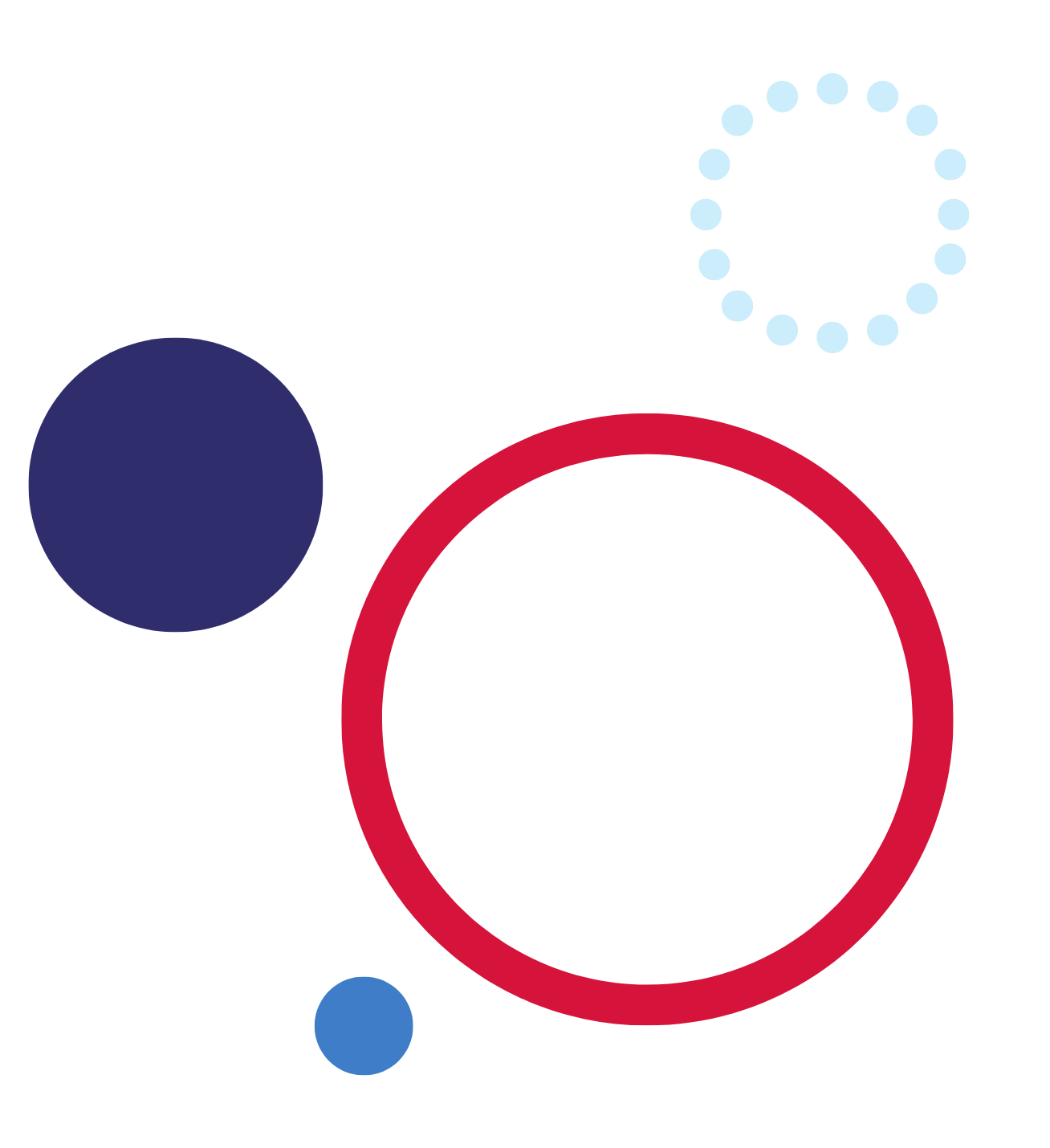
# Stage 4 Geography: Interconnections



This resource has been designed to support teachers by providing a range of tasks based on syllabus content. Tasks can be incorporated into context driven teaching and learning programs in full or can be used to supplement existing programs. All content is textbook non-specific to ensure equity.

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## Overview

Students focus on the connections people have to places across a range of scales. They examine what shapes people’s perceptions of places and how this influences their connections to places. Students explore how transport, information and communication technologies and trade link people to many places. They explain the effects of human activities, such as production, recreation and travel, on places and environments in Australia and across the world and investigate sustainability initiatives and possible futures for these places.

### Key inquiry questions

* How are people and places connected to other places?
* What role does technology play in connecting people to people, goods, services and information in other places?
* What are the consequences of a globally connected world for people and places?
* Why are interconnections important for the future of places and environments?

### Outcomes

A student:

* **GE4-2** describes processes and influences that form and transform places and environments
* **GE4-3** explains how interactions and connections between people, places and environments result in change
* **GE4-4** examines perspectives of people and organisations on a range of geographical issues
* **GE4-5** discusses management of places and environments for their sustainability
* **GE4-7** acquires and processes geographical information by selecting and using geographical tools for inquiry
* **GE4-8** communicates geographical information using a variety of strategies.

### Related Life Skills outcomes

* **GELS-1** recognises features and characteristics of places and environments
* **GELS-2** demonstrates an understanding that places and environments change
* **GELS-3** explores interactions and connections between people, places and environments
* **GELS-4** recognises perspectives of people and organisations on a range of geographical issues
* **GELS-5** explores management of places and environments
* **GELS-6** investigates differences in human wellbeing

Outcomes referred to in this document are from the [Geography K-10 Syllabus](http://syllabus.nesa.nsw.edu.au/hsie/geography-k10/) © 2015 NSW Education Standards Authority (NESA) for and on behalf of the Crown in right of the State of New South Wales.

## Capacity matrix

**Note:** Prior to this learning sequence, students should be explicitly taught definitions for the terms ‘globalisation’ and ‘modernisation’.

Explain to your class how to use the [Capacity matrix](#_Interconnections_concepts_and) (Appendix). Ensure students understand and can distinguish between information, knowledge, know-how and wisdom categories in the matrix.

A capacity matrix can be used as a formative assessment tool that clarifies student understanding of course concepts for the duration of the learning sequence. For more information, see Quality Learning Australasia’s [The Capacity Matrix](http://www.qla.com.au/capacity-matrix). Please note that teachers need to register to access the free resources on this site.

Review the [Capacity matrix](#_Interconnections_concepts_and) for geographical terms relating to the topic ‘Interconnections’. Identify where you think you are according to the matrix categories for each geographical concept. Using different colours for the matrix criteria, shade or tick where you think you are according to the matrix categories for each geographical concept or glossary term. The criteria for the matrix include:

* information – at this level, you have heard of the term and/or you can recall basic facts about it
* knowledge – at this level, you can explain and know what the term or concept means
* know-how – at this level, you can draw connections between this geographical term or concept and relate it to other concepts or situations
* wisdom – at this level, you can use the term or concept in new contexts or teach others.

You will revisit this matrix throughout the learning sequence.

## Learning sequence 1: Interconnections of travel

Students:

* investigate the influences on and effects of people’s travel and recreational, cultural or leisure connections with different places for the future, for example: (**ACHGK065, ACHGK069**)
* analysis of patterns and trends in people’s travel, recreational, cultural and/or leisure activities
* examination of the impact of people’s travel, recreational, cultural and/or leisure activities on the future of places
* explanation of the impacts of selected travel, recreational, cultural or leisure activity on a place, implications for the future of that place and strategies to achieve sustainability.

### Defining and identifying interconnections

In this topic we are learning about the interconnections between travel, trade, technology, and production and consumption. Consider the ways our world interconnects. Students complete Table 1 with a partner.

Table 1 – Interconnections of travel, trade, technology, and production and consumption

|  |  |  |
| --- | --- | --- |
| Aspect | Travel | Trade |
| Technology |  |  |
| Production and consumption |  |  |

**Note:** The following task requires students to access [Google Forms](https://app.education.nsw.gov.au/digital-learning-selector/LearningTool/Card/89) and conduct a year group or whole school survey. It is suggested the survey is limited to no more than 50 students. Google forms can be shared in NSW public schools via a link.

Ensure students understand that the type of question and method of question will alter their analysis and results. For the purpose of this task, encourage students to include closed-ended quantitative questions. These questions will provide automated graphs which are easier to analyse.

Working in small groups, write and conduct a [Google Forms](https://app.education.nsw.gov.au/digital-learning-selector/LearningTool/Card/89) survey of your year group or entire school. Base your questions around the interconnection themes of travel, trade, technology, and production and consumption. Below are some example questions, which you should adjust to make them close-ended:

* Have you travelled overseas in the past 5 years?
* Have you travelled interstate in the past 5 years?
* What is your main mode of transport?
* Where do you source your food from?
* What country was the clothing you are wearing made in?
* Do you think about buying Australian made items when you purchase goods?
* Think about the different types of technology you use daily. Which do you use the most?
* How important is technology to achieving your daily responsibilities?

In your small group, review the survey results and produce a short [PowerPoint](https://app.education.nsw.gov.au/digital-learning-selector/LearningTool/Card/114) presentation outlining your findings.

Use the peer assessment marking criteria in Table 2 to assess your group’s work and the work of one other group in your class. Rating 4 represents well achieved and no area for improvement.

Table 2 – Peer assessment: Oral presentation

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Criteria | 4 | 3 | 2 | 1 |
| Draws conclusions about the interconnections of your class or entire school by addressing each of the following:  travel, trade, technology, production and consumption |  |  |  |  |
| Uses survey results to illustrate information about each interconnection:  travel, trade, technology, production and consumption. |  |  |  |  |
| Team collaborates well and provides an engaging presentation. |  |  |  |  |

Provide 3-4 suggested areas of improvement for at least one other group’s presentation.

### Patterns and trends in people’s travel

Consider places you have travelled to. Identify and explain why certain places have a significant or special meaning to you.

Reflect on reasons why people travel. Conduct an interview with a person who has travelled. Develop no more than 10 questions for your interviewee to answer about where, why, and how they travelled. Share your findings with your class. Below are some sample interview questions:

* Why do you travel?
* Where have you travelled in your state?
* Where have you travelled interstate?
* Describe a positive travel experience.
* How important is travel to you?

Reflect on your interview and write a one-page summary. Include in your summary the following:

* Overview – who you interviewed, why you chose them and what you aimed to find out
* Summary of findings – discussion of response to interview questions
* Conclusion – reflect on how successful the interview process was and identify what you would change next time.

Read the article [What was flying like in the 1950s and 1960s compared to now](https://www.news.com.au/travel/travel-advice/flights/what-flying-was-like-in-the-1950s-and-1960s-compared-to-now/news-story/7f8a6666f844a3c504baa36a111f60d6) and complete Table 3.

Table 3 – Comparing travel

|  |  |  |
| --- | --- | --- |
| Category | 1950s and 1960s | 2010s |
| Time taken to travel to London on a plane |  |  |
| Cost of flying |  |  |
| Food and entertainment on board |  |  |

Use [How air travel has changed in every decade since 1920](https://www.loveexploring.com/gallerylist/86315/how-air-travel-has-changed-in-every-decade-from-the-1920s-to-today) and further research as a stimulus for a news report in a school magazine. You are required to report to your peers about the way technology has changed travel around the world. The following criteria will assist as a scaffold for the report:

* Headline that is short and eye-catching. It should demand your readers’ attention. Try to have 5 words or less. Ensure you include a by-line with your name and any relevant locations.
* Lead paragraph that includes the most important information, such as who, what happened, when and where.
* Body paragraph 1 with supporting information. This should include more details about what happened, for example time, place and people involved.
* Body paragraph 2. This should contain any relevant additional background information, for example, what eyewitnesses said.
* Conclusion. Conclude the article with a final statement.

Read [How the typical Aussie holiday has changed over the years](https://www.abc.net.au/news/2017-12-29/how-has-the-aussie-holiday-changed-over-the-years/9275290) and answer the following questions:

* Statistically, how is travel different for Australians today compared to 40 years ago?
* What were the 3 most popular destinations for Australian travellers in 2016?
* In Australia, what age groups are most likely to travel?
* Outline the barriers that existed for Australian families travelling in the 1960s.
* Identify the key barriers that existed for Australian families travelling in 2017.

**Note:** In the following exercise students are required to create a line graph. This can be achieved through drawing a line graph on graph paper or using [Microsoft Excel](https://app.education.nsw.gov.au/digital-learning-selector/LearningTool/Card/104). For more information on using Excel, access [How to make a line graph in Excel (9:03)](https://youtu.be/0jdX22qM8JA).

Watch [Common graphs (2:57)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources/common-graphs) and discuss the characteristics of a line graph.

Use [Microsoft Excel](https://app.education.nsw.gov.au/digital-learning-selector/LearningTool/Card/104) and the information presented in Table 4 to create a line graph that illustrates Australian citizen departures during the period 2018 to 2020, then respond to the following:

* Describe the general pattern of change in Australian citizen departures during the period 2018 to 2020.
* Describe any anomalies in the pattern of change that you have identified.
* In 2 sentences, propose an explanation for the marked decline in Australian citizen departures.

Table 4 – Australian departures, June 2018 to December 2020

|  |  |
| --- | --- |
| Month and year | Australian citizen departures |
| June 2018 | 913,000 |
| September 2018 | 951,000 |
| December 2018 | 1,039,000 |
| June 2019 | 905,000 |
| September 2019 | 973,000 |
| December 2019 | 1,056,000 |
| June 2020 | 7,280 |
| September 2020 | 11,700 |
| December 2020 | 12,090 |

Conduct a peer assessment by swapping and checking your peer’s line graph against the following marking criteria in Table 5. Make suggestions for improvement.

Table 5 – Peer assessment: Line graph

|  |  |  |  |
| --- | --- | --- | --- |
| Criteria | Yes | No | Comments |
| Title clear and concise |  |  |  |
| Axis labelled correctly |  |  |  |
| Line graph presented |  |  |  |
| Scale of measurement on axis appropriate |  |  |  |
| Spelling correct |  |  |  |
| Graph illustrated neatly |  |  |  |

Answer the following in a half-page response: ‘Describe how travel has changed for Australian citizens over the past 40 years and explain why these patterns have changed’.

### The impact of travel

Complete a [See, Think, Wonder](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/638) summary of Figure 1. Table 6 will support your response.

Figure 1 – Bali Ceremony



"[Bali Ceremony](https://www.flickr.com/photos/39551170@N02/7070544913/)" by [Simon\_sees](https://www.flickr.com/photos/39551170@N02/) is licensed under [CC BY 2.0](https://creativecommons.org/licenses/by/2.0/).

Table 6 – See, Think, Wonder summary

|  |  |  |
| --- | --- | --- |
| What do you see? | What do you think is happening? | What do you wonder or have questions about? |
|  |  |  |

Use an atlas or Google Maps to label the map of [Bali](https://commons.wikimedia.org/wiki/File:Bali_-_2.png) and its neighbours. Include:

* Jakarta
* Indonesia
* Singapore
* Malaysia
* Philippines
* Papua New Guinea
* Australia
* Java Sea
* Banda Sea
* Timor Sea.

Using your labelled map of Bali answer the following questions:

* Which country does the island of Bali belong to?
* Which sea and ocean borders Bali?
* Describe Bali’s location in relation to Australia.

**Note**: Students will require explicit instruction on how to draw a topographic cross section. [Cross sections and transects (2:53)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources/cross-sections-and-transects) outlines this geographical skill.

Using Terrain on [Google Maps Bali](https://www.google.com/maps/@-8.387758,115.644675,13.83z/data=!5m1!1e4) draw a cross section between Lempuyang Temple and Japanese Shipwreck Point.

Swap your completed topographic cross section with a peer and conduct a peer assessment using the marking criteria in Table 7.

Table 7 – Peer assessment: Topographic cross section

|  |  |  |  |
| --- | --- | --- | --- |
| Criteria | Yes | No | Comments |
| Title clear and concise |  |  |  |
| Axis labelled correctly |  |  |  |
| Cross section presented |  |  |  |
| Scale of measurement on axis appropriate |  |  |  |
| Spelling correct |  |  |  |
| Cross section illustrated neatly |  |  |  |

Visit [Look around Bali (5:35)](https://youtu.be/OhhprQi0MX4) and rewrite the following false statements as true statements:

* Bali has absolute pristine beaches with no litter or rubbish.
* The temples found in Bali are well protected from tourist activities.
* The temples in Bali are overcrowded with tourists.
* Traditional cultural practices are not shared with tourists in Bali.

**Note:** In the following task students are required to create a line graph. This can be achieved through drawing a line graph on graph paper or using [Microsoft Excel](https://app.education.nsw.gov.au/digital-learning-selector/LearningTool/Card/104). For more information on using Excel, access [How to make a line graph in Excel (9:03)](https://youtu.be/0jdX22qM8JA).

Plot a line graph for foreign visitor numbers to Bali using Table 8. You will need to choose an appropriate scale, label the axis and choose an appropriate title.

Table 8 – Foreign visitors to Bali

|  |  |
| --- | --- |
| Year | Number of foreign visitors (million) |
| 2010 | 2.2 |
| 2011 | 2.5 |
| 2012 | 2.7 |
| 2013 | 3.2 |
| 2014 | 3.7 |
| 2015 | 4 |
| 2016 | 4.9 |
| 2017 | 5.6 |
| 2018 | 6 |
| 2019 | 6.3 |
| 2020 | 0.8 |

Conduct a peer assessment by swapping and checking your peer’s line graph against the following marking criteria in Table 9. Make suggestions for improvement.

Table 9 – Peer assessment: Line graph

|  |  |  |  |
| --- | --- | --- | --- |
| Criteria | Yes | No | Comments |
| Title clear and concise |  |  |  |
| Axis labelled correctly |  |  |  |
| Line graph presented |  |  |  |
| Scale of measurement on axis appropriate |  |  |  |
| Spelling correct |  |  |  |
| Graph illustrated neatly |  |  |  |

Using your line graph answer the following:

* How many foreign visitors were there to Bali in 2011?
* How many foreign visitors were there to Bali in 2019?
* How many foreign visitors were there to Bali in 2020?
* Describe the general trend for foreign visitors to Bali.
* Predict the likely future trend for foreign visitors to Bali if COVID-19 persists.
* Predict the likely future trend for foreign visitors to Bali if COVID-19 no longer persists.
* Suggest implications for Bali tourism providers if COVID-19 persists.

**Note:** The article [Over-exposure to Tourism in Bali, Indonesia](https://storymaps.arcgis.com/stories/eb1f5fbd18fc4c53bbde0713e06ab111) is very detailed in content and you may prefer to read aloud to the students and stop and explain where necessary.

With a partner visit [Over-exposure to Tourism in Bali, Indonesia](https://storymaps.arcgis.com/stories/eb1f5fbd18fc4c53bbde0713e06ab111), and discuss the [cause and effect](https://literacyideas.com/teaching-cause-effect-in-english/) relationships of tourism for the Balinese economy, society and environment.

With a partner, complete Table 10 to illustrate the interconnection of tourism with Bali. Examples of linking statements include: resulted in, led to, caused, initiated, had the effect of, will cause, ended in, will lead to.

Table 10 – Cause and effect explanation table

|  |  |  |
| --- | --- | --- |
| Cause | Linking phrase | Effect |
| Coronavirus travel restrictions |  | economic loss of $10 billion in 2020 |
| Reduced international visitors particularly from China and Australia |  | loss of jobs and income for Balinese residents |
| Bali’s experience in over-tourism | resulted in |  |
|  | led to | an informal economy that supported beggars and criminal activity |
| Sustainable tourism |  |  |
| Banned single use plastic | will cause |  |
| Optimal level of tourists |  | a more sustainable tourism industry in Bali supporting the economy, society and environment |

**Note:** A circle of influence diagram is required for the next task. Provide students with a printed copy or present on a classroom board. [Emerging RN Leader](https://www.emergingrnleader.com/staying-in-our-circle-of-influence/) provides an example of the circle of influence diagram. Students should aim to identify what would be in a person’s control and what would not.

Consider the circle of influence diagram provided by your teacher. [Brainstorm](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/542) the circle of influence for a Balinese resident concerned about a sustainable future but reliant on tourism for their livelihood.

Watch [The year Bali tourism stopped (28:05)](https://youtu.be/lF3mnuxjPCw) and visit the ABC News site to read [The year Bali tourism stopped](https://www.abc.net.au/news/2021-03-09/bali-return-of-seaweed-farming-ceningan-lembongan-penida-covid/13202170). As a class complete a [cause and effect chain](https://educationoasis.com/graphic-organizers/cause-effect-chain/) on ‘Lost tourism in Bali’.

Complete a long response for the following question ‘Explain how tourism has changed and affected Bali’. In your response refer to Bali’s economy, society and environment.

Reflect on your long response by completing the self-assessment in Table 11.

Table 11 – Self assessment: explanation long response

|  |  |  |
| --- | --- | --- |
| Have you included | Yes/No | Thoughts on how to improve |
| Clear and relevant title | Y/N |  |
| Introductory paragraph with a concise opening sentence | Y/N |  |
| A paragraph for each of the following factors: economy, society and environment | Y/N |  |
| 2-3 paragraphs with examples of how tourism has caused change and affected Bali | Y/N |  |
| Common use of linking phrases throughout response, for example, led to, as a result, due to | Y/N |  |
| Used relevant geographical terms and concepts | Y/N |  |
| A conclusion that summarises your explanation | Y/N |  |

## Learning sequence 2: Interconnections of technology

**Note:** In this learning sequence students will first explore the concept of technology and how technology has increased global interconnections. They will then explore how they are personally connected to the world through the use of technology and the role technology plays in making their lives easier.

The syllabus requires students to investigate the way transport technologies connect people to services, information, and people. This is explored through a case study of Japan’s bullet train and a comparison with Australia’s inland railway.

Students:

* investigate the way transportation and information and communication technologies are used to connect people to services, information and people in other places, for example: (**ACHGK066**)
* explanation of how transport technologies connect people to places
* examination of how information and communication technologies increase people’s connections to services, information and people in other places
* assessment of the impact of increasing global connectivity on people and places
* information and communications technologies.

### Defining and identifying technology

Watch [What is Technology? (1:29)](https://youtu.be/Giiz81_uzK8). Identify the different technologies you have used since leaving home for school today and answer the question, ‘How and why is technology important in your daily life?’

Watch [How Did The World Become Interconnected? (10:42)](https://youtu.be/cLOQJVv77w8) and answer the following questions:

* How are people and places connected to other places?
* What role does technology play in connecting people to other people, goods, services and information in other places?
* What are the consequences of a globally connected world for people and places?
* Why are interconnections important for the future of places and environments?

Watch [A Better Connected World (3:06)](https://youtu.be/oaNfeClDMu0) and identify the different ways you use your mobile phone.

In small groups consider the purpose and role of mobile phone apps in connecting people. Complete Table 12.

Table 12 – Mobile phone app connections summary

|  |  |  |
| --- | --- | --- |
| Mobile phone app | Purpose | How the app connects people |
| TikTok |  |  |
| Instagram |  |  |
| Facebook |  |  |
| Snapchat |  |  |
| Spotify |  |  |
| Service NSW |  |  |

Access [How many smartphones are in the world?](https://www.bankmycell.com/blog/how-many-phones-are-in-the-world) and generate 3 questions to swap with peers in the class. Questions should directly relate to change in global access to mobile phone technology. Answer 3 questions generated by your peer.

Read [Where Is the iPhone Made?](https://www.lifewire.com/where-is-the-iphone-made-1999503) and [How iPhone is made: The global assembly line](https://financesonline.com/hello-world-the-economics-of-iphone/) and answer the following questions:

* Where are these materials sourced?
* How many countries are involved in the production?
* Roughly how many people are involved in creating one phone or laptop?
* How many different journeys does the product make?
* What is the intended lifespan of the product?
* Where does the product go when it has been used?
* How are the workers who create the product treated?

With a partner read [New research finds 95% of teens have access to a smartphone; 45% online ‘almost constantly’](https://www.geekwire.com/2018/new-research-finds-95-teens-access-smartphone-45-online-almost-constantly/). Use [Google Forms](https://app.education.nsw.gov.au/digital-learning-selector/LearningTool/Card/89) to develop and distribute a survey in your school to understand the ways and length of time your peers are using smartphones. Ensure you:

* compose 8-10 relevant survey questions
* include a balance of open and closed-ended questions
* choose how you will distribute the survey, for example, a link in an email printing, distributing, and collecting hard copies
* have your teacher approve your questions and process prior to distributing.

**Note:** [Canva](https://app.education.nsw.gov.au/digital-learning-selector/LearningTool/Card/653) is an online graphic design tool. It has templates teachers and students can use to design posters, infographics, and diagrams. It is free to sign up and students under the age of 13 are required to have permission from parents to register.

With a partner use [Canva](https://app.education.nsw.gov.au/digital-learning-selector/LearningTool/Card/653) to create an infographic to illustrate your survey results.

### Interconnections between transport technologies and people and places

Read [Shinkansen high-speed train network in Japan](https://www.japanstation.com/shinkansen-high-speed-train-network-in-japan/) and answer the following questions:

* What is the Shinkansen?
* Identify the characteristics of the Shinkansen that make it a cultural icon.
* How fast do the Shinkansen travel?
* Outline a brief history of when the first Shinkansen was built in Japan and how it has changed.
* Identify benefits of the Shinkansen transport technology.
* What are possible future scenarios for Shinkansen trains in Japan?

In small groups propose a possible version of Shinkansen in Australia. Present your ideas as a pitch to the class. Considerations to include in the pitch:

* Identify 2 Australian cities that could be connected via the Shinkansen.
* How long does it currently take to travel between these 2 destinations?
* How much time would a Shinkansen save the average traveller?
* What features would be necessary to include in an Australian version of a Shinkansen?
* Outline challenges that may have to be overcome when constructing and running a Shinkansen in Australia.

Engage in a [Think-Pair-Share](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/645), answering the question ‘What are the biggest challenges confronting transport of people and goods in Australia?’

Access the Australian Rail Track Corporation’s [What is Inland Rail](https://inlandrail.artc.com.au/what-is-inland-rail/) and produce an information brochure about the venture. In the brochure ensure you include:

* a brief description of the purpose of inland rail
* general facts
* an illustrative map showing where the rail will be located.

Consider how the inland rail will benefit people and places. Brainstorm the benefits into Table 13.

Table 13 – Inland rail benefits

|  |  |
| --- | --- |
| Benefits to people | Benefits to places |
|  |  |

### Impact of global connectivity on people and places

Watch [Globalization explained (4:18)](https://youtu.be/JJ0nFD19eT8) and define the term globalisation.

Consider the different ways globalisation has linked people and places around the world. Identify examples of globalised exchanges in Table 14.

Table 14 – Exchanges in a globalised world

|  |  |
| --- | --- |
| Exchanges in our globalised world | Examples |
| Products and economic goods |  |
| Services |  |
| Cultural goods |  |
| Languages |  |

**Note:** Cartoons address current geographical issues. The next task in the learning sequence requires students to be provided with a cartoon that depicts the impacts of the interconnections of globalisation. [Environmental cartoons](http://www.seppo.net/cartoons/displayimage.php?pid=659) may prove helpful in acquiring a cartoon for the task.

Your teacher will provide you with a cartoon that illustrates globalisation. For the cartoon provided, answer the following questions:

* What is the cartoon title?
* Who is the cartoonist who drew the cartoon?
* What is the date of the cartoon?
* What is the cartoon source?
* What is the event or issue that inspired the cartoon?
* Who is portrayed in the cartoon (if any)?
* How are the characters portrayed?
* Are there symbols in the cartoon? What are they and what do they represent?
* Are there captions, speech bubbles, labelling and details to explain the cartoon?
* How did the words in the cartoon help you clarify the meaning of the cartoon?
* What is the cartoonist’s opinion about the topic portrayed in the cartoon?
* What was the desired effect of the cartoon?
* Do you agree or disagree with the cartoonist’s opinion? Why?
* What special interest groups would agree or disagree with the cartoon’s message? Why?

## Learning sequence 3: Interconnections of trade

**Note:** In this learning sequence, students will first explore the interconnections of the global clothing industry. They will explore the impact of clothing production through the study of countries in Asia. Using local case studies of Australian farmers’ markets, students will develop an understanding of the way goods and services are connected across a range of scales. Later in the learning sequence, students will develop knowledge and understanding of global shipping routes and challenges associated with transporting goods around the world through a case study of the Suez Canal crisis.

Students:

* investigate the ways places and people are interconnected through trade in goods and services across a range of scales, for example: (**ACHGK067**)
* identification of trade connections in Australia eg local farmers markets, inter-state business
* examination of a country’s trade links with other countries eg major trade partners, sources of raw materials
* analysis of spatial patterns of global trade eg countries of production and consumption, global shipping and freight routes.

### Interconnections of the clothing industry

**Note:** Some of the following learning materials may be considered controversial. Please consult the [Controversial Issues in Schools Policy](https://education.nsw.gov.au/policy-library/policies/pd-2002-0045) and discuss with your supervisor prior to following the learning sequence.

Watch [The life cycle of a t-shirt (6:03)](https://youtu.be/BiSYoeqb_VY). The stages of the T-shirt life cycle mentioned in the video are below. While you are watching, take notes on these different stages:

* farming of cotton
* harvesting the cotton
* spinning the cotton into threads
* knitting the threads into fabric
* dyeing the fabric
* stitching the T-shirts
* distributing the T-shirts
* consumers using the T-shirts.

Watch [The 2 Euro T-Shirt – A Social Experiment (1:44)](https://youtu.be/KfANs2y_frk) and answer the following questions:

* Would you donate or buy?
* How often do you think about where your clothing is made?
* Did the video make you want to think about where your goods are made?

**Note:** Students will need to be provided with a blackline world map for the following task. You may like to access [World Map Blank](https://worldmapblank.com/blank-map-of-world/) for a suitable map.

Read [Factory collapse a ‘wake-up call’ for fashion industry](https://www.abc.net.au/news/2013-04-30/bangladesh-building-collapse-fashion-industry/4661162?nw=0&r=Gallery) regarding a garment factory building collapse in Bangladesh and complete the following:

* Using an atlas, locate Bangladesh and shade and label on the world map provided by your teacher.
* Explain what happened in Bangladesh in 2013.
* Why did this event occur and what contributed to the high loss of life?

**Note:** The following task can be taught using the table structure or have the class stand along an opinion continuum line. Ask each question aloud and have students move along the line to where their opinion best fits. You can further extend this task by having students discuss their response or convince others to change their opinion.

Watch [The True Cost (2:34)](https://youtu.be/OaGp5_Sfbss). Complete Table 15 by placing a tick where your opinion best fits: strongly agree, agree, neutral, disagree, strongly disagree.

Table 15 – Opinion continuum summary

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Statement | Strongly agree | Agree | Neutral | Disagree | Strongly disagree |
| It is fair for us to buy and wear clothing made in factories as depicted in the video. |  |  |  |  |  |
| I would pay an extra $5 on a $10 item to reduce the poor conditions for workers depicted in the video. |  |  |  |  |  |
| Even if there was a price increase the workers depicted in this film would not benefit. |  |  |  |  |  |
| The only solution is government legislation. |  |  |  |  |  |

**Note:** The article [Clothing Brands’ Business Practices Fuel Factory Abuses](https://www.hrw.org/news/2019/04/23/clothing-brands-business-practices-fuel-factory-abuses) may require you to read aloud and stop to explain content in paragraph sections or alternatively the following task is recommended for HPGE students.

Read [Clothing Brands’ Business Practices Fuel Factory Abuses](https://www.hrw.org/news/2019/04/23/clothing-brands-business-practices-fuel-factory-abuses) and describe the 5 practices that contribute to poor conditions for garment factory workers.

Consider the different perspectives that participants in the clothing trade may have. For each of the following, brainstorm what the person might feel and want for their future in relation to the clothing trade and complete Table 16:

* cotton grower
* farmer whose land is next to a cotton farm
* organic cotton grower
* Indian textile factory worker
* Bangladesh sewing factory worker
* Person purchasing clothing in Australia.

Table 16 – Perspectives of clothing trade

|  |  |  |
| --- | --- | --- |
| Stakeholder | Feel | Want for the future |
| Cotton grower |  |  |
| Farmer next to a cotton farm |  |  |
| Organic cotton grower |  |  |
| Indian textile factory worker |  |  |
| Bangladesh sewing factory worker |  |  |
| Person purchasing clothing in Australia |  |  |

**Note:** Students will need to be provided with a copy of [Kmart’s Ethical Sourcing Code](https://www.kmart.com.au/sourcingethically/) (English) pages 4 and 5.

Read the extract from Kmart’s Ethical Sourcing Code provided by your teacher. Identify and describe 3 ways Kmart intends to protect the workers who produce their garments.

Shopping ethically is one way people can reduce the impact they have on places and others globally. From the following list of strategies choose TWO that you already use or would like to use and write a paragraph on each explaining your practices and what positive impact you think they have:

* buy Australian Made, preferably locally
* where possible buy fair trade products or items supplied by fair trade approved companies
* recycle clothing
* consider making your own clothing
* check where clothing is made.

Consider what you have learnt about the interconnections of the clothing industry and complete a [Plus, Minus, Interesting](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/551) (PMI) chart:

* plus – something you enjoyed in the learning sequence
* minus – the task you had the most difficulty with
* interesting – the task or point of information you found interesting in the learning sequence.

### Trade connections in Australia – Australian farmers’ markets

**Note:** Use [Australian Farmers’ Markets Association](https://farmersmarkets.org.au/definitions/) to learn about the nature and context of Australian farmers markets.

Conduct a [Think-Pair-Share](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/645) by thinking about the following questions, sharing your thoughts with the person sitting next to you and then collaborating with the whole class to complete responses. Questions to include in your Think-Pair-Share:

* What is a farmers’ market?
* Who can sell products and goods at a farmers’ market?
* Identify the types of products and goods that can be sold at a farmers’ market.
* What types of products or goods should not be sold at a farmers’ market?
* Outline the benefits of purchasing products or goods at a farmers’ market.
* Describe some likely challenges or costs of purchasing products or goods at a farmers’ market.

**Note:** The site [Australian Farmers’ Markets Association](https://farmersmarkets.org.au/definitions/) may prove challenging for Stage 4 students to navigate and read. It is suggested the class read the site collectively and discuss prior to commencing the [Canva](https://app.education.nsw.gov.au/digital-learning-selector/LearningTool/Card/653) graphic organiser.

Use [Brainstorming](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/542) to help students scaffold a response to the farmers’ markets brainstorm.

Visit [Australia’s Farmers’ Market Association](https://farmersmarkets.org.au/definitions/) and read the rules that apply to Australian Farmers Market managers, suppliers and participants. Use [Canva](https://app.education.nsw.gov.au/digital-learning-selector/LearningTool/Card/653) or another graphic organiser to create a farmers’ market rules poster that could be displayed at your local farmers’ market or on a social media site to inform the public about the trade supply rules that exist.

Use the articles [Why more people are buying from farmers’ markets](https://ontherecordunisa.com.au/2019/11/13/why-more-people-are-buying-from-farmers-markets/), [Farmers’ market study shows benefits for consumers, producers and community](https://www.farmstyle.com.au/news/farmers%E2%80%99-market-study-shows-benefits-consumers-producers-and-community) and further research to brainstorm why Australians buy produce at farmers markets.

### Trade connections in Australia – Nerada Tea

**Note:** Using the [Nerada Tea](https://neradatea.com.au/) website, students will conduct a case study.

Students will need to be provided with a blackline world map for the following task. You may like to access [World Map Blank](https://worldmapblank.com/blank-map-of-world/) for a suitable map.

Use the world map provided by your teacher and [History of the teapot](https://neradatea.com.au/blogs/history/history-of-the-teapot#:~:text=Experts%20generally%20agree%20that%20the,spout%20design%20we%20know%20today.) to create an annotated map that illustrates the global history of trade and consumption of tea.

Using [Google Earth Atherton Tablelands](https://earth.google.com/web/search/Atherton+Tablelands,+QLD/@-17.2701475,145.48084799,-419.99996443a,17762.91458895d,35y,0h,0t,0r/data=CoIBGlgSUgokMHg2OTgyMGE4YjBiOWViNGMxOjB4NDAwZWVmMTdmMjA3MWEwGU3bGmxFRDHAIY3fJYJCL2JAKhhBdGhlcnRvbiBUYWJsZWxhbmRzLCBRTEQYAiABIiYKJAn_JEDI0J84QBH_JEDI0J84wBlhhzKWD91KQCFehzKWD91KwA) in Far North Queensland observe the local towns, nature reserves and agricultural land use.

**Note:** Students will need to be provided with a blackline map of Australia for the following task. You may like to access [d-Maps.com](https://d-maps.com/pays.php?num_pay=281&lang=en) for a suitable map of Australia.

On the map of Australia provided by your teacher locate and label the following:

* Atherton (town)
* Lake Tinaroo
* Gadgarra National Park
* Cairns
* Coral Sea
* The Great Barrier Reef
* Brisbane
* Sydney.

Use [Nerada Making Tea](https://neradatea.com.au/pages/making-tea) to complete a [Canva](https://app.education.nsw.gov.au/digital-learning-selector/LearningTool/Card/653) flowchart that summaries and illustrates the production of tea in the Atherton Tablelands.

Listen to [Homegrown Nerada tea could be bound for UK (9:04)](https://www.abc.net.au/radio/programs/qld-country-hour/homegrown-tea-could-be-bound-for-uk/13385730) and outline the major challenges Nerada has experienced in recent years.

Visit [Nerada Tea proudly Rainforest Alliance Certified](https://neradatea.com.au/blogs/tea-production/nerada-tea-proudly-rainforest-alliance-certified) and outline how Nerada Tea complies with Rainforest Alliance Certification.

**Note:** Use [One-Minute Paper](https://oncourseworkshop.com/self-awareness/one-minute-paper/) to diagnose students’ understanding of the key facts identified in the case study of Nerada Tea.

In one minute, answer the following questions:

* How is Nerada Tea interconnected with people?
* How is Nerada Tea interconnected with the environment?
* How is Nerada Tea important to Australia?

### Global shipping and trade routes

**Note:** A three-way summary strategy can be used to monitor what a student has learnt from a topic or source of information. The first summary of 10-15 words requires students to be very economical with their words. The longer summary requires students to provide more detail and include examples in the summary.

Watch [How a Steel Box Changed the World: A Brief History of Shipping (4:05)](https://youtu.be/0MUkgDIQdcM) and read [Today’s global economy runs on standardized shipping containers, as the Ever Given Fiasco illustrates](https://theconversation.com/todays-global-economy-runs-on-standardized-shipping-containers-as-the-ever-given-fiasco-illustrates-158179) and then complete a three-way summary:

* 10-15 words outlining what the video and article taught you about shipping and trade
* 30-50 word summary outlining what the video and article taught you about shipping and trade
* 75-100 word summary outlining what the video and article taught you about shipping and trade.

Conduct an audit of goods in your school. Identify where each product was made and decide if it was likely to have been transported by container ship. Complete Table 17 to illustrate your findings.

Table 17 – School audit

|  |  |  |
| --- | --- | --- |
| Product | Made in | Likelihood it was shipped |
|  |  |  |

Consider the items identified in your audit of the school. Explain how loss of access to some of these items may impact your learning and engagement at school.

**Note:** Students will need to be provided with a blank world map and atlas for the following task. You may like to access [World Map Blank](https://worldmapblank.com/blank-map-of-world/) for a suitable map.

In pairs read the article [Major Shipping Routes for Global Trade](https://arcb.com/blog/major-shipping-routes-for-global-trade). Use the blank world map and atlas provided by your teacher to locate and label the major shipping routes.

**Note:** [The teacher toolkit 3-2-1](http://www.theteachertoolkit.com/index.php/tool/3-2-1) countdown is an effective summary strategy. In the following exercise explain to students they will need to use each article to complete a 3-2-1 summary exercise.

Students will need to be provided with a blank world map for the following task. You may like to access [World Map Blank](https://worldmapblank.com/blank-map-of-world/) for a suitable map.

Read [Millions of Lego pieces lost 23 years ago are still washing up in Cornwall today](https://www.cornwalllive.com/news/cornwall-news/millions-lego-pieces-lost-sea-3843766) and [28,000 rubber ducks accidently embarked on an epic ocean current study in 1992](https://www.iflscience.com/environment/28000-rubber-ducks-accidentally-embarked-on-an-epic-ocean-current-study-in-1992/) to complete 3 separate statements:

* 3 things I didn’t know before reading these articles
* 2 things that surprised me in these articles
* 1 thing I still do not understand or 1 thing I want to do with my new knowledge.

Use the interactive [Plastic Adrift](http://plasticadrift.org/index.html) to virtually drop a rubber duck in the ocean. On the blank world map provided by your teacher locate where you placed the rubber duck with a red dot and label and shade where your virtual duck simulation indicated it would likely distribute with the ocean currents.

Use the following resources and further research to identify uses for shipping containers. Create an infographic that illustrates the life cycle and uses of shipping containers:

* Figure 2 – Container Home revisited
* [Case study: Christchurch's container mall](https://buchangroup.com/insight/case-study-christchurchs-restart-container-mall/)
* [Shipping container pools](http://shippingcontainerpools.com.au/).

Figure 2 – Container Home revisited



[“Container Home revisited”](https://www.flickr.com/photos/78823104@N00/35032081876) by [etslee](https://www.flickr.com/photos/etslee/) is licensed under [CC-BY-2.0](https://creativecommons.org/licenses/by/2.0/).

Watch [Modern Pirates (4:13)](https://www.abc.net.au/btn/classroom/modern-pirates/10539110) and answer the following questions:

* What does a modern-day pirate look like and describe how this is different to the stereotype for pirates in movies?
* Identify where modern-day pirates are causing problems.
* What effect are pirates having on the shipping industry?
* Briefly describe the situation in Somalia.
* Why did Somali fisherman turn to piracy?
* Describe the impact pirates are having on Somalia.
* Outline the suggested solutions to the problem.
* How has your thinking about modern-day pirates changed since watching the Behind the News (BTN) episode?

Categorise the following interconnections associated with modern-day Somali pirates in Table 18:

* illegal fishing from other nations
* reduced income for fishermen and villages
* civil war broke out in Somalia
* government in crisis
* abandonment of Navy resources
* unable to protect and patrol waters
* illegal dumping of toxic waste from other countries
* polluted waters
* reduced fish stocks.

Table 18 – Modern day Somali pirate interconnections

|  |  |  |
| --- | --- | --- |
| Economic | Political | Environmental |
|  |  |  |

Write a two-minute introduction script to a podcast about modern-day pirates. Ensure that you outline the following in your introduction:

* Why people should listen to your podcast
* Identify current facts about modern-day pirates using [ICC Commercial Crime Services](https://www.icc-ccs.org/index.php/1306-gulf-of-guinea-remains-world-s-piracy-hotspot-in-2021-according-to-imb-s-latest-figures).
* Where in the world’s global shipping routes are pirates operating?
* Identify what will be in the next edition of your podcast.

**Note:** Depending on the classroom cohort you may wish to read the book The Big Ship and the Little Digger. This is a story about the Suez Canal by Ryan Petersen which you could use to introduce the next section of this topic which explores the interruption of trade through the Suez Canal Crisis.

Use the following resources and further research to create a poster illustrating the geographical location, history, general facts and importance of the Suez Canal to global trade:

* Figure 3 – Canal de Suez
* [About Suez Canal](https://www.suezcanal.gov.eg/English/About/SuezCanal/Pages/AboutSuezCanal.aspx)
* [Canal Characteristics](https://www.suezcanal.gov.eg/English/About/SuezCanal/Pages/CanalCharacteristics.aspx).

Figure 3 – Canal de Suez



[“Canal de Suez”](https://commons.wikimedia.org/wiki/File:Canal_de_Suez.jpg) by [YolanC](https://commons.wikimedia.org/wiki/User:YolanC) is licensed under [CC-BY-2.5](https://creativecommons.org/licenses/by/2.5/deed.en).

Read [Teen Kids News – How did a ship get stuck in the Suez Canal?](https://teenkidsnews.com/how-did-a-ship-get-stuck-in-the-suez-canal/) and answer the following questions:

* Identify the purpose of the Suez Canal.
* On average, how many ships pass through the Suez Canal daily?
* What is the maximum ship length allowed in the canal?
* How did a ship get stuck in the canal?
* Outline strategies that have been implemented to move the ship.
* What percentage of the world trade passes through the canal?
* Identify the estimated daily cost of canal closure to trade.
* If a ship must take the alternative route around Africa, how many days will goods onboard be delayed?
* What other reasons are there for the closure of the Suez Canal in the past?
* Outline possible implications for shipping delays caused by the Suez Canal crisis.

Read or listen to the audio recording of [Impact of Suez Canal Crisis on Companies Around the World Could Last Weeks](https://www.forbes.com/sites/edwardsegal/2021/03/31/impact-of-suez-canal-crisis-on-companies-around-the-world-could-last-weeks/?sh=6524c33342d8) and complete a [Think-Pair-Share](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/645) for the following activities:

* Ships are on carefully managed timelines. They must dock into ports at certain times to be loaded and unloaded. How might the blockage of this important trade route affect the availability and prices of products?
* The Suez Canal transports approximately 12% of global shipping containers. Create a flowchart to describe ways the crisis may affect you or your family personally.

Read [From toilet paper to coffee, here are some of the products that could soon be in short supply because of the Suez Canal blockage](https://www.businessinsider.com/toilet-paper-coffee-products-delayed-suez-canal-blockage-impact-2021-3) and identify ways the Suez Canal Crisis impacts Australian consumers.

**Note:** During the Suez Canal Crisis in 2021 social media, particularly Twitter, reported on the event in a comical way. Use examples of social media posts and memes to engage your class in a discussion about the interconnection of social media and trade. You can find some of these at [The best memes about the big stuck ship](https://www.washingtonpost.com/world/2021/03/26/suez-canal-stuck-ship-memes/).

Your teacher will provide you with some images and memes about the Suez Canal crisis. With a partner discuss why the Suez Canal Crisis, a global shipping industry incident, became extremely popular with social media.

## Learning sequence 4: Interconnections of production and consumption

**Note:** In this learning sequence, students will first explore the production and consumption related to macadamia farming in Australia and compare with Kenya. They will then explore the sustainable production of palm oil through a case study of Indonesia.

Students:

* investigate the effects of production and consumption of goods on people, places and environments throughout to world, for example: (**ACHGK068**)
* examination of environmental, social and economic impacts of production and consumption of consumer goods.
* assessment of the effect of production or consumption of goods on ONE place or environment
* explanation of responses by governments, groups and individuals to minimise the effects of production and consumption.

### Production and consumption of Australian grown macadamias

Read [An Australian legend: History and industry](https://www.australian-macadamias.org/consumer/an-australian-legend/history-and-industry/) and [An Australian legend: The macadamia legend](https://www.australian-macadamias.org/consumer/an-australian-legend/the-macadamia-legend/) and describe how the native macadamia and the fruit nut is significant to the First Nations Peoples of Australia.

Use the [National Macadamia Tree Crop Map](https://australianmacadamias.org/industry/news/national-macadamia-tree-crop-map) to identify the key Australian production regions for macadamia nuts.

**Note:** Explicitly teach how to draw a line graph using the video [How to Plot a Line Graph - Pretty Straightforward (2:49)](https://youtu.be/QsbwOQWQqkE).

Plot a line graph for Australian macadamia production, 2010 to 2019 (number of trees), using Table 19. You will need to choose an appropriate scale, label the axis and choose an appropriate title.

Table 19 – Australian macadamia production, 2010 to 2019

|  |  |  |
| --- | --- | --- |
| Year | Growers | Number of trees (million) |
| 2010 | 600 | 4.6 |
| 2011 | 600 | 4.7 |
| 2012 | 600 | 4.8 |
| 2013 | 600 | 4.6 |
| 2014 | 600 | 4.9 |
| 2015 | 625 | 4.9 |
| 2016 | 650 | 5.3 |
| 2017 | 700 | 6.9 |
| 2018 | 750 | 7.8 |
| 2019 | 800 | 8.8 |

Conduct a peer assessment by swapping and checking your peer’s line graph against the following marking criteria in Table 20. Make suggestions for improvement.

Table 20 – Peer assessment: Line graph

|  |  |  |  |
| --- | --- | --- | --- |
| Criteria | Yes | No | Comments |
| Title clear and concise |  |  |  |
| Axis labelled correctly |  |  |  |
| Line graph presented |  |  |  |
| Scale of measurement on axis appropriate |  |  |  |
| Spelling correct |  |  |  |
| Graph illustrated neatly |  |  |  |

Using your line graph answer the following questions:

* How many orchard macadamia trees were in production in 2011?
* How many orchard macadamia trees were in production in 2019?
* Describe the general trend in Australian macadamia orchards between 2010 and 2019.
* Predict the likely future trend for Australian macadamia orchards if the current trends persist.
* Predict possible interruptions to Australian macadamia production.
* Suggest implications for supply and demand if production continues to follow the same trend over the coming decade.

**Note:** Explicitly teach how to draw a column or bar graph. [Creating Bar Graphs (3:20)](https://youtu.be/ReW4MPqXTvA) will provide a basic explanation for this graphing exercise. You may also like to revisit [Common graphs (2:57)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources/common-graphs) with the class.

Construct a column graph using the data in Table 21 for Australian macadamia kernel sales, with top destinations (metric tons average, 2015 to 2019).

Table 21 – Australian macadamia kernel sales, 2015 to 2019

|  |  |
| --- | --- |
| Location | Metric tons sold |
| South Korea | 618 |
| Germany | 744 |
| China | 1005 |
| USA | 1,145 |
| EU | 1,520 |
| Japan | 1,883 |
| Domestic (Aust) | 3,456 |

Conduct a peer assessment by swapping and checking your peer’s column graph against the following marking criteria in Table 22. Make suggestions for improvement.

Table 22 – Peer assessment: Column graph

|  |  |  |  |
| --- | --- | --- | --- |
| Criteria | Yes | No | Comments |
| Title clear and concise |  |  |  |
| Axis labelled correctly |  |  |  |
| Column graph presented |  |  |  |
| Scale of measurement on axis appropriate |  |  |  |
| Spelling correct |  |  |  |
| Graph illustrated neatly |  |  |  |

Using your column graph, answer the following questions:

* On average between 2015 to 2019, which country outside of Australia purchased the largest quantity of Australian grown macadamia nuts?
* What other information might be required to explain why Japan, Europe, the USA and China are the major consumers of Australian grown macadamia nuts?

**Note:** Explicitly teach how to draw pie charts. Students will need to understand that they must calculate the angle for each set of data. When the data is presented as a percentage this is achieved by dividing the percentage by 100 then multiplying the result by 360. For example:

60/100 = 0.6

0.6 × 360 = 216.

Students will measure 216 degrees to illustrate the 60% of macadamia nuts consumed for snacks. Repeat calculations for ingredients and other uses and graph accordingly in the pie chart.

You might like to access [How to draw a pie chart from percentages](https://www.wikihow.com/Draw-a-Pie-Chart-from-Percentages) or [Drawing Pie Charts by Hand (10:42)](https://www.youtube.com/watch?v=wDcKgaKvRTc) for more information and examples on how to draw pie charts.

Construct a pie chart to illustrate the main uses of macadamia nuts around the world:

* 60% snack
* 30% ingredients
* 10% other uses.

Conduct a peer assessment by swapping and checking your peer’s pie chart against the following marking criteria in Table 23. Make suggestions for improvement.

Table 23 – Peer assessment: Pie chart

|  |  |  |  |
| --- | --- | --- | --- |
| Criteria | Yes | No | Comments |
| Title clear and concise |  |  |  |
| Angles measured accurately |  |  |  |
| Pie chart presented |  |  |  |
| Spelling correct |  |  |  |
| Graph illustrated neatly |  |  |  |

Consider the information presented in each of your graphs, line graph, column graph and pie chart, to answer the following questions:

* Explain why Australian domestic consumption of Australian grown macadamia nuts is higher than other countries with high import and consumption of Australian grown macadamia nuts.
* Predict likely changes to the nature of consumption of Australian grown macadamia nuts exported to Japan, China, Europe and USA.

**Note:** Use the [Geography K-10 Syllabus](https://educationstandards.nsw.edu.au/wps/portal/nesa/k-10/learning-areas/hsie/geography-k-10) to clarify your understanding of the geographical concept sustainability. Use a [sketch to stretch strategy](https://www.facinghistory.org/resource-library/teaching-strategies/sketch-stretch) to have students illustrate their understanding of the concept sustainability.

Read [Our Sustainable Approach](https://www.australian-macadamias.org/consumer/sustainability/) and construct a mind map that summarises ways the industry is improving green growing methods. At the centre of the mind map include the title Australian Macadamias sustainability strategies.

Use the following resources and further research to complete Table 24:

* [Bugs for Bugs](https://bugsforbugs.com.au/product/trichogramma/)
* [Good Bugs](http://www.goodbugs.org.au/Good%20bugs/t.cryptophlebiae.html)
* [Biological control of Macadamia Nut Borer (5:59)](https://youtu.be/HCshy2BWD2Q)
* [Macadamias: Industry Overview](https://beeaware.org.au/pollination/pollinator-reliant-crops/macadamias/)
* [Gardening Australia: Pollinating Macadamia Trees (2:08)](https://www.abc.net.au/gardening/factsheets/pollinating-macadamia-trees/9431288)
* [Why macadamia farmers love owls](https://www.australian-macadamias.org/consumer/why-macadamia-farmers-love-owls/).

Table 24 – Biological control in macadamia farming

|  |  |  |
| --- | --- | --- |
| Biological control | Description | Purpose |
| Trichogramma wasp |  |  |
| Native bees |  |  |
| Native barn owls |  |  |

Using the summary in Table 24, explain biological control methods for macadamia farms to someone who is unfamiliar with the topic. Explain why the three biological control methods outlined in your table are good examples of sustainable horticulture.

Read [Australian Macadamia nut farmers set out to improve sustainability](https://www.confectioneryproduction.com/news/29445/australian-macadamia-nut-farmers-set-out-to-improve-sustainability/) and complete a [Think-Pair-Share](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/645) for the following questions:

* What natural characteristics of the macadamia tree make it a more sustainable product?
* How are consumers from Australia and around the world influencing the production of macadamia nuts in Australia?
* How important are sustainable farming practices to your choice and consumption of products?

List ways sustainable macadamia production benefits the producers.

Access [simpleshow explains the Carbon Footprint (2:00)](https://youtu.be/8q7_aV8eLUE) and [Australian Macadamia nut farmers set out to improve sustainability](https://www.confectioneryproduction.com/news/29445/australian-macadamia-nut-farmers-set-out-to-improve-sustainability/) then answer the following questions:

* What is a carbon footprint and why is it important?
* Outline ways macadamia farmers have reduced the carbon footprint from macadamia production in Australia.

Watch [Landline and Australian macadamias June 2014 (22:19)](https://www.abc.net.au/local/archives/landline/content/2014/s4016259.htm) and identify [Plus, Minus, Interesting (PMI)](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/551) factors relating to the environmental, social and economic impacts of production and consumption of macadamia nuts. Complete Table 25 below.

Table 25 – Impacts of production and consumption of macadamias

|  |  |  |  |
| --- | --- | --- | --- |
| Impact | Plus | Minus | Interesting |
| Environmental |  |  |  |
| Social |  |  |  |
| Economic |  |  |  |

### Assessment of production and consumption of macadamias in Kenya

**Note:** Use [Google Earth](https://earth.google.com/web/@0,0,0a,22251752.77375655d,35y,0h,0t,0r) to locate Kenya with the class to ensure all students understand its location in relation to Australia and the rest of the world.

Access [Climate Change Knowledge Portal: Kenya](https://climateknowledgeportal.worldbank.org/country/kenya/climate-data-historical) and use the climatic column graph to answer the following questions:

* Look at the overall shape of the graph. Is the temperature line steep or gentle? Does it change throughout the year or look almost flat?
* Look for extremes – quote the highest and lowest temperature and rainfall and the month in which it occurs. Remember to quote units, for example, Celsius or millimetres.
* Calculate the temperature range by subtracting the lowest figure from the highest figure.
* Add the rainfall totals for each month together to work out the total annual rainfall.

Watch [Macadamia Farmers: Macadamia industry promising for Kenyan economy (2:28)](https://youtu.be/pnIA26HROmI) and complete 3 separate statements:

* 3 things I didn’t know before watching this video
* 2 things that surprised me in this video
* 1 thing I still do not understand or 1 thing I want to do with my new knowledge.

**Note:** Provide students with a definition for the exposition text type – see [Different types of writing – text types](https://education.nsw.gov.au/parents-and-carers/learning/english/english-a-to-z-support-pages/text-types-different-types-of-writing). Explicitly teach the use of a scaffold to support their construction of response.

Use the exposition scaffold in Table 26 to plan a draft response to the following task: Provide a sustained and logical argument to peasant farmers in Kenya as to why they should participate in macadamia production.

Table 26 – Exposition scaffold

|  |  |
| --- | --- |
| Exposition | Characteristic |
| Opening paragraph | Outline the perspective of your overall argument. What should they do? Overview of arguments being presented |
| Argument 1 | Factual information, example, personal point of view |
| Argument 2 | Factual information, example, personal point of view |
| Argument 3 | Factual information, example, personal point of view |
| Conclusion | Summary, positive reinforcement of opening statement |

### Sustainable production and consumption of palm oil

As a class, complete a [Google Jamboard](https://app.education.nsw.gov.au/digital-learning-selector/LearningTool/Card/593) outlining other examples of global production and consumption. For each example include a summary of information based on the following points:

* Where in the world is this product produced?
* How is the product consumed?

Outline whether palm oil production and consumption are sustainable or unsustainable.

Watch [Palm Oil Problem (4:03)](https://www.abc.net.au/btn/classroom/palm-oil-problem/10523458) and answer the following questions:

* What is palm oil?
* Which products use palm oil?
* In which countries are orangutans found?
* Both species of orangutan are critically endangered. What are the major threats to orangutans?
* How is palm oil important to the economy of Indonesia and Malaysia?
* What is palm oil often labelled as?

**Note:** Explicitly teach how to draw pie charts. Students will need to understand that they must calculate the angle for each set of data. When the data is presented as a percentage this is achieved by dividing the percentage by 100 then multiplying the result by 360. For example:

60 / 100 = 0.6

0.6 × 360 = 216

Students will measure 216 degrees to illustrate 60%. Repeat calculations and graph accordingly in the pie chart.

You might like to access [How to draw a pie chart from percentages](https://www.wikihow.com/Draw-a-Pie-Chart-from-Percentages) or [Drawing Pie Charts by Hand (10:42)](https://www.youtube.com/watch?v=wDcKgaKvRTc) for more information and examples on how to draw pie charts.

Construct a pie chart, using Table 27, to illustrate the main palm oil producing countries around the world.

Table 27 – Palm oil producing countries

|  |  |
| --- | --- |
| Country | Percentage |
| Indonesia | 58% |
| Malaysia | 26% |
| Thailand | 4% |
| Colombia | 2% |
| Nigeria | 1% |
| Guatemala | 1% |
| Honduras | 1% |
| Papua New Guinea | 1% |
| Unidentified | 6% |

Conduct a peer assessment by swapping and checking your peer’s pie chart against the following marking criteria using Table 28. Make suggestions for improvement.

Table 28 – Peer assessment: Pie chart

|  |  |  |  |
| --- | --- | --- | --- |
| Criteria | Yes | No | Comments |
| Title clear and concise |  |  |  |
| Angles measured accurately |  |  |  |
| Pie chart presented |  |  |  |
| Spelling correct |  |  |  |
| Graph illustrated neatly |  |  |  |

Visit [Palm Oil Production](https://worldmapper.org/maps/palm-oil-production-2014/) and answer the following questions:

* What type of map is this?
* How does this map emphasise the production of palm oil in Southeast Asia?

Read [What is sustainable palm oil?](https://www.asianagri.com/page/media-publications/articles/what-is-sustainable-palm-oil/) and answer the following questions:

* Identify key reasons for criticism of palm oil production around the world.
* Would replacing palm oil with other alternatives prove more sustainable? Provide reasons for your answer.
* What are the 8 principles of Roundtable on Sustainable Palm Oil (RSPO) certification?
* Outline the criticisms still surrounding RSPO certification and sustainable palm oil production.

Access [Which Everyday Products Contain Palm Oil?](https://www.worldwildlife.org/pages/which-everyday-products-contain-palm-oil) and choose 3 products you are familiar with or use regularly. For each product ‘peel’ back the information tag and complete Table 29.

Table 29 – Products containing palm oil

|  |  |  |  |
| --- | --- | --- | --- |
| Product | Describe how often you use | Why it contains palm oil | Is it certified sustainable palm oil? |
|  |  |  |  |

**Note**: The following task in the learning sequence suggests students audit products from home. Where not appropriate to the school context, this can be changed to an audit of items at school.

Many products in your home contain palm oil identified under different names. Use the following list of palm oil names to conduct an audit of your home. Complete Table 30.

* Vegetable Oil
* Vegetable Fat
* Palm Kernel
* Palm Kernel Oil
* Palm Fruit Oil
* Palmate
* Palmitate
* Palmolein
* Glyceryl
* Stearate
* Stearic Acid
* Elaeis Guineensis
* Palmitic Acid
* Palm Stearine
* Palmitoyl Oxostearamide
* Palmitoyl Tetrapeptide-3
* Sodium Laureth Sulfate
* Sodium Lauryl Sulfate
* Sodium Kernelate
* Sodium Palm Kernelate
* Sodium Lauryl Lactylate/Sulphate
* Hydrogenated Palm Glycerides
* Ethylhexyl palmitate
* Octyl Palmitate
* Palmityl Alcohol.

Table 30 – Daily use of palm oil

|  |  |  |  |
| --- | --- | --- | --- |
| Product | Describe how often you use | Palm oil clearly labelled | Palm oil variant identified |
|  |  |  |  |

Read [How are palm oil buyers performing?](https://palmoilscorecard.panda.org/#/analysis) and conduct a [Think-Pair-Share](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/645) to answer the following questions:

* According to the sustainability criteria, what areas of sustainable palm production are not being adequately addressed?
* Make 3 recommendations to palm oil buyers that would increase their sustainable and ethical consumption of palm oil.

With a partner watch [How to select chocolates that use sustainable palm oil (1:57)](https://youtu.be/bpCBLKV5Ydk) and create your own [Public Service Announcement](https://mediatracks.com/resources/expert-advice-what-is-a-public-service-announcement/) (PSA) for sustainable consumption of palm oil. You can choose any product that consumers purchase to promote RSPO certification.

Conduct a peer assessment by swapping and checking your peer’s PSA against the following marking criteria in Table 31. Make suggestions for improvement.

Table 31 – Peer assessment: PSA marking criteria

|  |  |  |  |
| --- | --- | --- | --- |
| Criteria | Yes | No | Comments |
| PSA title clear and concise |  |  |  |
| PSA no longer than 3 minutes |  |  |  |
| PSA content accurate and factual |  |  |  |
| Spelling correct |  |  |  |
| Illustrated appropriately |  |  |  |

### Applying the United Nations Sustainable Development goals – The Great Wrap

**Note:** You will need to become familiar with the [Great Wrap Company](https://www.greatwrap.co/) prior to commencing this task in the learning sequence.

Watch [Great Wrap on The Project (2:50)](https://www.youtube.com/watch?v=mAO1BkhtCds) and answer the following questions:

* What is Great Wrap?
* Why did Great Wrap start up?
* Why might using fruit waste and potato waste benefit a company like Great Wrap?
* Who would be interested in buying a product like Great Wrap?
* How might Great Wrap have a negative impact on sustainability in the future?

**Note**: The resources [12 Responsible Production and Consumption](https://www.un.org/sustainabledevelopment/sustainable-consumption-production/) and [Sustainable consumption and production policies](https://www.unep.org/explore-topics/resource-efficiency/what-we-do/sustainable-consumption-and-production-policies) are detailed and some students may require assistance with navigating and reading. You may like to read through the sites prior to starting the task to assist students.

In small groups illustrate the connection between the Great Wrap and UN Sustainable Development Goals by creating a [Canva](https://app.education.nsw.gov.au/digital-learning-selector/LearningTool/Card/653) information brochure. Access the following resources for further information:

* [12 Responsible Production and Consumption](https://www.un.org/sustainabledevelopment/sustainable-consumption-production/)
* [Sustainable consumption and production policies](https://www.unep.org/explore-topics/resource-efficiency/what-we-do/sustainable-consumption-and-production-policies)
* [Great Wrap Company](https://www.greatwrap.co/)

Reflect on what you have learnt in this lesson and use this to complete an [‘I used to think … Now I think…’](https://pz.harvard.edu/resources/i-used-to-think-now-i-think) routine on the UN Sustainable Development Goals. Use the sentence starters below as a guide:

* I used to think…
* Now I think…

## Assessment task

**Note:** When using this task, ensure it is placed on the school template and follows all assessment requirements. A useful stimulus for this assessment task is [How to Write an Information Report (9:29)](https://www.youtube.com/watch?v=CZnYQJ0ZX9A).

### Outcomes

* **GE4-3** explains how interactions and connections between people, places and environments result in change
* **GE4-7** acquires and processes geographical information by selecting and using geographical tools for inquiry

### Syllabus content

* Investigate the influences on and effects of people’s travel and recreational, cultural or leisure connections with different places for the future, for example: (**ACHGK065, ACHGK069**).
* analysis of patterns and trends in people’s travel, recreational, cultural and/or leisure activities
* examination of the impact of people’s travel, recreational, cultural and/or leisure activities on the future of places
* explanation of the impacts of selected travel, recreational, cultural or leisure activity on a place, implications for the future of that place and strategies to achieve sustainability.

### Task

Select a local recreational or cultural place in your community. You will use fieldwork to explore how interconnections and connections of people, places and environments have changed a local recreational or cultural place. For example, change as a result of travel or recreational connections. Present your findings as an information report.

#### Part A: Fieldwork

The focus question for this research is ‘How have the interconnections and connections of people, places and environments changed my local recreational or cultural place?’

Select a fieldwork method that is appropriate to highlight changes in your chosen place. Fieldwork methods that could be considered include:

* survey
* interview
* field sketch
* photograph analysis
* land use map.

#### Part B: Information report

Analyse your results and present these in an information report. Use the following structure for your report:

* Introduction
* outline what the reader can expect to learn from reading the report
* include a brief outline of the subtopics within the report
* include a sentence that concludes the introduction.
* Body paragraphs
* include body paragraphs for your subtopics
* each body paragraph requires a topic sentence that tells the main idea of the paragraph
* the rest of the paragraph provides more details and examples.
* Conclusion
* summarise what was learnt and do not include any new information in the conclusion.
* Reference list or bibliography that outlines where you accessed your information.
* Ensure the information report answers the focus question ‘How have the interconnections and connections of people, places and environments changed my local recreational or cultural place?’

### Marking criteria

Table 32 – Assessment marking criteria

|  |  |
| --- | --- |
| Grade | Criteria |
| **A** | * Selects appropriate and sophisticated fieldwork tools to research changes to places * Conducts a comprehensive analysis of the fieldwork * Presents a sophisticated and comprehensive information report that is structured appropriately and explicitly addresses the question |
| **B** | * Selects appropriate fieldwork tools to research changes to places * Conducts a thorough analysis of the fieldwork * Presents a thorough and comprehensive information report that is structured appropriately and explicitly addresses the question |
| **C** | * Selects some fieldwork tools to research changes to places * Conducts sound analysis of the fieldwork * Presents a sound information report that is structured appropriately and answers the question |
| **D** | * Selects some fieldwork tools to research changes to places * Conducts a basic analysis of the fieldwork * Presents a basic information report that is structured appropriately and attempts to answer the question |
| **E** | * Identifies fieldwork tools that could be used to research changes to places and/or selects a fieldwork tool to research changes to places * Displays elementary skills in analysing fieldwork * Communicates elementary ideas and information in a report structure |

## Appendix: Capacity matrix

**Note:** A general concept and glossary list has been outlined. However you may wish to add further terminology or skills to the capacity matrix.

**Key classification**

* information – recall basic facts or heard of this before
* knowledge – can explain and know what it means
* know-how – can draw connections between this geographical term or concept and relate to other concepts or situations
* wisdom – can use the term or concept in new contexts or teach others.

Shade or tick information, knowledge, know-how and wisdom in the matrix (Table 33) as you progress with your understanding of the geographical concept or term. At the end of the learning sequence, reflect on your progress and discuss with your teacher if you observe any areas you can improve.

Table 33 – Capacity matrix

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Glossary word | Information | Knowledge | Know-how | Wisdom |
| consumption |  |  |  |  |
| economic |  |  |  |  |
| environment |  |  |  |  |
| globalisation |  |  |  |  |
| industry |  |  |  |  |
| interconnection |  |  |  |  |
| modernisation |  |  |  |  |
| ocean currents |  |  |  |  |
| place |  |  |  |  |
| production |  |  |  |  |
| space |  |  |  |  |
| sustainability |  |  |  |  |
| technology |  |  |  |  |
| tourism |  |  |  |  |
| trade |  |  |  |  |
| travel |  |  |  |  |

## References

**Links to third-party material and websites**

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