TEACHER GUIDE
YEAR 7 GEOGRAPHY – COLLECTING, RECORDING,
EVALUATING AND REPRESENTING

Ethical research of geological events with First Nations Peoples

Warning – Aboriginal and Torres Strait Islander teachers and students are advised that this curriculum resource may contain images, voices or names of deceased people.
YEAR 7 GEOGRAPHY – COLLECTING, RECORDING, EVALUATING AND REPRESENTING

Ethical research of geological events with First Nations Peoples

Australian Curriculum Link
HASS/Geography/Year 7/Geographical Inquiry and Skills/Collecting, Recording, Evaluating and Representing/ACHGS048

Australian Curriculum Content Description
Evaluate sources for their reliability and usefulness and select, collect and record relevant geographical data and information, using ethical protocols, from appropriate primary and secondary sources.

Australian Curriculum Elaboration
Applying ethical research methods, including the use of protocols for consultation with Aboriginal and Torres Strait Islander communities.

Essential question
How are researchers working ethically with First Nations Peoples to find out more about Australia’s geological past?

Australians Together Learning Framework
Tells Australia’s narrative through the lens of 5 Key Ideas that inform teachers and students about Aboriginal and Torres Strait Islander perspectives.

- **The Wound**
  Injustice from the impact of colonisation
  Students will recognise the pain and disadvantage many First Nations people experience, that started at colonisation and continues today.

- **Our History**
  A past that shapes our story as a nation
  Students will critically engage with Australia’s stories and understand the impact our history continues to have on Aboriginal and Torres Strait Islander people and all who call Australia home.

- **Why Me?**
  What’s it got to do with me?
  Students will explore why Aboriginal and Torres Strait Islander histories and cultures are relevant to them today.

- **Our Cultures**
  Everyone has culture. Know about your culture and value the cultures of others
  Students will learn more about their own culture and identity, and gain a better understanding of, and respect for, Aboriginal and Torres Strait Islander cultures.

- **My Response**
  Steps we can take to build a brighter future
  Students will gain an understanding that a brighter future is possible for all Australians, but to get there we each need to play our part.
Introduction

Before beginning the study, it’s important to ask students to access their prior knowledge about the topic with an introductory question or activity.

Prior to having students read the handout, discuss primary and secondary resources with the class. Be sure to include the value of interviews with people as primary source evidence. Consider the role that Western culture plays in deciding the value of sources, evidence and information. Historically, researchers have struggled to move beyond researching solely through a Western lens. That lens has been responsible for more than 200 years of a false and dismissive attitude that Indigenous knowledges are ‘primitive’ (Peters 2017). What needs to be recognised is that, depending on the topic of research, reliability comes not only with tertiary education and credentials, but also from thousands of years of cultural practice.

Research

Since colonisation, Aboriginal and Torres Strait Islander Peoples have been studied, researched and questioned. Far too often this has happened in disrespectful and unfair ways – the research does not benefit the people or communities; it benefits the researchers. Research has not been with First Nations Peoples; it has been about them. Researchers have not listened properly to the people who are being studied (Benveniste & King 2018, p. 52). Recently this has started to change and the importance of ethics in research is being recognised. But what exactly is ‘ethical’ research?

The story of our nation’s past is hard to face but it’s important; it’s left a wound that can be seen in the inequality between Aboriginal and Torres Strait Islander people and non-Indigenous Australians. Help students understand how this wound continues to have an impact today.

Ideas for student activities

Sources brainstorm

- What are primary and secondary sources in the study of geography?
- What might we use these sources to understand?
- To select the most relevant geographical data and information, we must evaluate sources for reliability and usefulness. How do we evaluate for reliability and usefulness?
- Who decides what information is reliable or useful?
- Who decides who’s the expert?

Think like a researcher

In pairs, pretend you’re researchers. Write yourselves a check list to follow when collaborating with people of any culture. Put yourselves in their shoes: how would you want to be treated?

Encourage students to consider whether research participants have any choice in participating, where the research is done, how research participants are represented (positively / negatively), etc. Consult the ‘Good research checklist’ from Ninti One and the dot points in ‘Useful resources’.

Glossary

Terms that may need to be introduced to students prior to teaching the resource:

colonisation: the act of one country invading and taking over another; the invaded country is called a ‘colony’; the invading force are colonists. The British began the colonisation of Australia in 1788.

colonists: the invading force.

consent: permission or agreement to do something.

Elders: a leader or senior person in an Indigenous community; a custodian of language and cultural knowledges.

encoding: to convert information into another form; for example, changing a worded message into Morse code, or scientific knowledge into song.

mission: a place run by Christian organisations from the 1800s up to the late 1980s where many Aboriginal and Torres Strait Islander People were forced to live under strict control.

oral tradition: a way of recording information across time without the use of writing; for example, verbally (stories and songs) or physically (dance and art).

principles: stated beliefs or rules that guide behaviour and actions.

reserve: a place run by the government from the 1800s up to the 1960s where many Aboriginal and Torres Strait Islander Peoples were forced to live in these areas under strict control.

valid: well-considered, thorough and grounded in fact and logic.
**Teacher guidance**

**The difference between morals and ethics**

‘Morals’ are the guiding principles of right and wrong a person lives by. These don’t often need to be thought about because they’re very much part of a person’s culture and upbringing. If something’s ‘immoral’, it’s known to be wrong. For example, hurting others is morally wrong.

‘Ethics’ take a little more consideration. A person’s ethics or a society’s ethics are specific rules, actions and behaviours based on the moral principles of right and wrong. If something is ethical it’s considered to be morally good or correct; it doesn’t harm people or the environment. For example, not hurting people is an ethical decision.

**Ethical protocols**

A ‘protocol’ is an accepted and agreed way of doing something in a situation, a group or an organisation. When protocols are ethical, they’re based on those important moral principles of right and wrong.

A lot of thought has gone into ethical protocols that can guide the ways research is conducted with Aboriginal and Torres Strait Islander Peoples. The Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS) has created the Guidelines for ethical research in Australian Indigenous studies (GERAIS). The fifth GERAIS principle says that Indigenous knowledge must be treated with respect. It mustn’t be made to look less important or valid than Western knowledge (AIATSIS 2012, p. 7). And there are some interesting examples of what can be learnt when this respect is shown.

**Respect for knowledge and knowledge ownership**

One way of looking at it, is that First Nations Peoples own their knowledges. It may seem obvious, however, Aboriginal and Torres Strait Islander people could rightly say there is nothing obvious about that statement at all, and that this is not the way that Indigenous knowledges have been treated in the past. Historically and to this day, non-Indigenous people have stolen and misused Indigenous knowledges, including technical and scientific knowledges, artistic works, cultural objects and even human remains (Davis 1997).

Today, many guidelines have had to be written to attempt to protect Indigenous knowledges and ensure that any research involving First Nations Peoples must be respectful, confidential and ethical. Participants must give their consent and there should be benefits for people and communities who are involved (Orr et al. 2009).

**Useful resources**


For more detailed information on ethical protocols, take a closer look at Engaging – a guide to interacting respectfully and reciprocally with Aboriginal and Torres Strait Islander People, and their arts practices and intellectual property, by Professor Ghilad Zuckermann for the Australian Government’s Indigenous Culture Support: [http://www.zuckermann.org/guide.html](http://www.zuckermann.org/guide.html). This is also located in ‘Resources’.

**Ideas for student activities**

**Compare and contrast**

Following the pair task, check for similarities and differences between ideas within the class, and the protocols listed in the Aboriginal knowledge and intellectual property protocol community guide from Ninti One.

**Article discussion**

Having read ‘Aboriginal People – how to misunderstand their science’, work in pairs to pull out the main points raised by the author. Discuss your findings as a class.
### Teacher guidance

Zuckermann highlights some important points to remember that may be useful in guiding the ‘Think like a researcher’ task:

- Get to know the participants. Make sure to build a trusting relationship with First Nations people and communities. Asking questions straight away doesn't show respect. Wait to be invited to ask questions.
- Understand that some knowledge is secret or sacred and not for sharing. Respect that and don't push someone to share.
- Always ask for permission from Traditional Custodians.
- Find out and follow the cultural practices of the people and communities being researched.
- Recognise the knowledge holders using proper referencing.
- Share any benefits with the people and communities being researched.
- Give everyone involved a copy of the research and findings.
- Find a way to give back to the community. (Zuckermann et al. 2015).

The article, ‘Aboriginal People – how to misunderstand their science’, by Ray Norris, Chief Research Scientist with the CSIRO, is a short read (893 words; 6 mins at 150 wpm) exploring the Western attitudes that have been held and are being dismantled around First Nations Peoples and scientific knowledge. It may be a useful read for students, but some word definitions will be needed: [https://theconversation.com/aboriginal-people-how-to-misunderstand-their-science-23835](https://theconversation.com/aboriginal-people-how-to-misunderstand-their-science-23835).

### Ideas for student activities

**Class discussion**

Having read the article, *Early colonial attitudes* and the student handout, discuss the extent to which non-Indigenous people’s attitudes to Indigenous knowledges have changed since colonisation.

What else could be done to change attitudes today?

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**Our History**

There are many stories that make up Australia’s history. It’s important to use resources that include perspectives and voices of First Nations people, such as those contained in this resource.

**Unethical history**

When the British colonists first arrived in Australia, they were convinced of their own superiority. Because Aboriginal and Torres Strait Islander Peoples weren’t white and Western, and because Indigenous ways of living were different from British ways, the colonists thought they had nothing to learn from the local people. This superior mindset lead to some highly unethical and inhuman behaviour, such as colonists accepting help from First Nations Peoples to find water sources, then building fences and refusing to allow the helpful locals to have access (QCAA 2008). The government-run reserves and the church-run missions worked hard to separate Aboriginal and Torres Strait Islander Peoples from not only their families, communities, languages, cultures and cultural practices, but importantly from sharing knowledge with their children (Ball 2015, p. 6).

**Useful resource**

As a class, read the Australians Together article about early colonial attitudes to First Nations People, which can help students understand just how damaging those attitudes have been: [https://australianstogether.org.au/discover/australian-history/early-settlers/](https://australianstogether.org.au/discover/australian-history/early-settlers/).
Teacher guidance

Help students understand that because they call Australia home this relates to them. Explore what’s happening, or has happened, around your local area that’s relevant to this topic.

Podcast

Listen to Dr Karl Kruszelnicki explain in *Aboriginal stories accurate*, a 2018 podcast for ABC’s Great Moments in Science (including a transcript), how both Indigenous knowledges and science are being used to understand Australia’s geological histories (06:16): https://www.abc.net.au/radionational/programs/greatmomentsinscience/aboriginal-stories-accurate/9576744.

Questions – ‘Aboriginal stories accurate’

Some of the vocabulary may need defining for students prior to viewing, such as, *verifiable, cataclysmic* and *glacier*.

- How have oral traditions been passed down successfully from generation to generation? (songs and dances are harder to change than a story)

Indigenous oral traditions are highly accurate.

- What evidence is there of this? (the comparison with known geological events)
- What dates are given for the ice age and the rising sea levels?

Jot down the dates and details for the oral traditions that confirm the rising seas at the end of the ice age:

- Western Australia – Rottnest Island.
- South Australia – Spencer’s Gulf.
- Queensland – Fitzroy Island.
- Northern Territory – Bathurst Island and Melville Island.
- Victoria – Port Phillip Bay.

Useful resources

**Articles**

*The Sydney Morning Herald* article, ‘Aboriginal stories of sea level rise preserved for thousands of years’, by Nicky Phillips gives some information about the Botany Bay recordings of the sea levels rising. It also includes a map showing the sea level during the last ice age; before sea levels rose so dramatically that the event was captured in oral histories. This may be interesting for students: https://www.smh.com.au/technology/aboriginal-stories-of-sea-level-rise-preserved-for-thousands-of-years-20150212-13d3rz.html.

*The Guardian* article by Joshua Robertson, ‘Revealed: how Indigenous Australian storytelling accurately records sea level rises 7000 years’, includes some interesting quotes from geographer and professor Patrick Nunn and linguist Nicholas Reid. Students could discuss what information the quotes give them about the event and the value the researchers are placing on the information being shared by the First Nations Peoples: https://www.theguardian.com/australia-news/2015/sep/16/indigenous-australian-storytelling-records-sea-level-rises-over-millenia.

Ideas for student activities

**Mapping the stories**

Listen to the Moments in Science podcast, answer the questions and take notes.

On a blank map of Australia, identify the places mentioned in the podcast. Annotate the map to include the details of the oral traditions taken in your notes.

**Add to the map**

The news article ‘Aboriginal stories of sea level rise preserved for thousands of years’ refers to a story from what is now known as Botany Bay in New South Wales. Add the details to your map.

Does the article repeat any of the other stories?

**Pair task**

Find the quoted text in the article ‘Revealed: how Indigenous Australian storytelling accurately records sea level rises 7000 years’.

Discuss and write down what the quotes tell you about the event and the value the researchers are placing on the information being shared by the First Nations Peoples.

**Watch and answer**

Watch the video *Aboriginal memories of sea level rise: storylines from 7000 years ago*.

Answer the questions supplied, then discuss your understanding as a class.
### Chart: Teacher guidance

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<th><strong>Teacher guidance</strong></th>
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<td><strong>Video</strong> Watch this video of Associate Professor Nicholas Reid, from the University of New England's Oorala Aboriginal Centre, <em>Aboriginal memories of sea level rise: storylines from 7000 years ago</em>. Some of the vocabulary may need defining for students prior to viewing (06:37): <a href="https://www.kaltura.com/index.php/extwidget/preview/partner_id/424421/uiconf_id/21338692/entry_id/0_xeevjbgb/embed/iframe?&amp;flashvars(streamerType)=auto">https://www.kaltura.com/index.php/extwidget/preview/partner_id/424421/uiconf_id/21338692/entry_id/0_xeevjbgb/embed/iframe?&amp;flashvars(streamerType)=auto</a>.</td>
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| **Questions** – *Aboriginal memories of sea level rise: storylines from 7000 years ago*  
  - What do Western scientists say? According to Professor Reid how much lower were sea levels 20000 years ago? (00:50)  
  - How many kilometres past the Coffs Harbour coast would you have had to walk to reach the sea? (01:10)  
  - What do First Nations Peoples say? Professor Reid mentions that the stories shared with him from lots of different geographical locations are all about rising sea levels. What does the shared topic of these stories tell the researchers? (03:00)  
  - What’s the window of time that all the stories sit within? (04:30)  
  - What does that shared window of time tell the researchers about the age of the oral traditions being studied? (04:40)  
  - Why are there no stories about sea levels rising elsewhere in the world? (5:02)  
  - What’s the professor’s final message regarding how all Australians should feel about the knowledges and histories of First Nations Peoples? (05:33) |  |
| **Video** Students could also watch this 2019 clip giving archaeological evidence of sea level rise in Europe. It’s interesting to note that, as Professor Reid mentioned, no oral or written traditions have been found outside of Australia (01:59): [https://www.reuters.com/video/watch/idOVBAIDMCR](https://www.reuters.com/video/watch/idOVBAIDMCR). |  |
| **Help students connect with and acknowledge the importance of culture and examine the living cultures of First Nations Peoples, which have adapted and survived since colonisation.** |  |
| **Oral culture and traditions** Indigenous cultures are oral; knowledges are handed down verbally. They are held in people’s memories; embedded in the land, water and stars; the rock formations; the riverbeds and the constellations. And it’s quite an amazing feat – imagine trying to repeat the same story again and again, generation after generation, without losing or messing up any part of it. Keeping the knowledges intact is done with great care by **encoding** the information in **oral traditions** of story, song, dance and art. Details are also kept safe across thousands of years by minimising the number of people who are allowed to be the custodian of any particular knowledge. Some knowledges are only for women, some only for men; and knowledge is passed down only when the recipient is ready. Custodians of the most important knowledge are **Elders** (Hamacher 2016). These ‘libraries’ of oral traditions include knowledges of laws, kinship, botany, animal husbandry, astronomy, mathematics and much more besides. |  |
| **Summarise** What’re the main points discussed in the student handout? Write your summary as dot points.  
**Reading and questions** Read **BBC News Australia**’s article, ‘Aboriginal legends reveal ancient secrets to science’. Answer the questions supplied (see ‘Useful resources’). |  |
## Teacher guidance

While there are other oral cultures around the world, Aboriginal and Torres Strait cultures have the world's longest held oral traditions (Nguyen-Robertson & Reddiex 2018). Historically, oral traditions of Aboriginal and Torres Strait Islander Peoples haven't been given much respect. Through ignorance and a sense of superiority, the stories have often been considered just that – ‘made up’ stories. Or they are dismissed because they are not written down and are therefore ‘inferior’. But there's lots to be gained from paying more attention, treating all cultures with respect, treating all cultural knowledges with respect, and recognising their true value. Ethical protocols are changing the way Western researchers think about the knowledges of First Nations Peoples.

Scientists now agree that the knowledges of Aboriginal and Torres Strait Islander Peoples, that date back to the start of living memory (Heathcote 2018), are key to understanding the geology of this continent. It's now understood that oral traditions are filled with details of the natural world (Coopes 2015). Many stories have been shared by Indigenous cultures that refer to tsunamis, volcanoes and other geological events. The hope is that more can be understood of the geological events by acknowledging and respecting those stories. The information that the oral traditions include can be used to locate sites of geological events, and it can be merged with Western scientific data to confirm the dates and details offered by both (Coopes 2015).

There are oral records from as long as 4700 years ago describing a meteoroid that crashed to Earth in the Northern Territory and the crater it left behind. Some oral traditions date even further back to when Tasmania was separated from the mainland by rising sea levels. These records have been successfully handed down through generations (Nguyen-Robertson & Reddiex 2018).

### Useful resources

**Articles**


### Questions

- ‘Aboriginal legends reveal ancient secrets to science’
  - Describe your understanding of the story told by Luritja people of the Northern Territory?
  - When and how was the site discovered by non-Indigenous people?
  - What information did the story of Gunditjmara people tell about the tsunami?
  - What did the core samples show?
  - How did Mr Hamacher ‘give back’ to the communities that helped with his research?
Teacher guidance

Help students critically and creatively process and demonstrate their learning on this topic by exploring meaningful ways to respond. Ask students to come up with their own ideas about what they can do.

**Meteor craters** (four sites)

The Aboriginal Astronomy site has short overviews for the four craters, plus a number of additional sources in the blog and media section: [http://www.aboriginalastronomy.com.au/content/topics/craters/](http://www.aboriginalastronomy.com.au/content/topics/craters/).

**Rising sea levels**


**Volcanoes** (five sites and oral traditions)


Earth Science Australia includes an oral tradition relating to Yidjam (Lake Eacham), Barany (Lake Barrine), Ngimun (Lake Euramo): [http://www.earthsci.org/aboriginal/Ngadjonji%20History/antquity/history2.html](http://www.earthsci.org/aboriginal/Ngadjonji%20History/antquity/history2.html).

Ideas for student activities

**Group presentation**
Find out more about a geologically and culturally significant site in Australia.

Conduct further research into the geological and cultural details of the site. Use the 'Search' function within downloaded documents to help find what you’re looking for.

Create a visual report to present to the class. Explain what causes the craters, volcanoes or tsunamis, and how First Nations Peoples remember the event. Use the Ninti One guide to also recommend the three most important ethical protocols that should be used when researching together with First Nations People.

Be sure to acknowledge First Nations People who are the holders of the knowledge you share.

Make an effort to find out how to pronounce Indigenous words.

Reports could be presented to other classes or displayed in the school library.
### Teacher guidance


Culture Victoria's site includes the oral tradition of Budj Bim – *Dhauwurd Wurrong: the creation of Budj Bim*:

### What next?

There are many ways you can personally respond to your knowledge of this issue that can add to both your own and others’ understanding:

- **Find** out and pay a visit to a local site of geological and cultural significance.
- **Show** your respect for First Nations Peoples’ knowledges of and custodianship of the land by using original location names.
- **Share** what you find out in this study with others.

### Other resources


### References

- Ball, R 2015, ‘STEM the gap: science, technology, mathematics and engineering belong to us mob too’, *Australian Quarterly*, viewed 13 May 2020, [https://www.academia.edu/9310307/STEM_the_gap_Science_technology_mathematics_and_engineering_belong_to_us_mob_too](https://www.academia.edu/9310307/STEM_the_gap_Science_technology_mathematics_and_engineering_belong_to_us_mob_too)
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