarily possess strong geographical skills coming into Stage 4, so these lessons can be used as stand-alone lessons to develop geographical skills, or as part of the case study. This section has had very positive responses from preliminary viewings of the resource.
- Fieldwork – a suggested fieldwork trip which incorporates geographical inquiry skills, as well as a model for undertaking quality fieldwork which can be adapted to suit any context.
- Stories of Resilience – this section provides a series of scenarios which offer opportunities for students to consider and debate the best solution for a real world problems, especially around sensible decision making in the event of a flood. This section is highly innovative, and the approach gives teachers and students the chance to consider the complexity of geographical issues, such as land use, natural hazards and risk management in multiple dimensions.
- Cross-curriculum content – *Water in the World* resources have been mapped to the Science syllabus, Mathematics syllabus, English Syllabus and also History syllabus for Stage 4.
- Gallery – the resource gallery contains a library of primary source material, images, graphics and photos, which can be downloaded and form the basis of lessons.

Skills Lesson



Water in the World
Flooding in the Hawkesbury-Nepean Valley
Stage 4 Geography Resources

SES NSW STATE EMERGENCY SERVICE

Observe:

As you travel across the floodplain what do you see?

Here we are looking back towards Blue Mountains.

The Blue Mountains to the west limits the Nepean River, which is below the escarpment. The river has changed course over many thousands of years across this area. As it slows and meanders after coming out of the mountains it has deposited millions of tonnes of sand and gravel over the low area between the mountains and the higher ground to the east.

Describe the floodplain.

View of floodplain from Castlereagh Rd, 2019, Carroll, K., Western Sydney University

Make notes/draw the topography (in 2D form showing the estimate of the height, elevation of the land).

Sample abstract from fieldwork

How to use the resource

All of the resources are free to download in either PDF or Word format. Teachers can take and adapt any resource to suit their situation or geographical context. For instance, there has been considerable interest in this resource from schools in Maitland area, and other regions vulnerable to flood across Australia. Other teachers have noted that students are making connections to both Bush Fires (Stage 3) and other Natural Hazards (Stage 4) broadly moving towards a resilient and more prepared community. The unit of work is detailed and can be adjusted to suit a range of student abilities. The sources and lesson ideas contained in the resource can either accompany the Unit of Work or provide a basis for teachers to develop their own lesson ideas. Teachers who have not been trained in geography may find this resource of particular interest.

Georgie the Geographer

Georgie Animation - Water Cycle

Georgie the Geographer

Georgie the Geographer is an innovative device featured in the resource. Georgie is an avatar of a young person, interested in geography. This character has been used to animate and teach content in a rich and visually interesting manner, and also to present complex ideas simply. The artist, Alex Wegner, has used a vibrant visual recorder style to represent Georgie, and the character engages directly with a young audience. Teachers can use the clips as a stimulus for discussion or inquiry learning. The clips currently in the resource are:

- The Water Cycle
- Weather and Rainfall

Acknowledgment of GTA NSW

Western Sydney University would like to gratefully acknowledge the work of GTA NSW in supporting the development and publication of this important resource. President Lorraine Chaffer was part of the Schools Advisory Committee and a critical friend of the project, also promoting the resource through updates to GTANSW Members.Susan Caldis contributed to the writing and maintained ongoing support from the 2019 conference onwards. GTANSW members also piloted the resource and participated in professional learning events relating to the resource. In 2020 there will be additional events and publication, including conferences and PL, so watch out for updates! Teachers are encouraged to share and give feedback about the resource and how it is being used in classrooms. Please contact the Centre for Educational Research team at Western Sydney University through Dr Kay Carroll, the project lead.

References

Aboriginal account of flooding pre-colonisation:
King, P.G. *Historical Records of New South Wales*, Volume 6 p.61, Governor Phillip Gidley King to Earl Camden, 7 April 1806.

Account of flood debris in early colony:
Hunter, J. *An Historical Journal of Events at Sydney and at Sea 1787–1792*, 1793.

Early agriculture in Hawkesbury-Nepean:
Atkinson, J. *An account of the state of agriculture and grazing in NSW*, London, 1826, p.7.

Infrastructure NSW, Links to key documents:
https://www.hawkesbury.nsw.gov.au/__data/assets/pdf_file/0018/93051/Infrastructure-NSW-Resilient-Valley,-Resilient-Communities-2017-January.pdf
https://flooddata.ses.nsw.gov.au/flood-projects/hawkesbury-nepean-valley-regional-flood-study
http://www.infrastructure.nsw.gov.au/media/2162/ec_insw_hawkesbury-nepean_fss-document_web.pdf

GTA NSW is seeking Expressions of Interest from teachers and other professionals who would like to present at our Annual Conference at ANZ Stadium, Sydney Olympic Park on Thursday 21 and Friday 22st May, AND / OR Saturday 23 May 2020 at Novotel SOP.

The 2020 conference is a three-day event that will feature a mix of presentations and workshops to support the teaching of Geography in K–12.

INVITATION

You are invited to submit an EXPRESSION OF INTEREST on the Conference Website
https://ptcnsw.eventsair.com/2020-gta-conf/expressions-of-interest

Obligations and benefits:

- You will make your presentations available for members on the GTA Website.
- Sessions times are 30 minutes (Saturday Stream 2 only), 60 minutes or 120 minutes (Double session)
- Submissions must match the conference themes
- Teachers in schools receive a 50% discount on their conference registration for the day they present.
- Presenting can be used as self-identified professional learning

CONFERENCE THEMES

Event 1: Geography K–10 (Thursday 21 and / or Friday 22 May)

- Stream 1: ICT Learning Journey: Building ICT capabilities for teachers and students (includes spatial technologies, AR, VR and formative assessment tools)
- Stream 2: Classroom Practice Learning Journey: Building content knowledge and understanding, developing confidence with geographical inquiry skills, tools and fieldwork; creating effective assessments and investigating pedagogies for Stages 4 & 5
- Stream 3: Cross Curriculum Learning Journey: Cross curriculum priorities (Aboriginal, sustainability, Asia) and general capabilities (including literacy, numeracy, critical and creative thinking, civics & citizenship)
- Stream 4: Primary guest presenters on teaching Geography including integrating literacy, numeracy, fieldwork and ICT and cross curriculum units.

Event 2: Geography 11 – 12 (Saturday 23 May)

- Stream 1: HSC Marking practices and skills (Run by GTA NSW & ACT)
- Stream 2: 30-minutes of classroom practice - By teachers, For teachers (topic content, skills, tools, fieldwork, assessment and practical advice relevant

Geography PD Learning Online

A bit over a year ago the GTA launched its first online PD course. Since then, around 100 teachers have contributed to something that has become a superb community resource, full of interesting discussion and lesson ideas.

Here's a link to the course: https://www.openlearning.com/ptc-nsw/courses/geography-101/

Geography 101 - Concepts Part 1 is a 5-hour NESA accredited course on the Open Learning platform. For $90 participants are guided through 3 of the 7 core Geography concepts: Place, Space and Environment.

A key part of the course is that participants contribute posts. These range from quick photos of places they love, to an idea for a "jigsaw" classroom activity about an environment of their choice.

Here are a couple of examples of participant posts:

A special place to you

Share your image and an explanation of it.

"This is a cattle property I lived on. It's near Deepwater on the New England Plateau. We didn't work this land, but it was available to us to raise chickens and vegetables. We kept our horses here and rode these hills, helping with cattle. We watched the boom and bust of high seasonal rainfall and drought. It was scarred with the mistakes of previous generations but rehabilitated in parts with tree plantings and changes in fertilisation techniques and water treatment. Wide open land. A continuing resource and responsibility for the people who love this place."

Deborah Gisela Burkhardt

A jigsaw activity on an environment

Create a setup, and instructions for two sub-groups

Setup: The mountains in the background of this image are part of folklore, an important cultural connection to the environment. The Chilean indigenous cultures have a perception that Atacameño folklore reflects the environment in which it is told.

Sub-group 1: Culture: "Arid, barren and inhospitable", this is a description of the Atacama desert. It seems an unlikely place for early human habitation. Surprisingly, human settlements in the Atacama can be traced back to over 6,000 years ago. Evidence of human activity goes back to more than 10,000 years ago. Known as the Atacameños, or the Licanantay, the descendants of these early settlers can still be found in the region, and form one of the nine recognised Indigenous peoples of Chile.

Students should explore cultural connections to this environment. What are some key features?

Sub-group 2: Economy: The rise of tourism in Atacama has created a new economic opportunity for the people living there. One of the benefits of tourism is that it stops the disintegration of traditional communities. Young people see that they don't need to migrate to the cities to find work because cultural tourism provides a viable means of economic support back in the villages where they came from.

Students should investigate ways that traditional communities support their economies in Chile. How have they achieved this?

After completing their research, individuals from each of the sub-groups would come together to share their findings with each other.

Tamara Cameron

The philosophy behind the course is a "pay-it-forward" approach to sharing. New participants are able to access and comment on all of the wonderful ideas shared by others previously. And their ideas may be commented on by future participants. A neat thing about registration is that it's perpetual - when you get an email notification saying someone has commented on your post, you can hop back into the course and continue the conversation.

The vibe in the course is very positive and welcoming. And that allows teachers to extend themselves in consolidating their understanding of place, space and environment, and how these key concepts can be included in teaching programs.

Here are some comments from participants that demonstrate this vibe:

- "Excellent format & structure. And thanks to all the other participants, your ideas were wide-ranging and inspiring and I'll be using quite a lot of them in my classes."
- "Throughout this course I have reflected on how I incorporate different concepts into my classroom practice. On the whole, it is something I feel more equipped to teach now from a different perspective. I am excited to use some of the activities from this course and get students to think more in depth about what these concepts really mean in geographical settings. It will be a great addition to the first lesson back of the new school year!"
- "As an existing Geography teacher, I feel that I have learnt to better understand the layout of the new syllabus. When you are on a full teaching load, it's easy not to refer back to the syllabus when you have a program in front of you. I think that I better understand the link between the learning outcomes and concepts studied across KLAs and applying learning activities to syllabus concepts."
- "Doing this course has made me realise that I have to make activities relevant to the students I teach so they have more value; the skills become relatable to the environment we live in and the students develop knowledge of issues that they may hear discussed in the community. Because that is what teaching Geography is about - developing (in our students) an interest and concern for the environment they live in."
- "I find programming a creative and technical task, and have struggled with confidently knowing I have developed an effective and engaging geography course. I now feel more technically confident to develop material using this concept based approach."
- "This course has really informed my programming and practice. Looking forward to a course addressing the rest of the concepts."

On that last point, the GTA are very pleased to announce that *Geography 102: Concepts Part 2* is now running. This course continues on from *Geo 101*, covering the remaining 4 core Geography concepts: Interconnection, Scale, Change and Sustainability.

Geo 102 is also 5 hours of NESA accredited PD, and is $90. We look forward to seeing you in the learning community at https://www.openlearning.com/ptc-nsw/courses/geography102/

GTA NSW & ACT Facebook Page is used for major events and the general promotion of Geography at https://www.facebook.com/GTA.NSW/

GTA NSW & ACT has two specific support groups*:

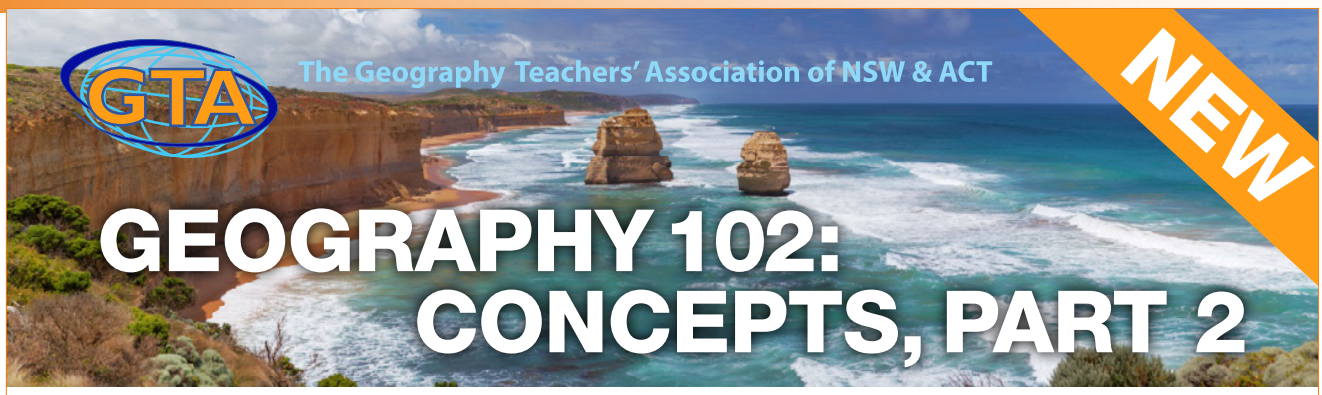
- **Teachers of Senior Geography Group**
  https://www.facebook.com/groups/841307156040600/
- **Primary Geography Teachers Group**
  https://www.facebook.com/groups/194177714663053/?ref=share

* Admission to these groups is on request and requires questions to be answered before approval is given.

Twitter @GTANSWACT

Scoop.it GTANSW and ACT

Instagram Coming soon



A flexible, any where, any time online learning opportunity through Open Learning

Geographical concepts are a foundation for teaching Geography in NSW.

This professional development course, created by Dr. Paul Batten on behalf of the GTA NSW & ACT, examines four the seven key concepts from the Australian Curriculum Geography and NESA Geography Syllabus K–10.

Skills developed in this course include:

- applying knowledge of the content and teaching strategies of Geography to develop engaging teaching activities (NESA Standard 2.1.2),
- participating in learning to update knowledge and practice targeted to professional needs and system priorities (NESA Standard 6.2.2) and,
- contributing to collegial discussions... to improve professional knowledge and practice (NESA Standard 6.3.2).

The course is designed for flexible delivery. Participants can start, progress and finish at times convenient to them. The focus of the course are text and image posts. Participants collaborate in a 'pay it forward' style with other teachers, engaging with previous contributions and creating their own posts, adding to the galleries of exemplars and case studies for future

Cost: $90 – Register at https://www.openlearning.com/ptc-nsw/courses/geography102/
For further information about this course contact – gta.elearning@gmail.com

PARTICIPANT FEEDBACK:

"This is an accessible and easy way to learn and to improve classroom practices."

"Geo 101 is relevant and practical and will definitely add value to student learning."

"The course covers key geographical concepts, incorporates interesting activities that you could easily use in your own classroom, and has the added bonus of learning from your colleagues."

NSW GOVERNMENT

Geography Teachers Association of NSW & ACT, through the Professional Teachers' Council NSW – is endorsed to provide the NSW Education Standards Authority (NESA) Registered Professional Development for teachers accredited at Proficient, Highly Accomplished, and Lead levels.

Completing the **Geography 102: Concepts, Part 2**, on **29 October 2019 – 29 October 2020** will contribute **5 Hours** of NSW Education Standards Authority (NESA) Registered PD addressing 2.1.2; 6.2.2; 6.3.2 from the Australian Professional Standards for Teachers towards maintaining Proficient Teacher Accreditation in NSW.

www.gtansw.org.au • gta.admin@ptc.nsw.edu.au • 02 9716 0378

Geography Syllabus
Citizenship in the media
Is citizenship controversial?

Teaching Citizenship

Louise Swanson, Deputy Principal,
Sydney Secondary College, Balmain Campus

The introduction of Civics and Citizenship

The concept of Civics and Citizenship was first introduced into schools in the late 1990s when junior Geography and History became mandatory subjects as part of a Civics and Citizenship education program to encourage active, informed participation in Australian society and its political processes. At the time, there were concerns about a cynicism towards democratic processes and lack of participation in politics, particularly by youth. The Civics and Citizenship program was seen as a way to encourage active participation in political processes.

Learning across the Curriculum

More recently, with the introduction of the suite of new NSW syllabuses following the introduction of the Australian Curriculum, Civics and Citizenship was again reinstated in NSW, this time as a component of "Learning across the Curriculum". As one of the Learning Across the Curriculum areas it was given the same weighting as the General Capabilities and Cross Curriculum Priorities such as literacy, numeracy, etc.

Civics and Citizenship

> As students engage in learning in Geography, they will develop the knowledge, understanding, skills, values and attitudes for responsible, informed and active participation in Australian society and as global citizens. Students explore ways they can shape their lives, value their belonging in a diverse and dynamic society, and positively contribute at a range of scales. Active citizens support democratic participation, foster individual and group involvement in civil society, critically question existing political institutions and social, economic and political arrangements, and facilitate democratic change.
>
> Students learn to participate in decision-making and to exercise critical judgement about political issues. Comparisons with other civil societies enrich their understanding of the nature of democracy in Australia and in other countries. Students examine the role of citizens in the context of government systems and institutions as well as political and social life in Australia and other countries.
>
> NESA, K–10 Geography syllabus

Citizenship Content

Citizenship and political involvement have long been part of the Geography syllabus. The previous Geography syllabus incorporated citizenship-related content and teachers regularly included activities related to political involvement. For example, in Year 10 students were encouraged to propose actions to promote sustainability, social justice and equity as part of "Active Citizenship". Letter writing and protests were key features of the course content, and found in most of the text books and online resources at the time.

The current syllabus has explicit links between Geography, citizenship and political processes and emphasises the active role that participants can take. In Stage 4, the Landscapes and Landforms topic allows students to examine the responses of individuals, groups and governments to a geomorphic hazard/ disaster. The Place and Liveability topic allows students to conduct an assessment of the role of governments, non-government organisations, communities and individuals in enhancing liveability, but it is a dash point, rather than a dot point is as such not a mandatory part of the topic. In the Water In The World topic, students can conduct an assessment of strategies used to overcome water scarcity and the role of government, non-governments organisations, individuals and communities in sustainable water management. In doing so students can explore the responsibilities of

different levels of government. The topic also includes students proposing individual actions contributing to water management. It also allows students to examine the responses of individuals, groups and government to the impact of an atmospheric hazard/disaster. The Interconnections topic allows students to explain the responses of governments, groups and individuals to minimise the effects of production and consumption.

In Stage 5 in Changing Places, students propose ways for individuals and communities to contribute to a sustainable urban future, and in Environmental Change and Management, students propose how individuals could contribute to achieving environmental sustainability for the environment studied in each country.

What are the causes and consequences of change in environments and how can this change be managed? A key inquiry question in Stage 5: Environmental Change and Management (NESA, K–10 Geography syllabus)

Biodiversity and climate change

Photo: Shutterstock

Citizenship in the media

Encouraging students to be active citizens can gain positive attention for students and schools when it involves students commemorating, re-enacting or honouring past events, for example student involvement in ANZAC Day ceremonies, and activities closely related to the study of History. However, active citizenship in contemporary issues, more closely associated with the study of Geography, can be contentious and gain negative media attention. There are positive perceptions when students are involved in fairly controlled meetings or focus groups regarding urban change or development, but views can shift quickly when students are involved in council meetings, letter writing campaigns or protests (despite those being in the previous syllabus).

There has been recent media attention regarding teaching of topics typically considered as related to citizenship. In the current political climate these are more likely to be considered as "controversial issues". This can be seen most recently in student activism related to climate change. Examples of media coverage include when a primary school was directed to remove two sections of their school newsletter which showcased student work. The showcased work was two letters to the Prime Minister regarding climate change. This was reported in the *Daily Telegraph*. Around the same time, *A Current Affair* ran a program where a parent had pulled his child out of school over "brainwashing" of children regarding climate change. Last month, The Guardian reported that the Prime Minister wanted students to be "less activist" in their protesting against climate change. Beyond Australia, the *New York Times* ran an article in 2018, "Should Schools Teach About Climate Change?"

Controversial issues – Is citizenship controversial?

NSW public schools are guided by the Department of Education's Controversial Issues in Schools policy and our Code of Conduct policy, while religious/independent schools are likely to also have other policies and guidelines determining what is and isn't controversial (e.g. religious doctrine). The department policy does not state that controversial issues can't be covered in class, but does give some guidelines about how to cover them. The policy states that it is a teacher's responsibility to "... ensure that the delivery of curriculum, school programs and activities, presentations and activities by external providers or other events involving students are age appropriate, relevant to curriculum aims and objectives and consistent with the values of public education and the school's purpose and goals."

The department's policy states that once staff identify a controversial issue that they need to "...ensure balanced and reasonable consideration of various viewpoints occurs in the delivery of curriculum, school programs and activities, in presentations to students by visitors, staff, contractors or external providers and on school excursions." In other words, when teaching an issue like climate change, or a controversial urban development, teachers are meant to provide a range of viewpoints about the issue.

Age appropriateness

Recent media attention has questioned whether it is appropriate for students to be studying topics such as extinctions or climate change and related personal actions to address them at primary school. These topics could be covered in multiple places in Geography in

primary school (for example in Stage 3 Factors that Shape Places topic). The NSW Geography syllabus is based on the Australian Curriculum which was signed off by ministers from each state in 2013. Both the Australian and NSW syllabus had many rounds of consultation, at which point any of those issues could have been removed, but weren't.

Climate change and extinctions could be covered in the Key Inquiry Questions in Stage 3 (see below) "How do people influence places and the management of spaces within them?" A range of other issues would also be addressed such as farming, land clearing, and settlements, but other more controversial issues such as climate change and extinctions are equally valid.

KEY INQUIRY QUESTIONS

- How do people and environments influence one another?
- How do people influence places and the management of spaces within them?
- How can the impact of bushfires on people and places be reduced?

Geography syllabus content such as extinction has the potential to be controversial.

Source: Shutterstock

If students choose to apply their knowledge and participate in practical activities to address an issue they are both addressing the content, and addressing the Civics and Citizenship Learning Across the Curriculum area.

Relevant to curriculum

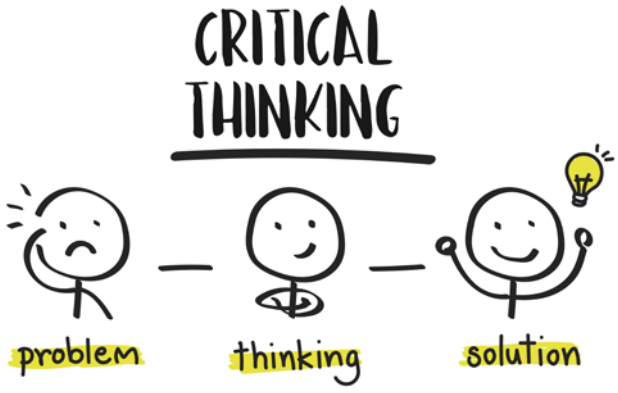
As addressed above, Citizenship is one of the Learning Across the Curriculum areas and relates to Geography course content in a number of topics. When teaching a case study or issue that requires students to consider actions that can be taken to address it, the key is to ensure that a balanced perspective is taught and that a range of viewpoints explored. This enables students to develop empathy, understand the actions of different stakeholders in an issue and understand why people take the actions that they do.

The main purpose is for students to walk away with the capacity to critically analyse what they read about a topic and to be able to make informed decisions. However, a certain amount of myth de-bunking is just as necessary as looking at a range of perspectives. Students come to school with a range of views that they have heard at home or in mainstream media which may not be based in fact, or which are highly emotive. The role of the teacher is to explore these views in a may that respectfully emphasises the logic and evidence-base behind the views explored in class.

Consistent with school's values

An assessment of whether certain learning activities related to citizenship are considered controversial must take into account the values of the school or school system. In NSW public schools the core values are: integrity, excellence, respect, responsibility, cooperation, participation, care, fairness and democracy. Independent or Catholic systemic schools may have values such as equity, fairness, social justice, service, etc. Active citizenship, political action and engagement in democratic processes are means to embody these values and actively demonstrate their meaning and significance in a practical sense.

Investigating issues develops critical and creative thinking capability.



Source: Shutterstock

Core values of schools can be embodied in citizenship education.

Source: Shutterstock

Importance of Citizenship

Over time, public perceptions about teaching citizenship, particularly aspects related to active engagement in political processes and contemporary issues by young people has shifted, and is getting more negative attention from the media and politicians. In any school it is not unusual for there to be regular conversations about what is and isn't acceptable, controversial, sensitive, etc. Different school communities and school systems will have different views on what is acceptable. As well, society and the students we teach are always changing, and what was acceptable some years ago, might not be ok now. Conversely what was considered controversial once, may be central to a syllabus now. Despite this, citizenship is a key component of the NSW syllabuses and has been for many years. Fostering student involvement in democratic processes is a cornerstone of building an active and engaged community with the ability to shape our future communities, cities, country and world.

About the Australian Geography Competition

- *Open to students from Year 7 to Year 12*
- *Certificates of recognition for all participating students*
- *Major prizes for highest scoring students*
- *16 high performing Year 11 students invited each year to Geography's Big Week Out*
- *Four students chosen to represent Australia at the International Geography Olympiad each year*

2020 Competition dates: Wed 18 March to Wed 1 April – competition entry details and further information at – www.geographycompetition.org.au/

GOING GLOBAL

Why is teaching for global citizenship important and how do we foster a sense of global citizenship in our classrooms?

Alex Pentz, Roseville College

"A global world puts unprecedented pressure on our personal conduct and morality. Each of us is ensnared within numerous all-encompassing spider webs, which on the one hand restrict our movements, but at the same time transmit our tiniest jiggle to faraway destinations. Our daily routines influence the lives of people and animals halfway across the world, and some personal gestures can unexpectedly set the entire world ablaze." – Yuval Noah Harari, 21 Lessons for the 21st Century

Global challenges are upon us; climate change, food and water security, terrorism, nuclear warfare, inequality and poverty, the threat of large scale wars and religious conflicts, government accountability and transparency, and the rise of artificial intelligence and automation, all of which require global solutions and cooperation. Our students are going to be facing, and leading, these global challenges as they move through life. With the transition to an interdependent world, conceptualisations of citizenship are shifting to become more global, and it is important that educators realign their focus to prepare students to engage and thrive in this new world, not just as active and informed citizens, but global ones too.

Global issues are examined in Geography classrooms every day, which places our subject at the centre of preparing students to be effective global citizens.

Global citizenship is defined by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) as "a sense of belonging to a broader community and common humanity which emphasises political, economic, social and cultural interdependency and interconnectedness between the local, the national and the global" (UNESCO, 2015, p.14). Geography is a subject that is built on looking at issues at a variety of scales, and on building student capacity to understand and positively shape the world around them, and is therefore a natural fit, if not the predominant subject, for building global citizenship capacities in students.

Given that adolescence is the most significant time for civic socialization and identity formation, (Davies, 2005), and that schools are the largest influence on a student's development as a citizen apart from their families, it is crucial that preparing students as global citizens is a priority (Print, Ørnstrøm & Nielsen, 2002; Torney-Purta, Lehaman, Oswald & Schulz, 2001).

Oxfam (2008, p.5) provides an insightful list of the key characteristics of a global citizen, defined as someone who:

- is aware of the wider world and has a sense of their own role as a world citizen
- respects and values diversity
- has an understanding of how the world works economically, politically, socially, culturally, technologically and environmentally
- is outraged by social injustice
- participates in and contributes to the community at a range of levels from the local to the global
- is willing to act to make the world a more equitable and sustainable place
- takes responsibility for their actions."

Effectively preparing students as global citizens goes beyond merely teaching them about the world. Students need to be equipped to act on global issues in tangible and meaningful ways and have the skills to see problems from a multitude of perspectives and ultimately understand the viewpoints of those that are different from theirs. Most importantly, students need to build an identity and sense of belonging that centers on them being part of a 'global whole', with the comprehension that their actions are part of a wider international community that they have a responsibility toward.

The charity group Oxfam, who has developed extensive resources on global citizenship, also provides a helpful framework of the knowledge, skills and values that students need to develop in order to become global citizens who can successfully navigate and solve international issues. The NSW Geography Syllabus 7–12 naturally covers all of the key areas of knowledge which students need to develop, however, the way this content is taught is the key to developing the core skills and attitudes that enable students to think and act globally as responsible citizens.

Figure 1 – Oxfam's Framework on Global Citizenship (2008)

Knowledge & Understanding	Skills	Values and attitudes
Social Justice and equity	Critical & creative thinking	Sense of identity and self-esteem
Identity and diversity	Empathy	Commitment to social justice & equity
Globalisation & Interdependence	Self-awareness & reflection	Respect for people & human rights
Sustainable development	Communication	Value diversity
Peace & conflict	Cooperation & conflict resolution	Concern for the environment & commitment to sustainable development
Human rights	Ability to manage complexity & uncertainty	Commitment to participation & inclusion
Power & governance	Informed & reflective action	Belief that people can bring about change

Four ways to foster global citizenship

Global research points to four key ways in which teachers can effectively foster a sense of global citizenship in their students.

1. Responding to global events

Incorporating current affairs and issues into the curriculum and classroom is an excellent way to foster global citizenship and build students' awareness of international events and issues. Talking about unfolding events, or the news, can be challenging as a teacher, especially if the issues are complex to understand or rapidly changing, however, modelling to students how to become informed on various global affairs, and to grapple with uncertainty, is just as important.

Myers' (2006) research on the practice of social science teachers in the U.S. found that teachers who were able to bring current events as they were happening at local, national and global scales into the classroom increased students' interest in understanding social, political and environmental issues and enabled them to see possible ways in which to contribute to solving them.

Bringing in current affairs also enabled teachers to model the skill of finding accurate information from multiple perspectives on these events to students, and thereby increased students' ability to navigate and understand complex global issues independently through interpreting the news, media and other resources (Livingstone & Markham, 2008; Myers, 2006).

An engagement with news and media through exposure to it, and subsequent discussion of it, has been shown to a key indicator in students' civic engagement in the present and in the future (Shah, Cho, Eveland & Kwak, 2005).

Implementing current events into the classroom can be as simple as adding a 5 minute news spot at the start of the lesson, or teaching content through current affairs as much as possible.

2. Providing opportunities for students to express their views and hear the viewpoints of others

Secondly, teachers need to incorporate multiple perspectives, not just mainstream or nationalistic ones, in order to foster a greater intercultural understanding that is a key part of being a global citizen (MacDonald, 2007). Many of these perspectives or topics, upon which there are a multitude of viewpoints, may be controversial, complex or sensitive in nature. Research has shown that teachers who effectively foster global citizenship competencies in their students are able to navigate and facilitate discussions and debates with students around global news, events, issues and conflicts, whilst modelling to them the skills of listening, reasoning and seeing things from multiple perspectives (Davis, Harber & Yamashita, 2004; Mutz 2002; Mutz & Martin, 2001; MacDonald, 2007; Myers, 2006).

Enabling students to consider other perspectives cultivates empathy and critical thinking, and can also importantly foster communication skills. Students not only need to be able to see the variety of viewpoints on different issues that they learn about in the classroom, but also need to practice communicating their own ideas, and communicating with others to reach possible solutions. An effective way to bring in multiple perspectives on geographic issues is through visible thinking routines such as 'Step Inside' or 'Circle of Viewpoints' where students research and adopt a particular stakeholder's perspective and represent this view in role plays or discussions around the issue that seek to find a solution to the problem presented. Additionally, when holding discussions and debates making student provide evidence and data to support their viewpoints in debates, is a simple but important way to help develop their reasoning and enables them to debate the 'ideas' and not simply just each other's opinions. This can be done by allowing students ample time to research and prepare a fact file before holding a discussion, or through the use of tools such as 'opinionnaires' or 'Chalk Talk'.

3. Tackling the 'tricky' issues

A large part of preparing students for global citizenship is helping students to grapple with complex, controversial and often confronting issues. Research shows that this is typically the area which social science teachers find most uncomfortable and difficult to handle within the classroom (Pew Research Centre, 2003). Many are concerned about backlash, things getting out of heated, or of being labelled as being 'politically incorrect'. However, if handled in the correct manner, incorporating 'tricky' issues into the geography curriculum can have immense benefits for students, particularly in building critical and deep-thinking skills. For many students the geography classroom is the only space where they may be exposed to current affairs, challenging ideas or encouraged to think about and grapple with issues outside of their local vicinity. Our classrooms should therefore be places where students are guided through the process of dealing with controversial topics in a considerate, well-reasoned and thoughtful manner – it might just be the only time students are taught how to navigate complex current issues, uncertainty over the future and conduct themselves in respectful debate.

Teachers have the opportunity to model to students to tackle challenging concepts and ideas, and how to investigate delicate topics in a mature manner by bringing such topics into the classroom. Tricky topics can be presented in a balanced and objective way by getting students to focus on the evidence and facts that exist on both sides of a topic, rather than just focusing on the emotions or opinions present through thinking routines such as 'Tug for Truth'. Additionally, for particularly sensitive topics presenting and engaging with different perspectives through carefully selected videos, media articles and opinion pieces rather than student debate or independent research can allow many different viewpoints, and potentially confronting material, to be included in a measured way that is appropriate for where students are at. When teaching on these topics it is often important to communicate to students that they are not being asked to 'pick a side' or necessarily form their own opinion on the matter, but that the objective is to simply develop in their understanding of the impacts, ramifications, causes and multiple perspectives associated with the topic.

4. Providing opportunities for students to act on global issues

Finally, teachers need to encourage students to act on their learning and give them the opportunity to do so within the classroom, and outside of it. This can be done in a multitude of ways through encouraging students to participate in decision-making and problem-solving processes through projects, simulations and activities in the classroom which has been found to be beneficial in building students' capacity and confidence in navigating their role as global citizens and understanding the political systems and processes (MacDonald, 2007; Peterson & Warwick, 2015). Some examples include hosting model UN sessions or running mock parliamentary sessions based on international affairs, but to can be as simple as helping students to see the link between their own personal actions, and issues on a global scale.

These opportunities also need to allow students to take part in political action that goes beyond the nation state such as writing to the United Nations, petitioning their local politicians to act on international affairs and issues, or fundraising and donating to global non-government organisations (Leduc, 2013; Massey, 2014; Myers, 2006). Additionally, helping students to see how they can take individual or local actions, such as reducing their carbon footprint, to contribute to solving global challenges is also vital.

Conclusion

Geography provides a unique opportunity to effectively equip students for the global futures and problems they face as active global citizens. Greta Thunberg, a young teen climate change activist said that one thing she has learnt this year is that "you are never too small to make a difference". It is our job to help our students to learn the very same lesson. By guiding students to understand complex global issues, tackle tricky issues and work to take action - we can help them to be prepared as global citizens, leaders and change makers.

References

Davies, L. (2006). Teaching about conflict through citizenship education. *International Journal of Citizenship and Teacher Education 2* (1), 17–34.

Davies, L., Harber, C., Yamashita, H. (2004). Global Citizenship Education: The Needs of Teachers and Learners. Centre for International Education and Research, University of Birmingham (UK).

Harari, Y. (2018). *21 lessons for the 21st century* . London: Jonathan Cape.

Leduc, R. (2013). Global citizenship instruction through active participation: What is being learned about global citizenship? *Educational Forum, 77*(4), 394–406. https://doi.org/10.1080/00131725.2013.822038

Livingstone, S., & Markham, T. (2008). The contribution of media consumption to civic participation. The British Journal of Sociology, 59(2), 351–371. doi:10.1111/j.1468-4446.2008.00197.x.

MacDonald, A. M. (2007). *Enacting global citizenship education : Teacher subject-matter knowledge and pedagogy* (Masters Thesis). University of Toronto.

Massey, K. (2014). Global citizenship education in a secondary Geography course: The students' perspectives. *Review of International Geographical Education*, ***4*** (2), 80- 101. ISSN: 2146-0353.

Mutz, D. (2002). Cross-cutting social networks: Testing democratic theory in practice. *American Political Science Review*, 96(1), 111–126.

Mutz, D., & Martin, P. (2001). Facilitating communication across lines of political difference: The role of mass media. *American Political Science Review*, 95, 97–114.

Myers, J. (2006). Rethinking the Social Studies curriculum in the context of globalization: Education for global citizenship in the U.S. *Theory and Research in Social Education, 34*(3), 370–394. https://doi.org/10.1080/00933104.2006.10473313

Oxfam. (2008). *Education for Global Citizenship: A Guide for Schools.* Oxford, United Kingdom: Oxfam.

Peterson, A. & Warwick, P. (2015). *Global learning and education: key concepts and effective practice.* Abingdon, Oxon: Routledge.

Pew Research Center (2003). *Views of a changing world: How global publics view war in Iraq, democracy, Islam and governance, globalization***.** Washington, DC: Author.

Print, M., Ørnstrøm, S., & Nielsen, H.S. (2002). Education for democratic processes in schools and classrooms. *European Journal of Education, 37* (2), 193-210.

Shah, D. V., Cho, J., Eveland, W., & Kwak, N. (2005). Information and expression in a digital age: modeling Internet effects on civic participation. Communication Research, 32,531–565. doi:10.1177/0093650205279209.

Torney-Purta, J., Lehaman, R., Oswald, H. & Schulz, W. (2001). *Citizenship and education in twenty-eight countries: Civic knowledge and engagement at age fourteen***.** Amsterdam: International Association for the Evaluation of Educational Achievement.

UNESCO (2015). *Global citizenship education: Topics and learning and objectives.* Retrieved from http://unesdoc.unesco.org/images/0023/002329/232993e.pdf.

YOUNG PEOPLE and ACTIVISM

Lorraine Chaffer,
Editor GTA NSW & ACT

Image: Permission to use, with thanks to Jo Whitby – https://t.co/9KF0JLPsdh

'We asked young people why they're on climate strike. Here's what they said' was published this month on Brainstorm, a site where the academic and research community in Ireland 'contribute to public debate, reflect on what's happening in the world around us and communicate fresh thinking on a broad range of issues.'

The authors discuss their research into reasons students are choosing to strike on climate change in Dublin. The reasons provided during interviews with students reflect those given by students in Australia and at a global scale.

The article reinforces the importance of Geography as a subject that provides students with the knowledge and skills to navigate global challenges such as climate change.

We asked young people why they're on climate strike. Here's what they said

Anna Davies and Stephan Hugel, Trinity College Dublin

On reasons for activism

'Analysis: they don't trust politicians, want more education on climate change and are frustrated at how hard it is to live a low-carbon life'.

'There was incredulity about the slow pace of change, a disbelief that more was not being done and disgust that their voices and futures were being blatantly disregarded'.

'Knowing the facts of climate change was important to the young people we spoke to, but many of their concerns went beyond this. There was a clear desire to understand what kind of changes the climate crisis will cause, while others wanted to know more about the damage which has already been done to the planet'.

On the place of Geography in the school curriculum

'Where else in the curriculum do students get to study how natural and social systems interact? More than just having access to information, the march participants wanted to be able to take ownership of knowledge and skills in order to navigate the climate crisis; to be empowered.'

Read the full article here –
www.rte.ie/brainstorm/2019/1204/1097205-we-asked-young-people-why-theyre-on-climate-strike-heres-why/

Investigate youth activism using the following sources

'Exploring youth activism on climate change: dutiful, disruptive, and dangerous dissent' discusses youth dissent toward economic, social, and environmental policies and practices that contribute to climate change.

'The clock is ticking, and the future for young people today will be largely decided by generations that will be gone before the most severe impacts of climate change are felt. Dutiful, disruptive, and dangerous dissent represent three complementary and mutually reinforcing pathways for youth to express dissent, agency, and influence over their future'

https://ecologyandsociety.org/vol23/iss3/art42/

'Young people are leading the fight against climate change, in efforts and attitudes' examines the concerns about climate change in different age groups, highlighting the high proportion of young people compared to older Australians.

"The Climate of the Nation report, released today, shows 83 per cent of 18–34 year olds are concerned about climate change, compared to 67 per cent of people aged 55 and older".

https://www.abc.net.au/triplej/programs/hack/young-australians-attitudes-towards-climate-changes/11493486

School Strike. Source: https://upload.wikimedia.org/wikipedia/commons/5/57/Kate_strike-12_%2848767322511%29.jpg

'Why young climate activists have captured the world's attention' proposes that adults are taking notice out of concern for their children's future.

'From Jakarta to New York City, children and teenagers are walking out of class and marching in the streets to demand action on climate change. And the world is taking notice. Communications experts say these young climate activists are using their moral authority as children, and their social-media savvy, to surf a rising tide of adult concern.'

'Because young climate protestors don't represent someone else's agenda, their message is strikingly direct and unvarnished. "They can say a lot of things that older activists can't say," says Matthew Nisbet, who studies environmental communication at Northeastern University in Boston, Massachusetts. "They don't have careers yet. They don't have filters that adults might have.'

https://www.nature.com/articles/d41586-019-02696-0

'Youth activism is on the rise around the globe, and adults should pay attention'.

'There is a stubborn resistance to treating young people's political activism as normal, but the truth is that it's neither extraordinary nor exceptional," she said. "Children and youth are not on the sidelines. They are protagonists in the fight for their rights and their wellbeing.

https://news.ucsc.edu/2019/09/taft-youth.html

References

Davies, Anna and Hugel Stephen. We asked young people why they're on climate strike. Here's what they said. Retrieved Dec 8, 2019 from /www.rte.ie/brainstorm/2019/1204/1097205-we-asked-young-people-why-theyre-on-climate-strike-heres-why/

Watson, Joey and Slee, Amruta (2019). Why these Australian students will strike for climate change action. Retrieved Dec 8, 2019 from https://www.abc.net.au/news/2019-03-14/australian-school-students-why-theyll-strike-for-climate-change/10892920

O'Brien, Karen & Selboe, Elin & Hayward, Bronwyn. (2018). Exploring youth activism on climate change: Dutiful, disruptive, and dangerous dissent. Ecology and Society. 23. 10.5751/ES-10287-230342 retrieved Dec 8, 2019 from https://ecologyandsociety.org/vol23/iss3/art42/

The Lancet. Vol 393, Issue 10183, P1774, May 04, 2019. Retrieved Dec 8, 2019 from https://www.thelancet.com/journals/lancet/issue/vol393no10183/PIIS0140-6736(19)X0019-7

Nature **573**, 471-472 (2019) Retrieved Dec 8, 2019 from https://www.nature.com/articles/d41586-019-02696-0

McNulty Jennifer, (20190 Youth activism is on the rise around the globe, and adults should pay attention, says author. Newscentre, University of California. Retrieved Dec 8, 2019 from https://news.ucsc.edu/2019/09/taft-youth.html

CARING ABOUT CLIMATE CHANGE: GLOBAL CITIZENS and MORAL DECISION MAKING

Laura D'Olimpio, Lecturer in Philosophy, University of Notre Dame, Australia

From: The Conversation 2015

Image: Global citizens care about the earth we share with others. Shutterstock.

In a recent cogito blog post, Clive Hamilton claims that the greatest crimes of recent years will surely prove to be human interference with and disruption of the Earth's climate. He writes, "Above all, in denying the evidence or failing to take action commensurate with the known danger, these individuals have been violating their duty to the truth." I wholeheartedly agree. Of course, figuring out what to do next is a complicated matter.

Debate is swirling as to what kind of climate change policy the political parties will come up with that will be supported by the general public. Yesterday, Michelle Grattan noted that,

This week's Essential poll found 53% thought Australia was not doing enough to address climate change; only 28% said Australia was doing enough. The picture would change once people were faced with the costs of change, but still this does indicate that many people would be open to more action if a policy was well put together and effectively communicated.

The language of the climate change debate is often centred on cost and on power. By 'power' I mean more than one sense of the word. Power refers to the power sources we are using, and the prospect of future power sources based on renewable energy sources, as well as political power and economic power (which influence one another).

Perhaps I am being idealistic, but it would be nice if the climate change debate could focus on ethics, moral decision making, and future peoples who will be affected by decisions and policies made today. If the debate was cast in these terms, the politicking would look very different. Partly because to truly take climate change seriously we must think globally as opposed to simply from a Nationalistic perspective.

Some important moral considerations have been highlighted within the Kyoto protocol. The Kyoto protocol outlines an obligation for every nation, particularly rich nations, to act on climate change, fund relief, invest in alternative energy sources, and provide solutions to displaced persons as a result of climate change. However, action on climate change is driven by the government and politicians, which often results in weak and ineffectual policy.

There is a need to prioritise moral considerations which include social implications of climate change alongside economic and political concerns. One way to achieve this is to see ourselves as 'global citizens' which highlights the need for collaborative and cooperative action.

Seeing ourselves as global citizens involves realising that we all live on and share planet Earth. This involves a shift in our moral perspective whereby we care about others we have never met in countries we have never visited. Being a global citizen involves focusing on what we have in common rather than on our differences.

Due to our technology, we are more connected than ever before. If we seek to educate new generations to think about themselves as global citizens, they will see the benefits of communal global action that may protect our planet. It may also further encourage the idea that we can live harmoniously with others who are different to ourselves.

The Media's depiction of the Climate Change debate

The Australian journalistic media's eagerness to display 'both sides' of the story has historically resulted in an unfair balancing of opposing views whereby climate deniers were given an equal footing with scientists who argue that we have ample evidence for human causation of global warming. These deniers make up less than 5% of the scientific community.

Scientists and commentators have started making better use of the media in order to effectively communicate scientific findings. The blog Climate Progress, edited by Joe Romm, seeks to dispel fallacies presented in media reports on climate change. Climate Progress was named one of the 25 'Best Blogs of 2010' by Time magazine. As intelligent blogs and other sites (like The Conversation) gain popularity and accolades, awareness increases of the need to engage critically with news reports.

Similarly, Professor Stephan Lewandowsky, a behavioural psychologist, initiated the website Shaping Tomorrow's World, which encourages discussion of the challenges facing solutions to climate change. Lewandowsky also supports critical engagement with ideas, further evidenced by the fact that he and co-author John Cook have made their book, *The Debunking Handbook* available for free download.

How we talk about and report on climate change is important. Having the debate is vital and the conversation must be inclusive and accessible. By discussing the ethical considerations alongside modelled predications of the impacts of climate change and supporting an inter-disciplinary approach to the problem, we can situate the debate within a real-world context. If people can link statistics and data to their own moral responsibility as global citizens, this can be used to support policies that are practical as well as moral.

One World: the ethical obligation to consider ourselves as global citizens

We simply cannot afford to remain in a Nationalistic *modus operandi*. In his book One World: the ethics of globalisation, Peter Singer claims we must move towards a sense of unity through globalisation, understanding the world ethically as one 'place'. The shift from a Nationalistic perspective to a global one involves changing the way we think about ourselves as well as our moral obligations. This isn't easy, but it should be done.

Likewise, if there is to be policy changes that look to long term solutions for climate change, there must be public pressure on governments. This requires the general public to understand the ethical implications of the climate change debate. Thus, the debate must be practical, contextual, as well as moral.

Placing reliable scientific information within a 'real world' framework would enhance general understanding. Scientific facts are not immune to ethical and social considerations. In an optimistic view, as Naomi Klein and non-profit NGOs such as Oxfam and CARE Australia point out, the solutions to climate change issues could also be the solutions to poverty and widespread inequality as the world starts to work together as a global unit. Moral philosophers would surely agree that maximising benefits for all people includes preventing widespread injustices to the poor and developing nations who have done the least to deserve the severe adverse impacts of climate change which have already begun.

The grim warnings are a reality. 'Act now' is not hyperbole. By identifying ourselves as global citizens with an obligation to every other person, as opposed to simply those in our own countries, we can make a psychological shift which has moral and social, economic and political ramifications. Any realistic solution to climate change must be inclusive and holistic.

This article was originally published on The Conversation.
https://theconversation.com/caring-about-climate-change-global-citizens-and-moral-decision-making-44771

A learning experience that makes a difference

The Big Issue Classroom is a unique educational experience offering students the opportunity to hear first-hand from people who have experienced homelessness. The engaging and entertaining sessions help to breakdown stereotypes surrounding disadvantage in our community. The one-hour workshops are linked to the Australian Curriculum and tailored to suit primary and secondary students. Interactive online eClassroom sessions are also available. Better still, every workshop booked provides paid work for a homeless or disadvantaged Australian.

Canberra | Sydney | Melbourne | Online

THE BIG ISSUE CLASSROOM

RELEVANCE TO GEOGRAPHY Levels 7 to 10

	COURSE CONTENT DESCRIPTIONS	THE BIG ISSUE CLASSROOM 'DISCUSSIONS OF HOMELESSNESS AND DISADVANTAGE'
Place and Liveability	The factors that influence the decisions people make about where to live and their perceptions of the liveability of places **(ACHGK043)** The influence of accessibility to services and facilities on the liveability of places **(ACHGK044)** The influence of social connectedness, community identity and perceptions of crime and safety on the liveability of places **(ACHGK046)** The strategies used to enhance the liveability of places, especially for young people, including examples from Australia and Europe **(ACHGK047)**	Understand factors that cause homelessness, and discuss liveability of places with regard to different forms of homelessness Hear how the guest speaker's homelessness had an impact on their social connectedness and community identity, how their access to services and facilities shaped their experience of the liveability of places Explores the implications of homelessness for the wellbeing and liveability of cities, towns and regional areas. Introduces students to The Big Issue's enterprises which seek to improve human wellbeing and the liveability of places in Australia through work and sporting opportunities
Changing Nations	The management and planning for Australia's urban future **(ACHGK059)**	Explores homelessness as an urban challenge and the potential of social enterprise to be a positive development in Australia's urban future
Geographies of Interconnections	The perceptions people have of place, and how this influences their connections to different places **(ACHGK065)** The way transportation and information and communication technologies are used to connect people to services, information and people in other places **(ACHGK066)** The effects of people's travel, recreational, cultural or leisure choices on places, and the implications for the future of these places **(ACHGK069)**	Learn how the experience of homelessness can influence individuals' perceptions of place Guest speakers can comment on their experience with transportation and ICT during their experience of homelessness Guest speaker stories present new perspectives on our urban and rural landscapes
Geographies of Human Wellbeing	The reasons for and consequences of spatial variations in human wellbeing in Australia at the local scale **(ACHGK080)** The role of international and national government and non-government organisations' initiatives in improving human wellbeing in Australia and other countries **(ACHGK081)**	Consider how place can impact on a person's capacity to feel socially connected and supported Research ways in which government and non-government organisations such as The Big Issue can improve human wellbeing locally and internationally

CONTACT | Netta Shmerling | Coordinator – The Big Issue Classroom | Canberra Sydney Melbourne Online
03 9663 4533 | classroom@bigissue.org.au | **www.thebigissue.org.au**

THE BIG ISSUE CLASSROOM

Source: Shutterstock

SUSTAINABILITY ACTION PROCESS

A scaffold for investigating sustainability

Lorraine Chaffer
Vice President & Editor GTA NSW & ACT

In the NSW Geography curriculum sustainability is a Cross Curriculum Priority and one of seven key Geographical concepts.

"Learning for sustainability seeks to enable and empower students to make decisions and take actions that contribute to creating a sustainable society and ecosystem"

Source: https://www.sustainableschoolsnsw.org.au/teach/teaching-sustainability-cross-curriculum-priority

Students benefit from the structured approach provided by the Sustainability Action Process, a scaffold for investigating real world sustainability issues and developing skills in authentic problem solving.

There are five steps in the **Sustainability Action Process** (SAP) designed to build student knowledge and understanding and develop skills needed to confidently propose and take action.

Step 1: Make a case for change

Step 2: Explore

Step 3: Plan

Step 4: Act

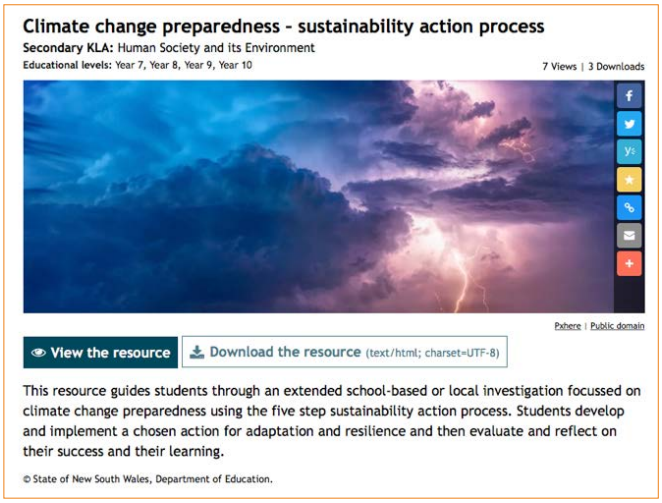
Step 5: Reflect and evaluate

The Sustainability action process can be found on the following websites:

- the NSW Department of Education website under Learning across the curriculum – Sustainability https://education.nsw.gov.au/teaching-and-learning/curriculum/learning-across-the-curriculum/sustainability/sustainability-action-process
- the Sustainable Schools NSW website https://www.sustainableschoolsnsw.org.au/teach/teaching-sustainability-cross-curriculum-priority

There are resources for investigating sustainability issues for several geographical concepts and topics including Climate Change Preparedness, Biodiversity, Energy and Water.

SAP Example 1: Climate Change Preparedness (Geography Stage 5)

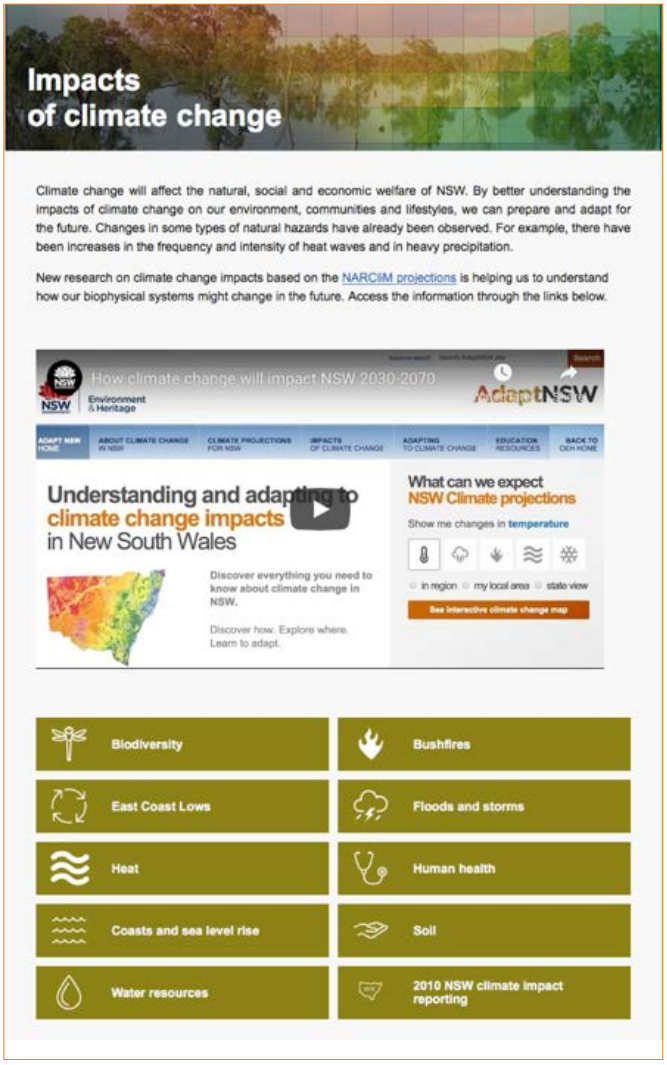


Source:https://app.education.nsw.gov.au/rap/resource/access/700e9ecf-86f1-4d25-90e0-6638684eb660/1

SAP Example 2: Biodiversity

Examples of SPaRK (Shared Practice and Resource Kit) resources using the Sustainability Action Process for Geography and Science.

- **SPaRK – The Curious Garden** (Geography Stages 1, 3 and 4)
  'How can we care for and improve our spaces and places?' using the picture book *The Curious Garden* https://education.nsw.gov.au/teaching-and-learning/professional-learning/scan/past-issues/vol-37/spark-the-curious-garden
- **SPaRK – NSW Ecosystems On Show** (Geography and Science Stages 2 and Stage 5 geography and science using the NSW ecosystems on show resource. https://education.nsw.gov.au/teaching-and-learning/professional-learning/scan/past-issues/vol-37/spark-nsw-ecosystems-on-show



"The climate in NSW is changing and as a result communities and environments are at risk to the many impacts of climate change.'

'Students will work through the steps in the sustainability action process to investigate the science of climate change, the risks facing their local community and local environment and take action to adapt and become more resilient to a changing climate."

The resource is a complete package that contains links to resources needed by students to complete their learning.

Source https://sites.google.com/education.nsw.gov.au/climatechange-preparedness/home

The following article by Gaye Braiding is a SPaRK (Shared Practice and Resource Kit) is based on the resource NSW ecosystems on show referred to above. Gaye shares teaching ideas for Stage 2 and Stage 5 Geography and Science and demonstrates the application of the Sustainability Action Process to an issue linked to biodiversity.

Source: Shutterstock

SPaRK – NSW ECOSYSTEMS ON SHOW

What are the systems within ecosystems?

Gaye Braiding
Field of Mars Environmental Education Centre
NSW Schoolhouse Museum of Public Education

This article was originally published in *Scan*: Braiding, G. (2018). SPaRK – NSW ecosystems on show. *Scan 37*(6).
Note: The Editor has inserted additional images and headings into this article

RESOURCE OVERVIEW

NSW Ecosystems on Show by NSW Department of Education (2018)

Showcasing fourteen natural ecosystems and one urban ecosystem in New South Wales, ***NSW ecosystems on show*** is an interactive resource that supports teaching and learning in science and geography. Each ecosystem is introduced by an overview of its characteristics, climate, plants and animals. Further tabs outline the significance of the ecosystem to animals, people and the environment, and describe strategies for its conservation and protection.

When used in Google Chrome, a Google Earth link takes users to an example of each ecosystem, positioning them within a photo sphere for a rich, virtual, immersive experience. Clicking out of Street View delivers a bird's eye view of the ecosystem, its location and surrounding land uses. This, and links to further examples of the ecosystem, enable virtual fieldwork experiences.

For those seeking hands-on fieldwork investigations in the natural environment, the department's widespread network of environmental education centres is featured in the resource. Related reading and other secondary sources are also suggested, and could be used in preparation for, or as follow-up to, the collection of primary data in the field.

Using the resource to build understanding of the functioning of ecosystems enables students to consider and determine personal sustainability actions that contribute to protecting these ecosystems into the future.

EDUCATIONAL SIGNIFICANCE (Curriculum links)

Highlighting the diversity of environments and ecosystems in NSW and their ecological functioning, ***NSW ecosystems on show*** supports the Geography K–10 Syllabus, Science and Technology K–6 Syllabus and Science 7–10 Syllabus. It strongly aligns with a systems thinking approach to understanding and working towards sustainability.

With a focus on ecology, the website also supports the Living World modules and strands of the ***Science syllabuses***, particularly assisting investigations into the interdependence of living things. It enables students to use systems thinking and the skills of working scientifically as they explore and observe the interrelated living and non-living components of virtual ecosystems. The structure of the resource models ways in which scientific information can be organised and communicated.

For Stage 2 students investigating the survival of living things, the 'significance' tab for each ecosystem provides information on the interrelationships among and between species and their habitats. Students in Stages 4 and 5 investigating and evaluating strategies for conserving and maintaining sustainable ecosystems will find examples of human impacts, threats and management strategies in the 'conservation' tabs.

From a ***Geography*** perspective, NSW ecosystems on show enables students to acquire information through a variety of geographical tools including photographs, virtual maps, satellite images and web tools. With an emphasis on the characteristics of and interconnections within each ecosystem, the resource reinforces the geographical concepts of place, space, environment, interconnection and sustainability. In particular, it supports the ***Geography K–10 Syllabus focus areas: The earth's environment (Stage 2) and Environmental change and management (Stage 5***). It could also support Features of places (Stage 1) and Factors that shape places (Stage 3).

At a glance, the website's landing page provides Stage 2 students with a snapshot of different environments and the diverse natural characteristics of Australia. Students could select several of the ecosystems to compare their climate, vegetation and animals. For deeper investigations into the significance of environments, students could use one of the featured ecosystems as a case study.

For Stage 5 students investigating the functioning, role and importance of natural environments in Environmental Change and Management, the resource provides introductory information and an overview of environmental management as a springboard to deeper investigation.

SUGGESTIONS FOR USING THIS RESOURCE

As a class, view an ecosystem in ***NSW ecosystems on show*** and make connections using text-to-self, text-to-text and text-to-world strategies. For example, ask questions such as:

- Have you seen environments like this?
- Have you visited a place like this?
- Have you seen photographs, documentaries or social media posts of places like this?
- Have places like this been in the news recently?
- How are places like this being used?
- What issues are you aware of relating to places like this?
- Does this information remind you of other information, websites or books you have accessed previously? See References and further reading for related picture books.

Define the words 'system' and 'ecology', then define 'ecosystem' as an 'ecological system'. Highlight and define terminology relating to systems such as 'relationships', 'interrelationships', 'interactions', 'interdependence' and 'interconnections'. Use images in the resource to provide examples, for instance the image of beetles feeding on blossoms in the sclerophyll forests – Sydney ecosystem.

Provide time for students to personally explore the resource using computers or mobile devices. Students use a Y-chart to identify something that was new knowledge, something that generated an emotive response, and a link they found interesting.

Focussing on interconnections and interdependence, students record any questions which emerge as they

browse through the resource. These can be used to generate a set of inquiry questions for a scientific or geographical investigation.

TEACHING ACTIVITIES

STAGE 2 GEOGRAPHY

What are the natural characteristics of Australia?

Working in Google Chrome, students explore the ecosystems in ***NSW ecosystems on show*** and view the images within each tab. They select the Google Earth link to view a photo sphere of each environment at the personal scale. Students then select the yellow figure to view the area at a local scale, and the minus icon to zoom out to a regional scale.

Using Google My Maps, students plot the locations of the featured ecosystems. They add photographs and labels to each site.

Geography: The Earth's Environment

A student:

- examines features and characteristics of places and environments GE2-1
- acquires and communicates geographical information using geographical tools for inquiry GE2-4.

Content
Different environments

Students investigate the natural characteristics of Australia and a country in Asia (ACHGK020), for example: comparison of climate, natural vegetation and native animals

STAGE 2 GEOGRAPHY AND SCIENCE

How does the environment support the lives of living things?

How are they interdependent?

Plan a field trip to a nearby natural area for a geographical and scientific investigation. This can be organised through one of the department's environmental education centres or managed independently.

Pre-fieldwork

As a class, using Google Earth in Google Chrome, view a satellite image of the natural area to be visited. Select the yellow figure to view the Street View level. Using NSW ecosystems on show as a reference, determine the ecosystem type and identify the plants and animals it may support.

Create a mind map to show the potential interconnections between:

- plants and animals. For example, plants as food, plants as shelter
- plants and animals and the non-living features of the environment. For example, plants growing in soil, tadpoles in a pond, plants providing oxygen
- people and the living and non-living features of the environment.

Formulate a set of inquiry questions to guide the fieldwork investigation.

Fieldwork

Plan data recording activities with a focus on interconnections and interdependencies between living things and the environment. Fieldwork activities should include sensory observations, time for exploration and creative ways of recording observations using a variety of media. Suggested fieldwork activities include:

- taking photographs of natural living and non-living features of the environment, human features and examples of interactions, such as a water dragon sunbathing on a tree branch or rock
- constructing field sketches that identify and position human and natural features
- creating labelled scientific drawings detailing specific habitats, such as a habitat tree, rock pool or rotting log
- recording natural and human sounds using a sound map
- hunting for invertebrates using sampling techniques such as sifting through leaf litter, shaking shrub branches onto a mat and dip-netting in ponds
- observing and recording evidence of animals using the environment, such as parrots using tree hollows, termite nests on tree trucks, nests and diggings in the soil
- reflecting on personal experiences and perceptions of the environment as student investigators and visitors.

Source: https://schoolsequella.det.nsw.edu.au/file/6fccb196-b448-40b3-abd8-64dc662b8079/1/NSWEcosystems.zip/LOs/dry-sclerophyll/index.htm

Post-fieldwork

Tables, annotated photo collages and maps could be used to organise and present the components of an ecosystem and some of the interconnections observed. Supplementary information could be acquired from NSW ecosystems on show and other secondary sources to identify relationships and connections.

Students construct mind maps to show the interactions within the ecosystem. With plants in the centre, students insert animals that rely on the plants and use arrows and labels to identify the relationships. Students also include non-living features of the environment. As evidence of knowledge and use of systems thinking, students verbally explain some interdependencies illustrated in their concept map. They start to consider actions they could take which conserve and protect the sustainable functioning of ecosystems.

Students select an ecosystem for independent research using NSW ecosystems on show as a source. In groups, students share their information and identify similarities in interrelationships across ecosystem types.

Geography: The Earth's Environment

A student:

- examines features and characteristics of places and environments GE2-1
- describes the ways people, places and environments interact GE2-2
- acquires and communicates geographical information using geographical tools for inquiry GE2-4.

Content:
Significance of environments

Students investigate the importance of natural vegetation and natural resources to the environment, animals and people (ACHGK021, ACHGK022, ACHGK024), for example:

- identification of types of natural vegetation, for example forests, grasslands, deserts
- explanation of the importance of natural vegetation to animals and the functioning of the environment, for example provision of habitats, production of oxygen.

Science: Living world

A student:

- questions, plans and conducts scientific investigations, collects and summarises data and communicates using scientific representations ST2-1WS-S
- compares features and characteristics of living and non-living things ST2-4LW-S.

Content
Survival of living things

Students describe how living things depend on each other and the environment to survive (ACSSU073, SysT), for example:

- bees and flowers
- birds eat and disperse seeds.

Snow Gum Eucalyptus pauciflora. Tatters | CC BY-NC-ND 2.0
Source: https://schoolsequella.det.nsw.edu.au/file/6fccb196-b448-40b3-abd8-64dc662b8079/1/NSWEcosystems.zip/LOs/alpine/index.htm

STAGE 5 GEOGRAPHY AND SCIENCE

How can environments be sustainably managed?

As a stimulus, view the dune photograph (within the 'Conservation' tab) showing various management strategies used to restore a coastal dune ecosystem. Note the accompanying list of 'current management issues' for coastal dunes in the Illawarra region of NSW.

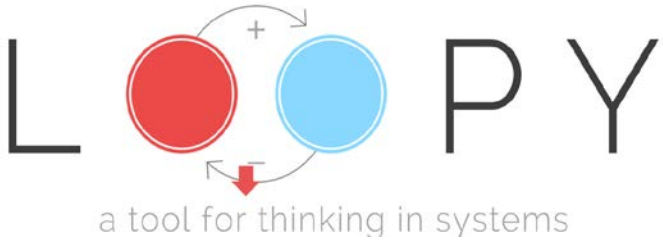
Using a jigsaw strategy, students use NSW ecosystems on show to consider a selection of the available ecosystems, determining their significance and identifying conservation issues and management strategies. Students discuss similarities and differences in threats and approaches to conservation of ecosystems.

For one or more selected ecosystems, students summarise their information in a table that lists specific threats and management strategies. Students discuss the immediate and broader impacts of the listed management strategies.

Students undertake fieldwork in an ecosystem, organised through one of the department's environmental education centres or planned independently by the school. Students:

- collect abiotic and biotic data to assess the health of the ecosystem
- identify threats and issues
- record current management strategies.

Following this fieldwork, students use holistic thinking to analyse impacts of management strategies on relationships within the ecosystem and interconnections regionally. Students construct a causal loop diagram that illustrates the impacts of these management strategies. Causal loop diagrams illustrate interconnections and interrelationships and the holistic nature of an ecosystem. Animated diagrams can be created using Loopy, an online tool for systems thinking.



Source: https://ncase.me/loopy/

ACTION FOR SUSTAINABILITY

Students consider ways in which they can take individual or collective action to contribute towards ecosystem conservation.

Geography: Environmental change and management

A student:

- assesses management strategies for places and environments for their sustainability GE5-5
- acquires and processes geographical information by selecting and using appropriate and relevant geographical tools for inquiry GE5-7
- communicates geographical information to a range of audiences using a variety of strategies GE5-8.

Content

Environmental management

Students investigate environmental management, including different worldviews and the management approaches of Aboriginal and Torres Strait Islander Peoples (ACHGK071, ACHGK072), for example discussion of varying environmental management approaches and perspectives.

Using the sustainability action process, students use design thinking and systems thinking to investigate and propose solutions to a local environmental management issue that threatens a local ecosystem, ideally within the school grounds or surrounding area. Informed by their fieldwork and research, students undertake actions that restore or protect the ecosystem and work towards achieving environmental sustainability. Potential actions could include bush regeneration, restorative planting, fencing, signage or a stormwater filtration system.

Science: Living world

A student:

- processes, analyses and evaluates data from first-hand investigations and secondary sources to develop evidence-based arguments and conclusions SC5-7WS
- analyses interactions between components and processes within biological systems SC5-14LW.

Content

LW2 Conserving and maintaining the quality and sustainability of the environment requires scientific understanding of interactions within, the cycling of matter and the flow of energy through ecosystems.

Students evaluate some examples in ecosystems of strategies used to balance conserving, protecting and maintaining the quality and sustainability of the environment with human activities and needs.

Experimenting

Stage 2

Students follow the sustainability action process to improve or enhance biodiversity in an area of the school grounds or local area with a focus on interconnections and relationships between species. Habitat improvement projects could include creating small bird habitat using ground covers and native flowering shrubs, building 'insect hotels', or creating 'lizard lounges' by adding rocks, fallen logs and ground covers to native gardens. The grassy woodland 'Conservation' tab lists suggestions for students to help protect remaining areas of biodiversity.

References and further reading

Carnavas, P. (2010). *Last tree in the city*. Frenchs Forest, NSW: New Frontier.

Case, N. (n.d.). **Loopy**.

Cleave, R. & Tulloch, C. (2015). *Phasmid: Saving the Lord Howe Island stick insect*. Clayton South, Vic: CSIRO.

Crew, G. & Warden, G. (2008). *Cat on the island*. Pymble, NSW: Angus & Robertson.

Freeman, P. & Anelli, L. (2016). *Desert lake: The story of Kati Thanda – Lake Eyre*. Newtown, NSW: Walker Books Australia.

Geography K-10 Syllabus © NSW Education Standards Authority (NESA) for and on behalf of the Crown in right of the State of New South Wales, 2015.

Google. (2018). **Google My Maps**.

Lester, A. & Tulloch, C. (2011). *One small island: the story of Macquarie Island.* Melbourne, Vic: Viking.

Millard, G. & White, A. (2009). *Mbobo tree*. Lindfield, NSW: Scholastic.

NSW Department of Education. (2016). **Sustainability action process: Biodiversity. Years 3-6.**

NSW Department of Education. (2016). **Sustainability action process: Biodiversity. Years 7-10.**

NSW Department of Education. (2018). **Biodiversity.**

NSW Department of Education. (2018). **Environmental and zoo education centres.**

NSW Department of Education. (2018). **NSW ecosystems on show.**

NSW Department of Education. (2018). **Sustainability action process.**

Ramage, J. & Hickman, E. (2008). *Tuart dwellers*. Bentley, WA: Department of Environment and Conservation.

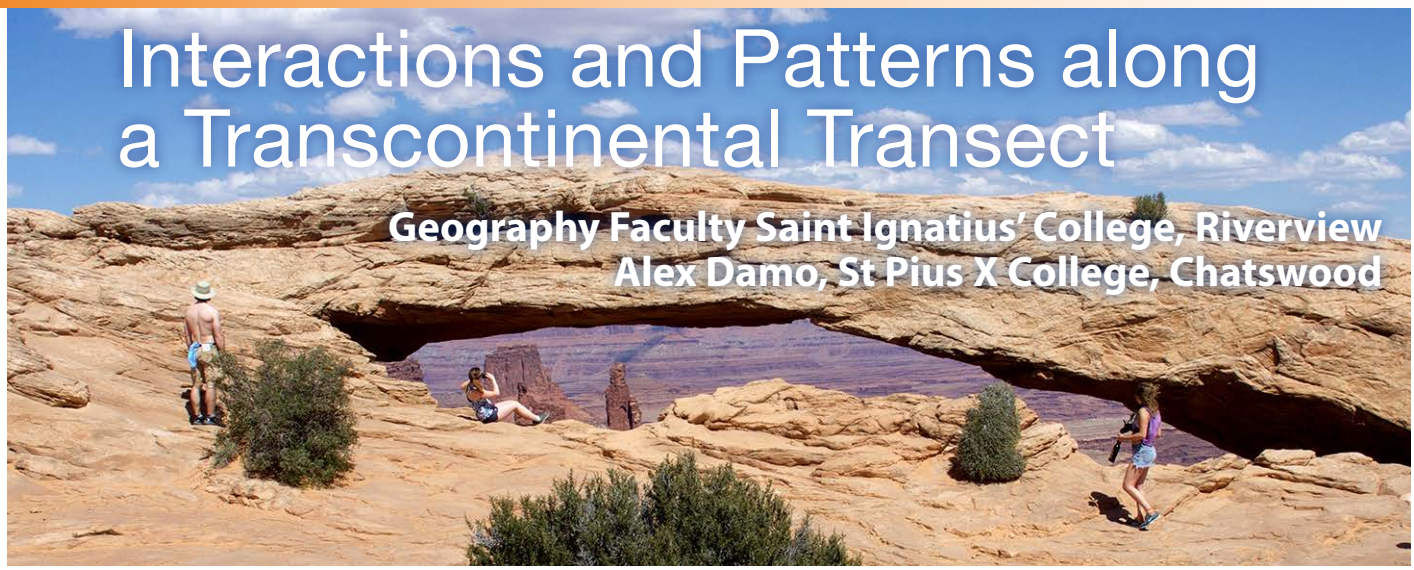
Science and Technology K-6 Syllabus © NSW Education Standards Authority (NESA) for and on behalf of the Crown in right of the State of New South Wales, 2017.

Science K-10 Syllabus © NSW Education Standards Authority (NESA) for and on behalf of the Crown in right of the State of New South Wales, 2012.

Source https://education.nsw.gov.au/teaching-and-learning/curriculum/learning-across-the-curriculum/sustainability/sustainability-action-process

Interactions and Patterns along a Transcontinental Transect

Geography Faculty Saint Ignatius' College, Riverview
Alex Damo, St Pius X College, Chatswood



Canyonlands National Park Photo L Chaffer

Outcomes

GEE5–1 explains the diverse features and characteristics of a range of places, environments and activities

GEE5–2 explains geographical processes and influences that form and transform places and environments

GEE5–3 analyses patterns associated with natural phenomena and human activity at a range of scales

GEE5–4 assesses the interactions and connections between people, places and environments that impact on sustainability

GEE5–5 accounts for contemporary geographical issues and events that impact on places and environments

GEE5–8 acquires and processes geographical information by selecting and using appropriate and relevant geographical tools for inquiry

GEE5–9 communicates geographical information to a range of audiences using a variety of strategies and geographical tools

Key Concepts

Place, space, environment, interconnection, scale, and change

Content

Students investigate:

- Investigate broad continental patterns, changes in physical and human characteristics along the chosen transect
- Students investigate places and events of significance
- Investigate at least ONE geographical issue relevant to the study area

Tools and Skills

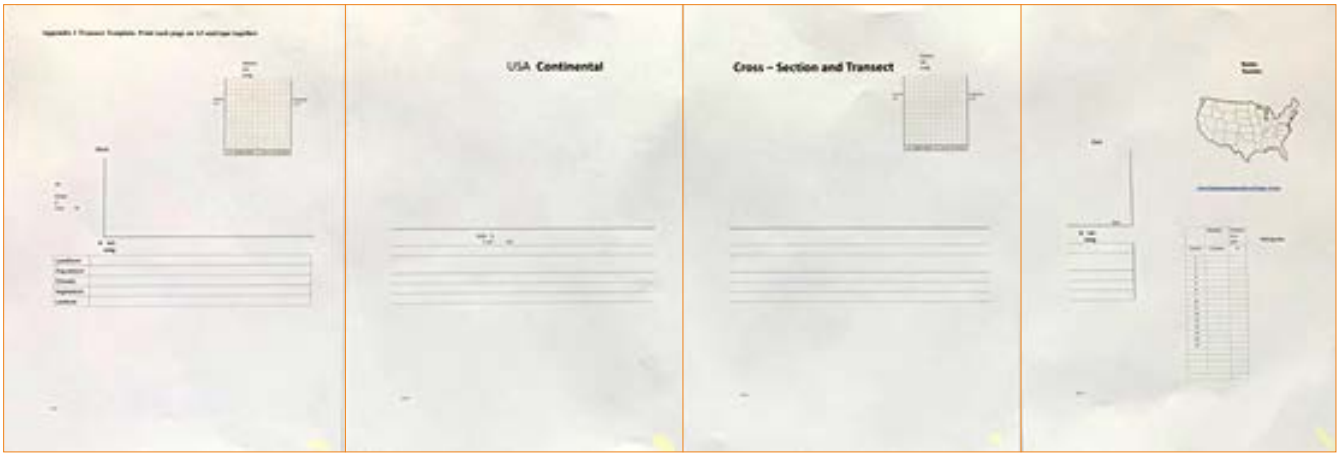
Tools: Maps, statistics and graphs, photos, spatial technologies

Skills: Acquiring geographical information, processing geographical information, communicating geographical information

Task A. Creating a Cross Section

(10 marks)

Use the template in Appendix 1 pdf. Print the four-page template on A3 and tape together.

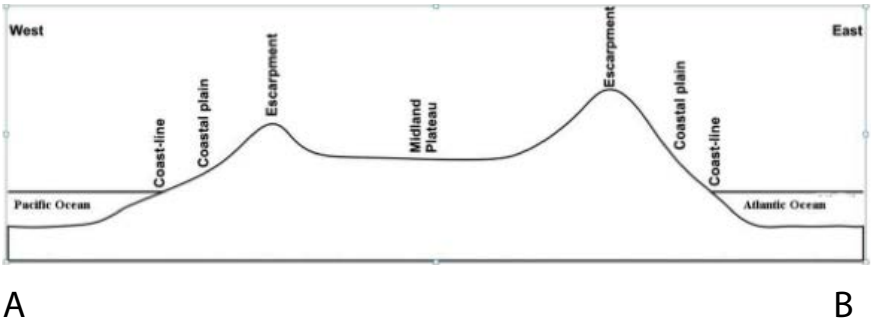


Place the 4 pages side by side, trim to match sections and tape

Cross Section

Cross sections are line graphs that show a sideways view of a landscape

Use the example below to assist you.



Select a straight-line path that crosses the USA from West to East.

Construct a cross section that illustrates the variations in the altitude of the land along the chosen path across the USA.

1. The start of your cross section is labelled Point A on the west coast. End your cross section is Point B on the east coast.
2. To construct the cross section, choose a minimum of 15 points distributed between Point A and B.

For each point, use Google Earth to identify:

- latitude and longitude for both these locations
- altitude and
- distance in kilometres from the start

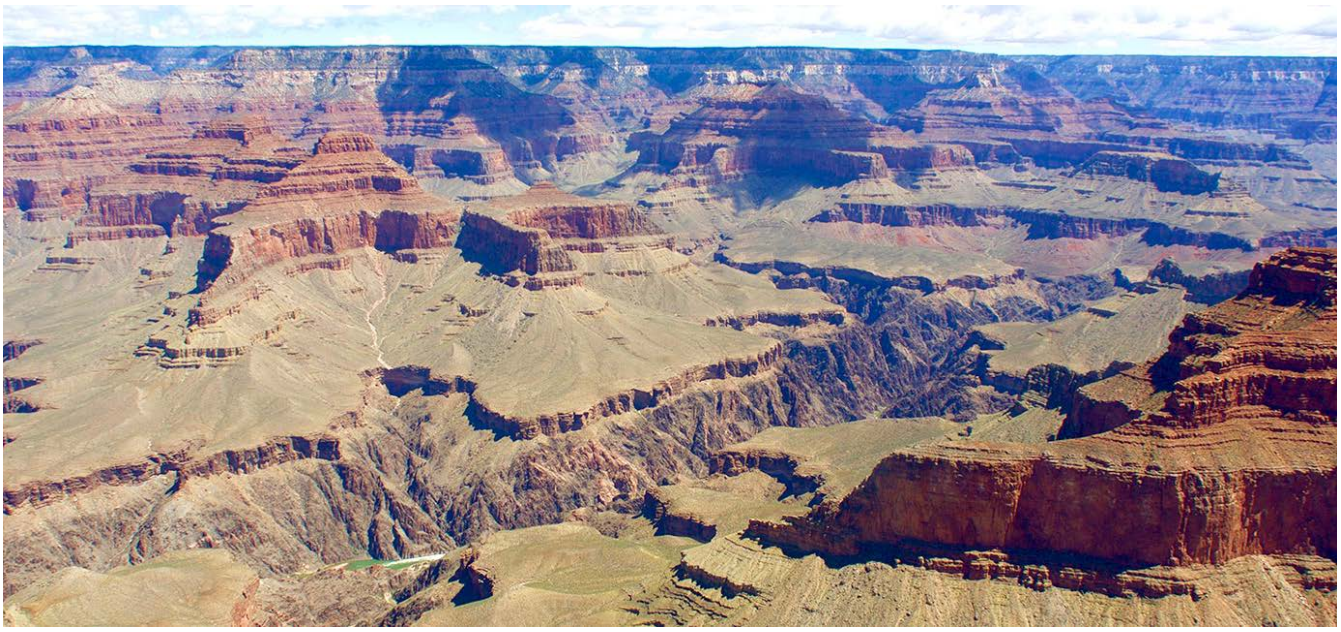
Record this information in the table provided on the template and use it to construct your cross section.

3. Use Google Earth to calculate the entire length in kilometres of your cross section and write this next to point B on the cross section
4. Calculate the following, as your cross section must have these stated:
    - Vertical scale stated as a ratio. Example 1:10000 and in the form 1cm represents 100 metres
    - Horizontal scale stated as a ratio. Example1:100000, and in the form 1cm represents 1000 metres.
    - Vertical exaggeration is calculated by horizontal scale in metres divided by vertical scale in metres.

    Example: Horizontal Scale = 1000 metres

    Vertical Scale = 100 metres

    VE = 10 times
5. Along your cross section, label areas or sites of geographical interest such as state boundaries, highways, rivers, lakes, mountain ranges or settlements.
6. On your template is a map of the United States. On this map draw the path of your cross section with Point A and B clearly labelled. Also label the states through which your cross section passes.



Task B. Creating Climate Graphs and a Transect

(10 marks)

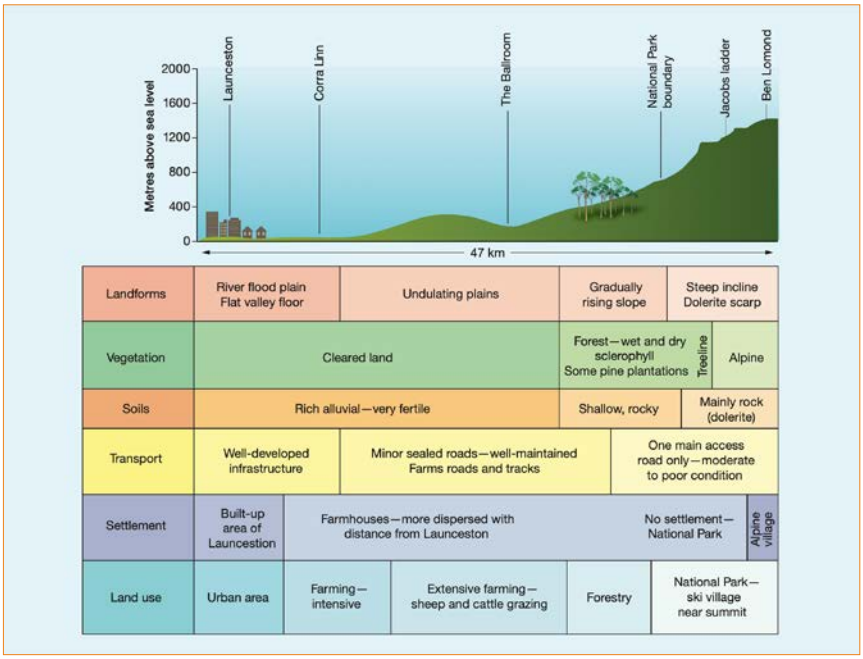
Climate Graphs

Create two climate graphs using the following website for data: https://www.usclimatedata.com/

Transect

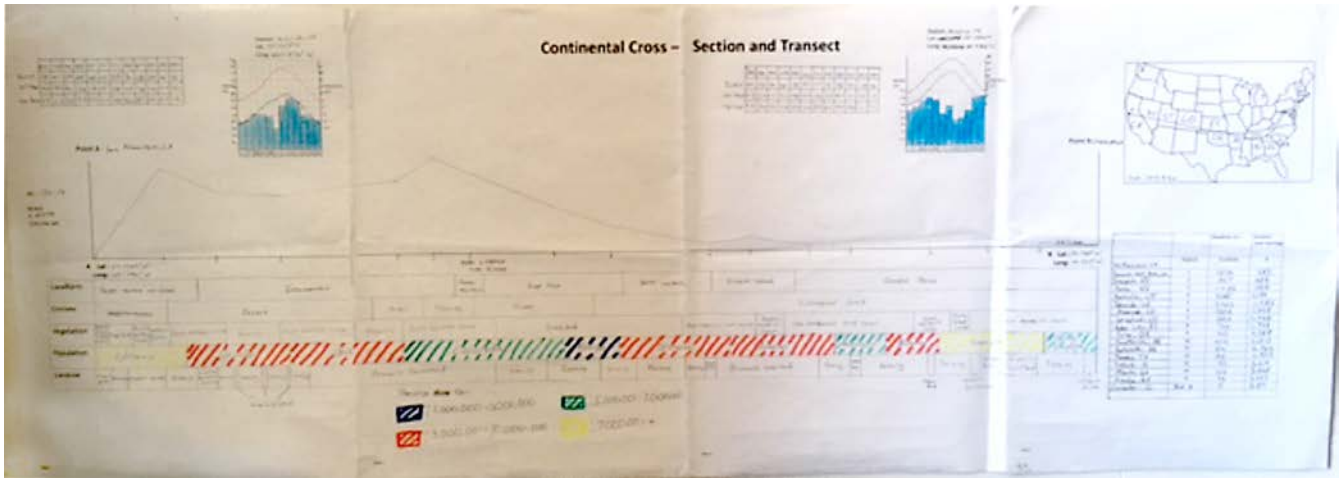
A line or path across the earth's surface along which observations are made or measurements taken.

1. Undertake research to identify the landforms, climate, vegetation, land use, and population along the length of the cross section.
2. Complete the transects underneath the cross section, use appropriate colours to illustrate the distribution of:
   - Landforms –create a transect showing the different landform regions. Landform regions map https://www.tes.com/lessons/bZOoHR-83wzyWg/land-forms-of-the-us
   - Climate - use the map to create a transect showing the different climatic zones. Climate regions map https://5thworldadventures.blogspot.com/2018/07/us-temperate-climate-zone-map.html
   - Vegetation - use the map to create a transect showing the different vegetation zones. North American vegetation zones http://www.cec.org/tools-and-resources/map-files/north-american-forests-2011
   - Land Use – use the map to create a transect showing the different land use zones. USA landuse map https://www.bloomberg.com/graphics/2018-us-land-use/
   - Population – break it up by State. Create a key and shade each state by the population include the capital cities population. Identify indigenous American cultures.
   - USA population distribution map by state https://commons.wikimedia.org/wiki/File:USA_2000_population_density.jpg
   - Identify indigenous American cultures across the transect https://www.britannica.com/topic/Pawnee-people Slide 4.



Sample transect: Australian Geography Teachers Association: Geography Skills Unlocked page 133

Example of completed Tasks 1 & 2



Task C. Tourism Video Group Response

(10 marks)

You are to create a 4 to 5 minute tourism video showing aspects of climate, leisure activities and landforms across the transect line. You will be marked on creativity, final product quality, contribution to and engagement in the group task.

1. Compare the climates shown on the climate graphs.
   - Compare: Show how things are similar or different.

2. Explain the how the landforms and climate influence land use and population.
   - Explain: relate cause and effect; make the relationships between things evident.

3. Demonstrate examples of leisure activities that tourists would do along the transect
   - Demonstrate: Show by example

Highline New York City, Golden Gate Bridge San Francisco, Arch made of Elks horns shed each year in Wyoming, The Grand Tetons mountain range. Photos L Chaffer

Task A. Creating a Cross Section (10 marks)

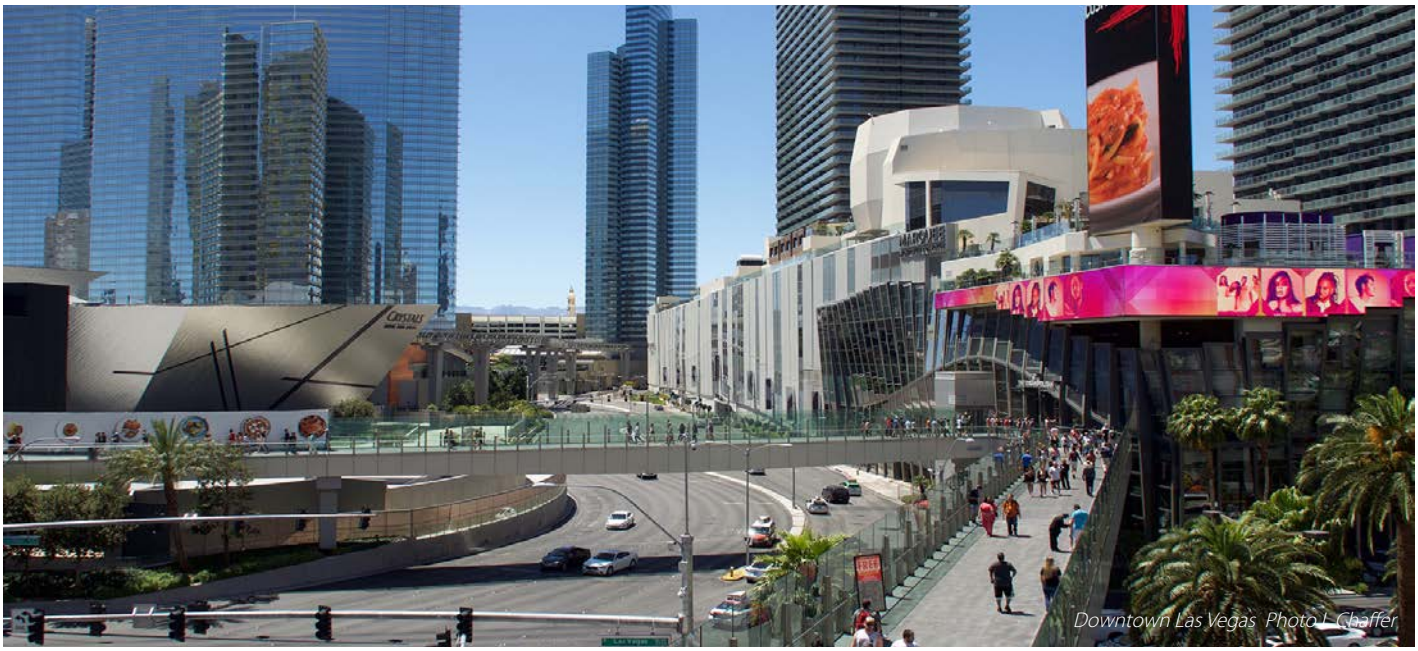
Excellent **9–10**	**The cross section provides a very high level of identification, organisation and synthesis of geographical information.** Application of all or most of the following tools is excellent with minimal error and a very high degree of accuracy: 15 or more points listed in the table on the template Cross section points plotted, and connected with thin flowing line Vertical Exaggeration Vertical Scale Horizontal scale Geographic points of interest labelled on the cross section including the start and end locations The entire length of cross section is indicated near Point B Cross section drawn across the map of USA with Points A and B labelled.
High **7–8**	**The cross section provides thorough identification, organisation and synthesis of geographical information.** Application of all or most of the following tools is high: 15 or more points listed in the table on the template Cross section points plotted, and connected with thin flowing line Vertical Exaggeration Vertical Scale Horizontal scale Geographic points of interest labelled on the cross section including the start and end locations The entire length of cross section is indicated near Point B Cross section drawn across the map of USA with Points A and B labelled.
Sound **5–6**	**The cross section provides sound identification, organisation and synthesis of geographical information.** Application of all or most of the following tools is sound: 15 or more points listed in the table on the template Cross section points plotted, and connected with thin flowing line Vertical Exaggeration Vertical Scale Horizontal scale Geographic points of interest labelled on the cross section including the start and end locations The entire length of cross section is indicated near Point B Cross section drawn across the map of USA with Points A and B labelled.
Developing **3–4**	**The cross section provides limited identification, organisation and synthesis of geographical information.** Application of all or most of the following tools is limited: Some points listed in the table on the template Cross section points plotted, and connected with thin flowing line Vertical Exaggeration Vertical Scale Horizontal scale Geographic points of interest labelled on the cross section including the start and end locations The entire length of cross section is indicated near Point B Cross section drawn across the map of USA with Points A and B labelled.
Elementary **0-2**	**The cross section provides elementary identification, organisation and synthesis.** Application of all or most of the following tools is elementary: Some points listed in the table on the template Cross section points plotted, and connected with thin flowing line Vertical Exaggeration Vertical Scale Horizontal scale Geographic points of interest labelled on the cross section including the start and end locations The entire length of cross section is indicated near Point B Cross section drawn across the map of USA with Points A and B labelled.

Task B. Creating a Transect (10 marks)

Excellent **9–10**	**Identification and description of climate vegetation, landform land use and population along the transect is excellent.** Application of all or most of the following is excellent: Research on landforms, climate, vegetation, land use Completed transects underneath the cross section for landforms, land use, climate, vegetation, population Bibliography
High **7–8**	**Identification and description of climate vegetation, landform land use and population along the transect is thorough.** Application of all or most of the following tools is high: Research on landforms, climate, vegetation, land use Completed transects underneath the cross section for landforms, land use, climate, vegetation, population Bibliography
Sound **5–6**	**Identification and description of climate vegetation, landform land use and population along the transect is adequate.** Application of all or most of the following tools is sound: Research on landforms, climate, vegetation, land use Completed transect underneath the cross section for landforms, land use, climate, vegetation, population Bibliography
Developing **3–4**	**Identification and description of climate vegetation, landform land use and population along the transect is limited.** Application of all or most of the following tools is developing: Research landforms, climate, vegetation, land use Completed transects underneath the cross section for landforms, land use, climate, vegetation, population Bibliography.
Elementary **0–2**	**Identification and description of climate vegetation, landform land population use along the transect is elementary.** Application of all or most of the following tools is elementary: Research on landforms, climate, vegetation, land use Completed transects underneath the cross section for landforms, land use, climate, vegetation, population Bibliography.

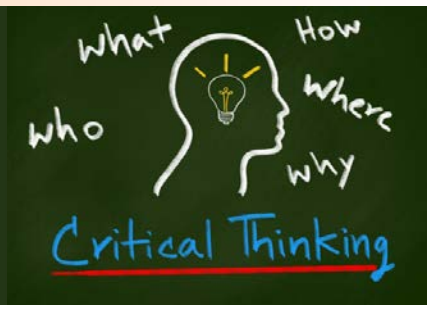
Task C. Tourism Video Group Response (10 marks)

Excellent 9–10	Clearly identifies and describes a range of similarities and differences in climate between the TWO cities/towns shown in the climate graphs. Uses a range of statistical data showing the temperature and precipitation of the TWO cities/towns. Clearly describes differences in leisure activities across the transect. • Gives detailed reasons as to why differences occur. Provides a range of specific examples. Clearly explains the relationship between landforms, population and land use • Gives detailed reasons as to why particular relationships exist across the transect. Provides a range of specific examples Always demonstrates active engagement in the group task to contribute effectively and positively to the outcome
High 7–8	Identifies some similarities and differences in climate between the TWO cities/towns shown in the climate graphs. Uses some climatic statistics. Describes differences in leisure activities across the transect. • May give some reasons as to why differences occur. Provides some examples. Explains the relationship between landforms, population and land use . • Gives detailed reasons as to why particular relationships exist across the transect. Provides a range of specific examples. Demonstrates active engagement in the group task to contribute effectively to the outcome
Sound 5–6	Identifies similarities or differences in climate in climate between the TWO cities/towns shown in the climate graphs. Uses some climatic statistics. Outlines some leisure activities across the transect. Describes the landforms, population and land use across the transect. May give some reasons for the relationships or locations of features.
Developing 3–4	Identifies climatic features of the TWO cities/towns. Lists some leisure activities across the transect Outline some aspects of the landforms, population and land use across the transect May give some reasons for the relationships or locations of features. Occasionally engages in the group task to contribute effectively to the outcome
Elementary 0–2	General reference to climate in the USA. General reference to leisure activities General reference to landforms, population and land use across the transect Rarely demonstrates active engagement in the group task to contribute effectively to the outcome



Downtown Las Vegas Photo L Chaffer

Assessing student's capacity to use ICT tools to investigate AND think critically



Shutterstock purchased images

Changing Places: Changing Assessment

Geography Department, Cranbrook School

One of the great opportunities that exists in the modern classroom has been brought about by the proliferation of individual computers and devices. The ubiquitous nature of technology has enabled a vast array of teaching and learning strategies aimed at leveraging the immense capacity afforded by computers and the internet.

This has had significant implications for the way in which we measure learning and assess student development. Many traditional forms of assessment have knowledge and understanding as their core tenants (and rightly so). However, in an age where information is omnipresent and obtainable almost instantaneously merely testing a student's recall of facts can be somewhat redundant.

What we have attempted to do is utilise the power of laptops (or other forms of technology) and assess student's capacity to use these tools to investigate as well as think critically. Often these outcomes are assessed in the form of research tasks that involve students working either in class or at home to gather information. This is then either tested on or communicated in a variety of different formats. As Geographers our intention is to engage students with spatial technologies and geographical skills and tools such as satellite imagery, aerial photography and population pyramids.

We took the opportunity to adopt a different approach with our Stage 5 Geography unit of An Urbanised World (Changing Places). This task was set in the context of an IB school and as such was looking at the areas of:

1 **Investigation** – specifically this involved assessing how well students collected and recorded appropriate, varied and relevant information & an understanding of connections, extensions and challenges, and
2 **Critical Thinking** – looking for extensive discussion of geographic concepts, issues, models and theories & synthesis of information to make valid and well supported analytical arguments, incorporation and interpretation of different perspectives. (adapted from IB: MYP Individuals and Societies).

PRE-TASK: During the writing process all questions were googled to see what the students would encounter when simply typing the questions into a search engine. We wanted to see what they did next, when faced with information were they able to collect types that were varied and relevant.

DELIVERING TASK: Students were given a period (50 minutes) and were allowed to use their laptop throughout the entire test. The answers were handwritten into the separate Question booklet. NOTE: in early versions we had include a short multiple-choice skills section worth 10 marks. Once students had filled in the separate multiple-choice answer sheet they were then allowed to open their laptop and proceed with the remainder of the task.

POST TASK: In another year where we ran a similar styled task (Environmental Change and Management) we noticed that some boys were trying to access their notes during the task. We had not foreseen this. As we were not assessing content knowledge as such, and it was the students own notes we were not concerned, and on some level pleased, with students trying to synthesise as much knowledge as possible.

STUDENT FEEDBACK: On completion of the task we gave students an opportunity to reflect on the task in general and more specifically how they had performed. The vast majority enjoyed the task compared with more traditional tests. When given the marking rubric and asked to estimate what they had demonstrated nearly all of them made an accurate prediction.

Note: Appendix 2 is an editable Word version of the task. Extra lines for student answers can be added to this version. Please give credit when using this task.

ASSESSMENT: An Urbanised World

Part 1 – Inquire and respond

Short Answer: Attempt Questions 1 – 4

Answer in the spaces provided in this booklet

Refer to stimulus material where appropriate

You are permitted to use your computer as a research tool in order to investigate specific content in support of your answers.

Allow about 30 minutes for this section

Criteria: Investigating

In your answer you will be assessed on your ability to:

- **Formulate and conduct focused research**
- **Justify the relevance of research within your responses**
- **Use research methods to collect and record appropriate, varied and relevant information as supporting evidence**

Source A: Air quality in Jakarta, a small riverside settlement in Jakarta, peak hour in Jakarta

Source B: Text outlining the causes and consequences of urbanisation in Jakarta

One of the consequences of rapid urbanisation in Indonesia has been the dramatic growth of Jakarta, Indonesia's capital and largest city, located on the north-west coast of Java. Parts of Jakarta, Indonesia's capital city, could be underwater by 2050 due to a devastating combination of sinking land at 17cm/year and sea level rise, with over 50% of the city situated below sea level. Traffic and flooding are treated as common occurrences in Jakarta, yet the impact of congestion and the risks posed by natural disasters are substantial. Congestion alone is costing Metropolitan Jakarta $3 billion annually. Some 40% of Jakarta is below sea level and faces serious flooding risks. These issues are not going to go away on their own. Indonesia is urbanizing at an extraordinary rate. Today a little bit over half of Indonesia's population live in cities. In less than ten years, by 2025, that ratio will be 68%. Two-thirds of all Indonesians will be city residents. Today, only 48% of urban households have access to safe water. Only 11 suburbs have sewerage coverage. Only 2% of city residents have access to centralised sanitation systems. In order to respond to growing cities, local governments must prioritize developing infrastructure in order to directly address issues.

Refer to Source A, Source B and your own research to answer Question 1 parts (a) and (b)

Question 1

a. Identify, with evidence, consequences of urbanisation in Jakarta?

.....

b. Outline ways that Indonesia has reduced the negative impacts of urbanisation in Jakarta since 2000. Justify your reasons with evidence.

.....

Suggested articles for research:

- Governor Ahok's Policy to Solve Jakarta's Traffic Jams – NewCities
- Jakarta at 30 million: my city is choking and sinking – it needs a new Plan B – The Guardian
- Air pollution in Jakarta, an invisible health threat – The Jakarta Post

Question 2

Recently, Indonesian President Joko Widodo decided to relocate the Indonesian Capital from Jakarta to Palangkaraya in Central Kalimantan.

a. Jakarta is situated on which Indonesian island? .....

b. How would you classify Jakarta as an urban settlement? .....

c. What evidence can you find to support your answer?

.....

.....

Using your own research, how and why has Jakarta's population changed over the last 50 years and predict how this will change into the future.

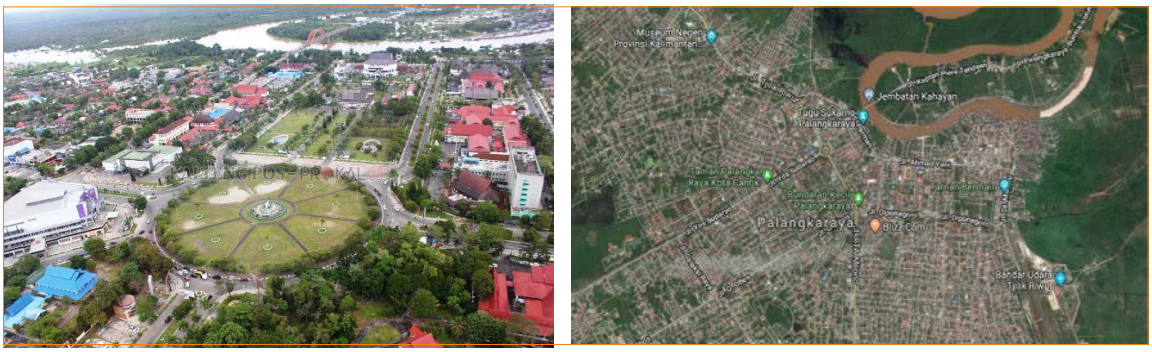
.....

.....

Question 3

Recently, Indonesian President Joko Widodo decided to relocate the Indonesian Capital from Jakarta to Palangkaraya in Central Kalimantan.

Source C: Aerial photo and satellite image of Palangkaraya in Central Kalimantan



a. The suggested site, Palangkaraya in Central Kalimantan, is situated on what island?

.....

b. With reference to Source C and Google Maps/Earth, describe how the land is used in and around Palangkaraya.

.....

.....

.....

.....

Question 4

a. Plot the location of Palangkaraya on the map (Source D) below. Mark with an 'X'.

Source D: Map of Indonesia and surrounding countries

b. Using Source D (above), and online research contrast the population pyramid structure of Singapore with Indonesia.

Suggested source for research:

- populationpyramid.net

.....

.....

.....

c. Outline one Social, Economic, and Environmental consequence of the pyramid structure for either Singapore OR Indonesia (circle choice)

Social .....

.....

Economic .....

.....

Environmental .....

.....

Part 2 – EXTENDED RESPONSE

Answer Question 5

Answer in the space provided.

Allow about 20 minutes for this section

Criteria: Critical thinking and communication

In your answer you will be assessed on your ability to:

- Discuss concepts
- Synthesize information to make valid, well-supported arguments
- Analyse sources and data for usefulness
- Interpret different perspectives and implications
- Communicate information and ideas effectively
- Structure information and ideas in an appropriate format

Question 5

At a press conference on Monday, President Joko Widodo will deliver a speech and decide whether to move the capital city to Palangkaraya or keep it in Jakarta.

He needs your help to research and write the speech.

Instructions:

Using your answers to Questions 1–4, research, and your own knowledge, write a speech that addresses the following aspects:

a. What problems have been caused by urbanisation in Jakarta?
What are the main reasons for the move to Palangkaraya?

b. If you want to move the capital: Explain what solutions will you recommend to make sure the problems in Jakarta are not repeated in Palangkaraya? Support your response with evidence.

c. If you do not want to move the capital: Explain what solutions will you recommend to ensure that the consequences of urbanisation in Jakarta are reduced? Support your response with evidence.

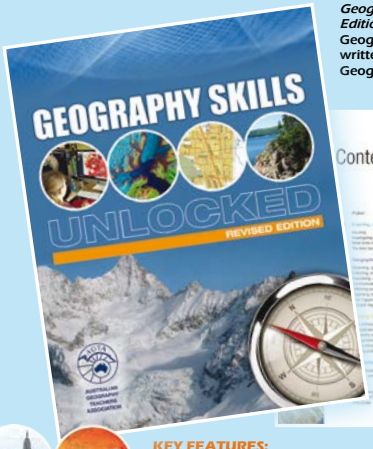
Mr Speaker, fellow Ministers, and staff, last Monday I announced that, due to the devastating consequences of urbanisation in Jakarta, we have to .....

End of Examination

RESOURCES

AGTA ANNOUNCES A REVISED EDITION OF THIS POPULAR BOOK

GEOGRAPHY SKILLS UNLOCKED, the essential skills book for Australian secondary schools



Geography Skills Unlocked – Revised Edition is published by the Australian Geography Teachers Association and written by a team of experienced Geography teachers.

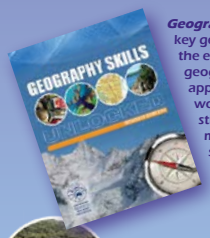
KEY FEATURES:

- Contents aligned to the inquiry and skills-based requirements of *Australian Curriculum: Geography*
- An engaging, easy to navigate design
- A student friendly approach with step-by-step explanations, descriptions and worked examples
- A focus on emerging technologies used to gather, analyse and present geographical data
- *GeoSkills* and *GeoInquiry* activities that scaffold student learning
- A wealth of stimulus material including a diverse range of maps, graphs, aerial photographs, satellite images, diagrams and photographs
- Examples drawn from each Australian state and territory with additional international material
- Key terms explained in embedded glossary boxes

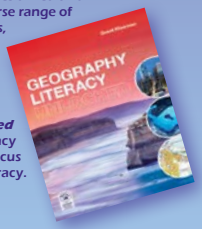
GEOGRAPHY SKILLS UNLOCKED can be ordered online from AGTA – **www.agta.asn.au/Products**

PRE-SERVICE GEOGRAPHY TEACHER STARTER PACK

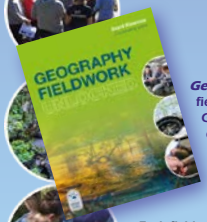
The Australian Geography Teachers Association (AGTA) offers pre-service Geography teachers the opportunity to access three essential teaching resources at a considerable discount on their recommended retail price. All three resources are available for the heavily discounted price $115.00.



Geography Skills Unlocked a comprehensive coverage of the key geographical skills including those related to the focus on the emerging technologies used to gather, analyse and present geographical data. It provides the user with a student-friendly approach with step-by-step explanations, descriptions and worked examples. The book includes a wealth of stimulus material including a diverse range of maps, graphs, aerial photographs, satellite images, diagrams and photographs.



Geography Literacy Unlocked focuses on developing the literacy skills of students. It includes a focus on written, visual and oral literacy.



Geography Fieldwork Unlocked features 33 inquiry-based fieldwork activities developed by a team of experienced Geography educators. The book introduces the reader to concept of inquiry-based fieldwork. It also provides guidance in developing fieldwork action plans, research methodologies, and data collection tools and approaches. It also provides guidance on the presentation and communication of fieldwork findings.

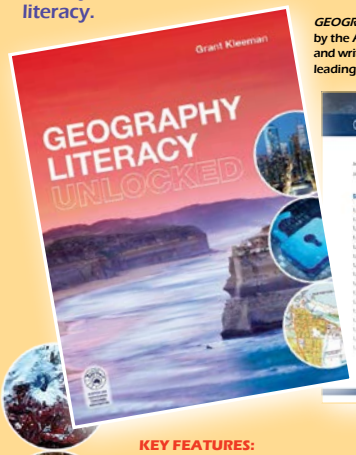
Each fieldwork activity is framed by one or more inquiry questions. They also feature: a statement of expected learning; a list of the equipment needed to successfully complete each fieldwork activity; a short introduction; background information that contextualises student learning; pre-fieldwork activities; and detailed step-by-step instructions on how to complete each fieldwork task.

TO ORDER – Email: gta.admin@ptc.nsw.edu.au or Phone: 02 9716 0378

Find out about the AGTA Geography Unlocked series – www.agta.asn.au/Products

AGTA ANNOUNCES AN ESSENTIAL NEW GEOGRAPHY RESOURCE

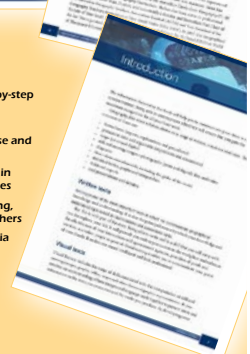
GEOGRAPHY LITERACY UNLOCKED has been written for secondary geography students seeking to improve their literacy skills. It includes a focus on written, visual and oral literacy.



GEOGRAPHY LITERACY UNLOCKED is published by the Australian Geography Teachers Association and written by Dr Grant Kleeman. One of Australia's leading geography educators.

KEY FEATURES:

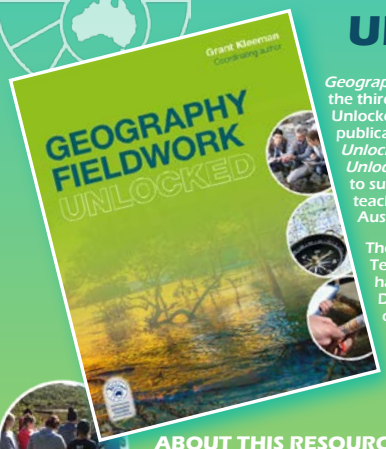
- An engaging, easy-to-navigate design
- A student-friendly approach featuring step-by-step explanations and annotated exemplars
- A focus on the basics of effective written communication – spelling, punctuation, tense and the use of connectives
- Descriptions of the principal text types used in geography, supported by annotated examples
- Guidance for writers in quoting, paraphrasing, summarising and referencing the work of others
- A focus on the responsible use of social media
- A comprehensive coverage of the principal forms of visual and oral texts students encounter in geography
- Templates or scaffolds to support the interpretative skills students are expected to demonstrate.



GEOGRAPHY LITERACY UNLOCKED is available for purchase from the GTANSW website: **www.gtansw.org.au**

NEW TO THE AGTA GEOGRAPHY UNLOCKED SERIES

GEOGRAPHY FIELDWORK UNLOCKED



Geography Fieldwork Unlocked is the third book in the Geography Unlocked series. Like companion publications – *Geography Skills Unlocked* and *Geography Literacy Unlocked* – the resource seeks to support and enhance the teaching of Geography in Australian Schools.

The Australian Geography Teachers Association (AGTA) has published the book with Dr Grant Kleeman, one of Australia's leading Geography educators, acting as coordinating author.

→ **NOW AVAILABLE**

ABOUT THIS RESOURCE

Geography Fieldwork Unlocked features 34 inquiry-based fieldwork activities developed by a team of experienced Geography educators

Section 1 of the book introduces the reader to inquiry-based fieldwork. It also provides guidance in developing fieldwork action plans, research methodologies, and data collection tools and approaches. It also provides guidance on the presentation and communication of fieldwork findings.

Section 2 features nine fieldwork activities for primary students (Years F/K–6). Each of these activities has been designed to develop students' conceptual understanding and the skills associated with inquiry-based learning.

Section 3 showcases 25 fieldwork activities aligned to the topics studied by students in Years 7–10.

Each fieldwork activity is framed by one or more inquiry questions. They also feature: a statement of expected learning; a list of the equipment needed to successfully complete each fieldwork activity; a short introduction; background information that contextualises student learning; pre-fieldwork activities; and detailed step-by-step instructions on how to complete each fieldwork task.

GTA NSW President Report, AGM 2019

Lorraine Chaffer
President GTA NSW, October 2017 – October 2019

Firstly, let me thank all board members for supporting my role as President of GTANSW for the past 3 years. It has been an interesting journey of discovery, one that didn't come with an operating manual or role description, but one that has given me the opportunity to lead change for the benefit of members and the subject of Geography. I look forward to supporting the new president and hope to continue with the development of new resources and events in the future.

For the purposes of this report I will refer to GTA NSW as per the Constitution although the association now goes by the name GTA NSW and ACT, this change is yet to be legalised. This will be addressed further in the AGM agenda.

2019 has been a highly successful year for our association in providing professional support for K–12 Geography teachers, pre-service teachers and students across NSW and ACT. Professional learning events remained inclusive of all sectors, members and non-members and actively promote Geography across all stages.

MEMBERSHIP was 601 as at Nov 22nd2019, and has continued to grow (375 in 2017; 431 in 2018). Of these 118 are non-paying pre-service teachers. This means an additional 50 paying members. The majority of members are organisations (schools), covering up to six faculty members within a school. Fees for non-members have continued to remain higher to encourage membership.

- 35 GTA Concessional Membership
- 120 GTA Personal Membership
- 6 GTA Primary School Membership
- 322 GTA School/Organisation Membership
- 118 Pre-service teachers

GTA COUNCIL

On November 22nd, 2019 the GTA NSW Council comprised 18 elected councilors (including a president and four vice presidents) and three co-opted members. Six councilors live in regional locations Wagga (John Petts), Canberra (Michael Da Rosa) and Newcastle (Catherine Donnelly, Alexandria Warnock, John Lewis and Drew Collins). Remaining council members live across Sydney (Susan Caldis, Sharon McLean, Grant Kleeman, Louise Swanson, Martin Pluss, Grace Larobina, Alex Pentz, David Latimer, Paul Alger, Karen Bowden, Adrian Harrison, Milton Brown), Central Coast (Lorraine Chaffer) and Illawarra (Paul Batten, Keith Hopkins). Council meetings can be attended in person and online allowing all councilors to contribute meaningfully to GTA meetings.

GTA NSW continues to outsource administrative, financial, publishing and organisational tasks to the Professional Teachers' Council NSW and rents office space within the PTC premises at Auburn.

2019 PROGRAM

2019 was a busy year as we consolidated and expanded professional learning opportunities and resources.

None of this would be possible without a team of dedicated council members who contribute what time and circumstances allow throughout the year. Thank you. I will name individuals as I run through our 2019 achievements.

I have a few people to thank before I report on the 2019 program.

- Sharon McLean for consistently facilitating our online meetings through Zoom
- Susan Caldis for her detailed and comprehensive meeting minutes
- Grant Kleeman for financial management as the ongoing GTANSW treasurer.

For office administration thanks go to all of the PTC staff but in particular

- Rona Afenir for event management, a huge undertaking that makes every event professionally organised and delivered
- Jill Sillar for her publishing skills and for satisfying the ongoing demand for flyers and other promotional materials and of course the publication of the Geography Bulletin.
- Shreela Pradhan for negotiating and facilitating the new GTA website

PROFESSIONAL LEARNING EVENTS

- **Two-day Annual Conference "The PLACE of Geography'** continued the approach of maximising teacher choice by providing a wide variety of presentations and workshops.

Innovations in 2019 included

- three full day immersion courses to target professional learning in one area Spatial technology – ESRI; Drones – Albury TAFE;

Fieldwork skills – SOP)

- two Keynotes (Anika Molesworth and Den Barber)
- a careers keynote presentation linked to the use of drones (She Maps).
- a panel of experts linked to topics taught in 7–10
- a Twilight Event for Primary teachers
- the involvement of universities as exhibitors and expert panelists.

There were 36 individual workshops and presentations. Over 200 teachers attended each day. Additionally, there were 27 exhibitors on Day 1 and 22 exhibitors on Day 2, over 30 presenters, and GTA councilors.

The focus for 2019 was on Classroom Practice and Learning Across the Curriculum.

2019 was the third year with sponsorship, allowing a diversity of interstate presenters to be funded and scholarships / bursaries awarded to teachers to attend.

- **A two-day Regional Conference at Kiama with a focus on Fieldwork**
- **Six webinars covering a range of pedagogical, skills and Geography content**

Thank you to Sharon McLean for your organisation of these important events to service our city, rural and regional colleagues. Thank you also to Sharon's co-presenters at Kiama Lorraine Chaffer, Susan Caldis and Michael Da Rosa.

- **Two Skills Workshops**

Thank you to Grant Kleeman for organising these events and for Sharon McLean and Susan Caldis for co-presenting with Grant. These workshops fill the continued high demand for training in skills by those untrained in or new to teaching Geography in particular.

- **Online Professional Learning through Open Learning. Geo101** has proven to be a highly successful professional learning experience that has the flexibility in delivery to suit teachers' needs. As we come to the end of 2019 GEO 102 is now online and ready for registration.

Thank you to Paul Batten for driving this successful initiative and providing support to participants, administering feedback and ongoing course development .

OTHER EVENTS

- **HSC Exam Preparation Lectures** to assist students prepare for the Geography HSC exam

Thank you, Catherine Donnelly, for your organisation and thank you councilors who ran and presented at these events. David Latimer, Alexandria Lucas, Lorraine Chaffer, Grant Kleeman,

- ***RivSSTA HSC lectures*** were supported by GTANSW but funded by RivSSTA.

Thanks to Karen Bowden and Lorraine Chaffer for supporting this event.

- **Arthur Phillip Fieldwork Awards Competition and ceremony** – a competition to promote geographical inquiry through fieldwork.
- **Top HSC Achiever Awards Ceremony** – Top 10 HSC students AND their teachers recognised in the Awards Ceremony during Annual Conference.

Thank you to Grace Larobina for organising the collection and marking of the competition entries and organising the Award Ceremony. Thanks also to those of you who assisted Grace with these two activities, they could not run without a team effort including those who gave their time to mark the fieldwork entries in their January holidays. Grace Larobina, Sharon McLean, Lorraine Chaffer, Alex Pentz, Paul Alger and Karen Bowden.

- **AGTA19 Conference on the Gold Coast**

Thank you to those who were able to attend this event to support the professional development of Geography teachers on a National scale.

GTA NSW & ACT provided a strong state presence through Grant Kleeman, Susan Caldis, Michael Da Rosa, Sharon McLean, Louise Swanson, Alexandria Warnock, Catherine Donnelly and Lorraine Chaffer. Further thanks to those who presented workshops at the event Susan Caldis, Lorraine Chaffer, Catherine Donnelly and Louise Swanson.

- **Representative roles**

  In 2019 Lorraine Chaffer represented GTANSW at the NSW Cross Sectoral HSIE committee meetings and HSIE Professional Teachers' Associations, tertiary educators, NESA and NSW DoE HSIE Advisors meetings.

  Sharon Mclean represented GTANSW on the NESA BCC for Stage 6 Geography and Alex Warnock provided input by invitation to two consultation meetings.

  Catherine Donnelly filled a position of GTA representative on the PTC NSW Board

Thank you to Sharon, Alex and Cath.

- **Affiliations**

  GTANSW is an AGTA affiliate with the following persons attending Board meetings and contributing to the operation of the Association throughout 2019 Lorraine Chaffer (Director), Susan Caldis (Nominated director) Grant Kleeman (treasurer) Michael Da Rosa (ACT rep)

GTA NSW maintains a close relationship with the Geographical Society of NSW. Thank you to Susan Caldis for maintaining links and keeping us informed.

- throughout the year, visited schools who had requested assistance or liaised with other groups.

Thanks to Grace Larobina for working with primary teachers in the NW Sydney region and Catherine Donnelly for working with teacher groups in the Newcastle region.

- **Advocacy**

  GTANSW is active in presenting the interests of Geography teachers in areas of public concern, by investigating and making recommendations to appropriate authorities (including the NSW Education Standards Authority) on educational policies and other matters of state and national interest in which Geography teachers are involved. This advocacy includes close liaison with the Australian Geography Teachers' Association (AGTA) and the Professional Teachers' Council of NSW (PTC NSW).

  Most recently GTA has submitted or are preparing to submit responses to NESA on

  – *Draft Stage 6 Geography Syllabus*
  – *NSW Curriculum Review*
  – *NSW Curriculum Review Draft Report*

Thank you to Susan Caldis and Sharon McLean for producing submissions in 2019.

PUBLICATIONS AND DIGITAL PRESENCE

- The ***Geography Bulletin*** remains the key publication with four digital editions for K–12 teachers. 2019 saw the introduction of Blackline teaching activities (provided online as appendices) to support the use of articles appearing in the Bulletin. Work is in progress to trial a subscription mechanism through which members can obtain print copies of the Bulletin.

Lorraine Chaffer continued the role of sourcing material and editing the bulletin and is keen to continue that role for the immediate future.

- A new **website** was created to enhance engagement with teachers and the community

Thank you to all councilors who provided input when designs were being considered.

Thanks specifically to Paul Batten and Louise Swanson for assisting Lorraine Chaffer in developing and fine tuning the website and agreeing to be involved in maintaining up to date content. Rob Berry was thanked with a certificate and gift for years spent maintaining the old site.

- ***Primary Geography Alive –*** an online resource of teaching units with integrated resources published on the GTANSW website with free access to primary teachers. Units continue to be added and should be completed by the end of this year.

Thank you to Grant Kleeman as coordinator and developer of the primary resource.

- ***Pathways with Geography poster*** – showing courses linked to Geography at NSW Universities was produced late 2019 and is now for sale to schools.

Lorraine Chaffer led the development of the poster and will consult with other councilors to develop a further set of support careers posters in the near future.

- ***Social media*** GTA NSW maintains its ***Facebook Page*** for official notifications and general interest items, two Facebook Support Groups for HSC Teachers and Primary teachers and Twitter for conference events.

It is anticipated that all of these programs will continue into 2020. Discussions on the delivery of Professional Learning to ***primary teachers*** will continue with a potential focus on the use of webinars, further twilight functions, and further ahead, online courses.

GTANSW continues to provide accredited professional learning through NESA (NSW teachers) and TQI (ACT teachers)

INITIATIVES IN DEVELOPMENT

- ***Assessment packages*** based on each of the 7–10 NSW Geography Syllabus Topics but applicable to all jurisdictions. The packages will contain a stimulus booklet and a range of different assessment activities, marking guidelines and suggested answers. These will be available for purchase. Packages will be available and launched at the Annual Conference in May 2020.
- The ***Geography Learning Journey poster and banner***

The poster is in the early stage of development with availability anticipated for early 2020.

Lorraine Chaffer is leading the development of the Assessment packages and posters.

GTA NSW remains a hard-working team of volunteers with a passion for supporting Geography teachers in NSW and for that I am extremely grateful and proud of what we have achieved in 2019.

Thank you
Lorraine Chaffer

Treasurer's Report

I am pleased to present the audited accounts of the Geography Teachers Association NSW.

The operating surplus for 2018/19 was $14,397.00. This is a significant improvement on 2018 when we suffered a small deficit of $1,299.00.

Total Income: $321,591 (up from $315,056 in 2018)

Expenditure: $307,194 (down from $316,355 in 2018)

Major sources of revenue:

Annual Conference	$123,227
Membership	$75,583
'Event's'	$60,165
Regional Conference	$25,559
Book sales	$17,828
Sponsorship	$9,875
CAL	$4,407

Major costs:

Conference	$96,603
Membership	$5,856
Rent	$15,634
Website	$10,093
Travel	$3,955
Stock	$29,760
Subscription	$5,819

Admin:

Graphic design	$24,878
Bookkeeping	$8,428
Secretariat	$28,884
Audit fee	$1,708
Postage	$3,313

(Total paid to PTC: $74,417)

TOTAL Equity (30 June 2018): $326,835.00

(Balance as of 26 November 2019: $307,911.96)

Grant Kleeman

Treasurer

ADVICE TO CONTRIBUTORS

Geography Bulletin guidelines

1. ***Objective:*** The Geography Bulletin is the quarterly journal of The Geography Teachers' Association of NSW & ACT Inc. The role of the Geography Bulletin is to disseminate up-to-date geographical information and to widen access to new geographic teaching ideas, methods and content. Articles of interest to teachers and students of geography in both secondary and tertiary institutions are invited, and contributions of factually correct, informed analyses, and case studies suitable for use in secondary schools are particularly welcomed.

2. ***Content:*** Articles, not normally exceeding 5000 words, should be submitted to the GTA NSW & ACT Office by email gta.admin@ptc.nsw.edu.au

   Submissions can also be sent directly to the editors: Lorraine Chaffer (lchaffer@tpg.com.au)

   Articles are welcomed from tertiary and secondary teachers, students, business and government representatives. Articles may also be solicited from time to time. Articles submitted will be evaluated according to their ability to meet the objectives outlined above.

3. ***Format:*** Digital submission in Word format.

- Tables should be on separate pages, one per page, and figures should be clearly drawn, one per page, in black on opaque coloured background, suitable for reproduction.
- Photographs should be in high resolution digital format. An indication should be given in the text of approximate location of tables, figures and photographs.
- Every illustration needs a caption.
- Photographs, tables and illustrations sourced from the internet must acknowledge the source and have a URL link to the original context.

Note: Please try to limit the number of images per page to facilitate ease of reproduction by teachers.

Diagrams created using templates should be saved as an image for ease of incorporation into the bulletin.

All assessment or skills tasks should have an introduction explaining links to syllabus content and outcomes. A Marking Guideline for this type of article is encouraged.

4. ***Title:*** The title should be short, yet clear and descriptive. The author's name should appear in full, together with a full title of position held and location of employment.

5. ***Covering Letter:*** As email with submitted articles. If the manuscript has been submitted to another journal, this should be stated clearly.

6. ***Photo of Contributor:*** Contributors may enclose a passport-type photograph and a brief biographical statement as part of their article.

7. ***References:*** References should follow the conventional author-date format:

   Abbott, B. K. (1980) ***The Historical and Geographical Development of Muswellbrook*** Newcastle: Hunter Valley Press.

   Harrison, T. L. (1973a) ***Railway to Jugiong*** Adelaide: The Rosebud Press. ***(2nd Ed.)***

Refereeing

All suitable manuscripts submitted to the Geography Bulletin are subject to the process of review. The authors and contributors alone are responsible for the opinions expressed in their articles and while reasonable checks are made to ensure the accuracy of all statements, neither the editor nor the Geography Teachers' Association of NSW & ACT Inc accepts responsibility for statements or opinions expressed herein.

Books for review should be sent to:

The GTA NSW & ACT Council
PO Box 699
Lidcombe NSW 1825

Editions

There are four bulletins each year – two published each semester. Special Editions are created on need.

Notice to Advertisers

'Geography Bulletin' welcomes advertisements concerning publications, resources, workshops, etc. relevant to geography education.

FULL PAGE (26 x 18cm) – $368.50
Special issues $649.00

HALF PAGE (18 x 13cm or 26 x 8.5cm) – $214.50
Special Issues $382.80

QUARTER PAGE (13 x 8.5cm or 18 x 6.5cm) – $132.00
Special issues $242.00

All prices include GST

Advertising bookings should be directed to:

GTA NSW & ACT Office
Telephone: (02) 9716 0378
Fax: (02) 9564 2342
Email: gta.admin@ptc.nsw.edu.au

The
Geography Teachers Association
of NSW & ACT Inc.