

Geography - Above satisfactory - Year 9

Portfolio summary

This portfolio of student work shows that the student can analyse the interconnections between people and environments. Through an examination of the relationships between biomes and food scarcity (WS1), and trading patterns (WS2), and between human and physical environments (WS3), the student gives comprehensive explanations for how these interconnections influence people, and change places and environments (WS1, WS2, WS3).

The student work shows an ability to select, interpret and analyse multi-variable geographical data and information to answer inquiry questions (WS1, WS2, WS3), proposing detailed explanations for relationships, distributions, patterns, trends and anomalies over time and across space (WS1, WS2), and records findings on a map which complies with cartographic conventions (WS3). The student analyses alternative strategies to respond to a geographical challenge; proposes and justifies a response using environmental, social and economic criteria (WS1, WS2, WS3); and predicts comprehensive outcomes of the proposal. They synthesise data and information to draw reasoned conclusions (WS1, WS2, WS3), presenting findings and explanations using relevant geographical terminology (WS1, WS2, WS3).

Data analysis: Food scarcity

Sample summary

Over a period of six weeks, students examined the biomes of the world, how humans have altered environments for food production, and the main challenges of providing food security. Various case studies were used from Australia and other parts of the world throughout the unit of study. Students were assessed under supervised conditions in class over three 40-minute lessons. They were required to interpret a range of data and information and provide short responses to demonstrate their skills and understandings. Finally, the concept of food miles was explored to understand how local human activity influences global systems. Students were asked to create a presentation proposing local actions that could reduce the impact of food miles, and evaluated the sustainability of their strategies from economic, environmental and social perspectives.

Achievement standard

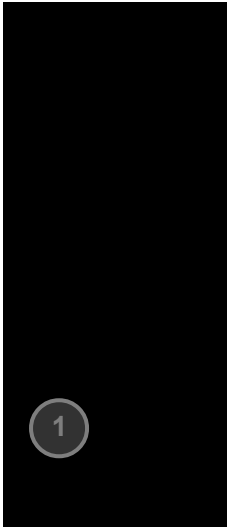
Subject

By the end of Year 9, students explain how geographical processes change the characteristics of places. They analyse interconnections between people, places and environments and explain how these interconnections influence people, and change places and environments. They predict changes in the characteristics of places over time and identify the possible implications of change for the future. Students analyse alternative strategies to a geographical challenge using environmental, social and economic criteria.

Students use initial research to identify geographically significant questions to frame an inquiry. They evaluate a range of primary and secondary sources to select and collect relevant and reliable geographical information and data. They record and represent multi-variable data in a range of appropriate digital and non-digital forms, including a range of maps that comply with cartographic conventions. They use a range of methods

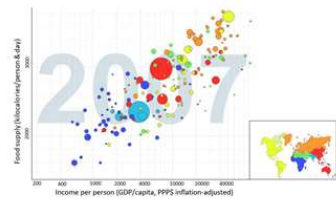
and digital technologies to interpret and analyse maps, data and other information to propose explanations for patterns, trends, relationships and anomalies across time and space, and to predict outcomes. Students synthesise data and information to draw reasoned conclusions. They present findings, arguments and explanations using relevant geographical terminology and digital representations in a range of appropriate communication forms. Students propose action in response to a geographical challenge, taking account of environmental, economic and social factors, and predict the outcomes and consequences of their proposal.

Report



Year 9: Biomes and Food Scarcity
 There are many interconnected causes of food insecurity for different people in different places and environments throughout the world.

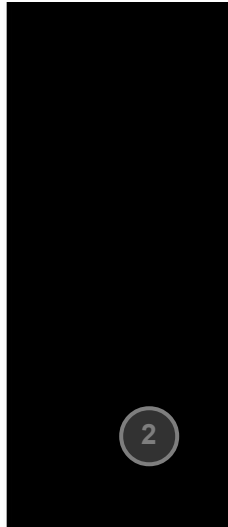
Figure 1 shows the relationship between income and food intake for countries of the world in 2017.



Source: data generated using QGIS.

1. Using evidence from the graph in Figure 1, explain how a person's daily food supply can be influenced by their income.

Shown in Figure 1 the income per person affects how much food supply a person can have. As you can see in Northern and Southern America have an abundance of money between 15 000 to 40 000 thousand dollars compared to Africa which is only receiving around 400 to 4000 dollars this is showing that they only consume around 2000 kilocalories per person per day. This is a big difference to Americans as they are receiving around 3000 and over kilocalories per day. This shows that Americans to receive around 3000 and over kilocalories per day this shows them to have a food supply. This shows that the income that a person is earning has an effect of their food consumption.



Annotations

- 1 **Annotation 1**
 Uses detailed examples to explain how food supply is influenced by place and income
- 2 **Annotation 2**
 Develops a complex synthesis of place, income and kilocalorie data from the source
- 3 **Annotation 3**
 Offers a concise conclusion from synthesised data

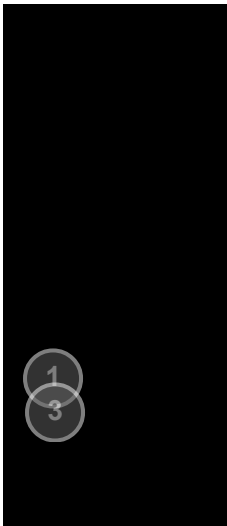
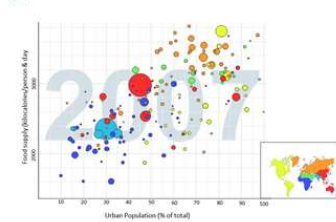


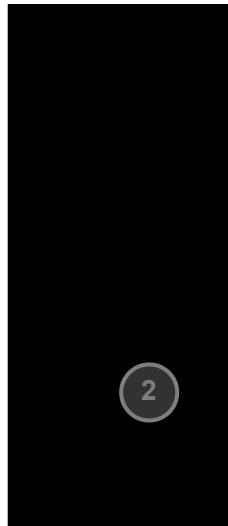
Figure 2 shows the relationship between urban population and food intake for countries of the world in 2017.



Source: data generated using ArcMap.

2. Using evidence from the graph in Figure 2, explain how which country/region a person lives in and/or whether they live in a rural or urban area can affect how much food they eat.

In Figure 2 it shows the urban population of countries in the world in 2017. In Africa countries it shows the urban population at 15%. This means more people live in a rural area than an urban area. Living in a rural area such as Africa can affect how much food a person eats. This is because the country does not have all of the supplies like a country like North America. People that live in countries with a low urban population are not able to just go down to a local supermarket. Instead they would probably have to grow their own crops and live off them. This means that they have to wait for the crops to fully finish growing, and they have to rely on rain water to water the crops. These countries are not able to just water their crops with drinking water, as drinking water is very limited. This can affect the plantation of crops because there is not as much land for the crops. This means that living in a rural area can affect how much food a person eats. In Figure 2 it shows Australia as an urban population at 70%. This means that only 30% of people in Australia live in rural areas. Not many people live on farms (grow grapes) and we do not need to rely on crops to grow as we can just go to a local supermarket which has food from everywhere. This shows that people who live in rural places have less access to food.



Annotations

- 1 **Annotation 1**
 Interprets the data source, using examples and statistics
- 2 **Annotation 2**
 Explains the interconnection between food supply and rural and urban places across the world using examples and statistics
- 3 **Annotation 3**
 Explains how food supply and geographic location affect people, using a range of examples and statistics

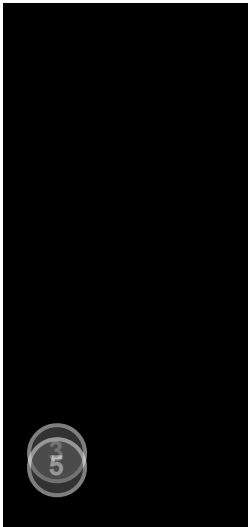


Figure 3 Image showing large scale clearing of tropical rainforests



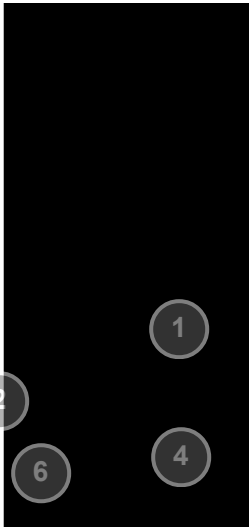
3. Explain how large scale deforestation of tropical rainforests has impacts on:

a) the local natural environments in these places.

Large scale deforestation or otherwise known as clear felling decreases the biodiversity of animals and plants. The means when the trees are cut down the soil is left unprotected and suffers greatly from erosion and is also dried by the hot sun. The clear felling affects the atmosphere. When the trees are cut down and burned, the atmosphere has more carbon dioxide. Because there are less trees to absorb the carbon dioxide and to produce oxygen. Large scale deforestation takes away natural habitats for local animals and their food source. An example of some animals that suffer from clear felling are elephants and orangutans. Elephants suffer because they eat plants and are big so they need to eat a lot. We are taking away large amounts of their food which means they are left wandering through dangerous places such as towns and other areas in search of food. The orangutan population suffers greatly from clear felling because of habitat destruction, exposing them to the wild. These are just some consequences of large scale deforestation.

b) the global natural environment.

Large scale deforestation affects the global natural environment in a positive way and in a negative way. Some positive ways are that if a country has a large amount of a food resource, other places don't have to clear environments to grow the same type of food and can get it imported, while they can grow foods that suit their climate. A negative consequence of this is that instead of using the same amount of land to grow different foods, large areas are used for just 1 or 2 types of food. This means that biodiversity is destroyed because clear felling is encouraged. The damage caused by clear felling is explained in the paragraph below.



4 Annotation 4
Draws reasoned conclusion about place, food supply and consumption

Annotations

1 Annotation 1
Uses a range of relevant specific geographical terminology throughout the explanation

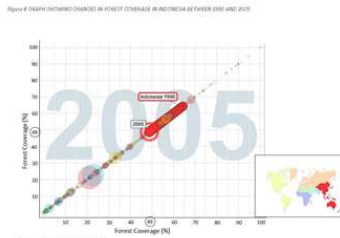
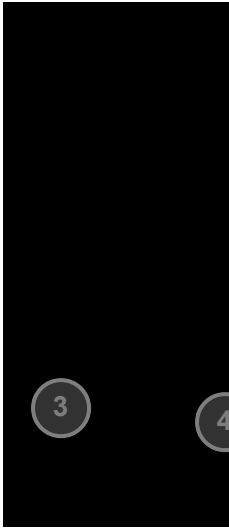
2 Annotation 2
Develops a coherent, accurate explanation, with examples, about a range of natural processes and how they are affected by deforestation

3 Annotation 3
Uses specific examples to give a coherent and accurate explanation about how the deforestation causes global change

4 Annotation 4
Uses relevant geographical terminology

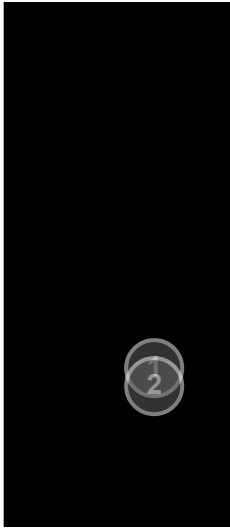
5 Annotation 5
Explains the interconnection between local and global natural environments

6 Annotation 6
Draws a reasoned conclusion about the positive and negative effects of deforestation on global natural environments



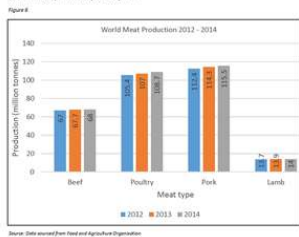
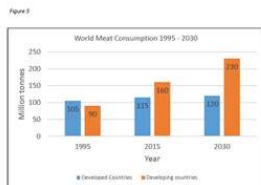
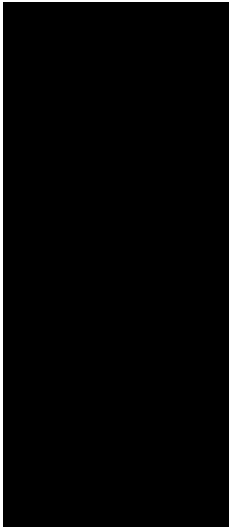
Indonesia had 64% of the country covered by forests, mainly rainforests, in 1990. Land clearing reduced the amount of forest cover to 49% in 2010. Predict and explain what you think will happen to the rates of rainforest clearing in Indonesia in the future.

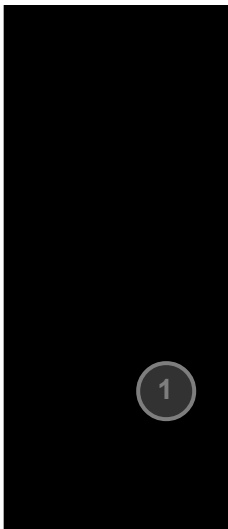
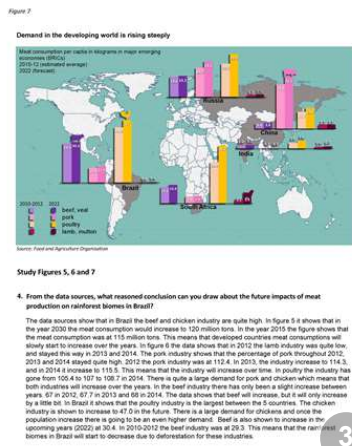
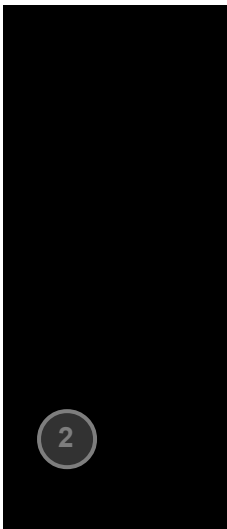
In the future rainforest clearing in Indonesia is going to become lower. This is because of the demand for land for houses and other blocks of land. During 13 years of deforestation the forest coverage dropped 15%. It may not seem like a lot but that's 1% of rainforests destroyed. During the years the deforestation is going to become lower, which will result in almost no rainforests in Indonesia. In 2011 the percentage of rainforest coverage in Indonesia will be 34%. 2040 is the year rainforests coverage will come to under 20%. The forest coverage will reduce to 10% based on losing 1% of rainforests every year. The population of people living in Indonesia will most likely increase. This means that the rainforests will be destroyed for more blocks of land, and clearing the rainforests for space.



Annotations

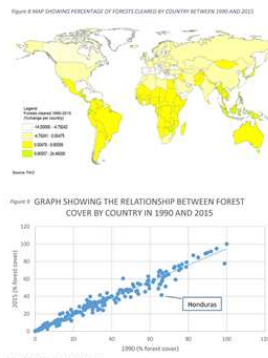
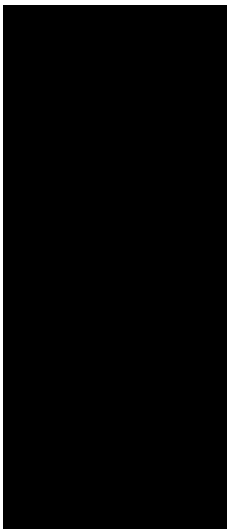
- 1 **Annotation 1**
Interprets graphical data
- 2 **Annotation 2**
Uses relevant specific geographical terminology throughout the explanation
- 3 **Annotation 3**
Provides a coherent prediction, using conceptual arguments, about a geographical outcome
- 4 **Annotation 4**
Synthesises specific data and information about forest coverage, time and place to inform a prediction





Annotations

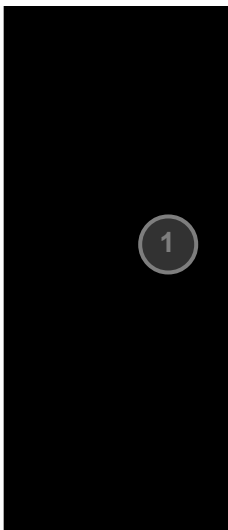
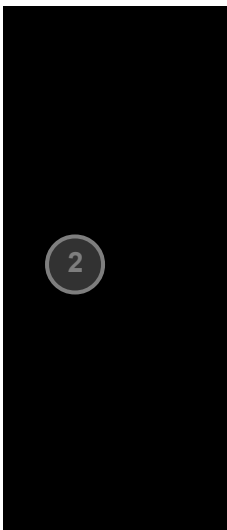
- 1 **Annotation 1**
Uses data in a clear, detailed and specific way to draw a reasoned conclusion
- 2 **Annotation 2**
Describes future impacts in biomes using examples
- 3 **Annotation 3**
Justifies reasoned conclusion using variables of time, quantity and place across a range of contexts



Study Figures 8 and 9

5. Describe the general trend of changes in forest coverage between 1990 and 2015 and suggest reasons why.

Figure 8 shows that the general trend of forest coverage is decreasing and is reducing at the same rate in the countries between the years of 1990 and 2015.



Annotations

- 1 **Annotation 1**
Describes the anomaly in a graph, citing data
- 2 **Annotation 2**
Proposes several appropriate reasons for the trend using information from an inquiry

Presentation



Research inquiry: Interconnections

Sample summary

Students were required to select one product that is purchased by their household and investigate how the production and demand for this product creates networks of trade and economic interdependence at and across different scales. The inquiry took place over four weeks during class time and students were asked to present their findings in a written report. Students were given the following questions to help them with their inquiry:

- Where is the product produced and/or manufactured?
- What is the supply chain for the product?
- What is the spatial distribution of production and consumption?
- How does the product connect places?

They were asked to design and investigate a further research question based on what they had learned.

Achievement standard

Subject

By the end of Year 9, students explain how geographical processes change the characteristics of places.

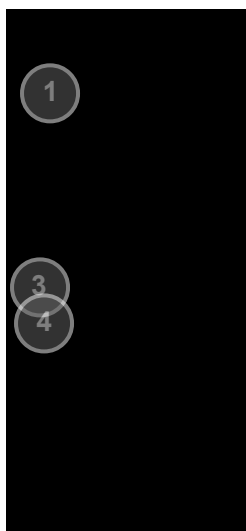
They analyse interconnections between people, places and environments and explain how these interconnections influence people, and change places and environments. They predict changes in the characteristics of places over time and identify the possible implications of change for the future. Students analyse alternative strategies to a geographical challenge using environmental, social and economic criteria.

Students use initial research to identify geographically significant questions to frame an inquiry. They evaluate a range of primary and secondary sources to select and collect relevant and reliable geographical information and data. They record and represent multi-variable data in a range of appropriate digital and non-digital forms, including a range of maps that comply with cartographic conventions. They use a range of methods and digital technologies to interpret and analyse maps, data and other information to propose explanations for patterns, trends, relationships and anomalies across time and space, and to predict outcomes. Students synthesise data and information to draw reasoned conclusions. They present findings, arguments and explanations using relevant geographical terminology and digital representations in a range of appropriate communication forms. Students propose action in response to a geographical challenge, taking account of environmental, economic and social factors, and predict the outcomes and consequences of their proposal.

Report

Annotations overview

In this sample, the student has developed geographically significant questions to frame an inquiry and presented answers in the form of a cohesive report. The student presents findings and explanations using a range of appropriate geographical terminology. The student demonstrates understanding of spatial patterns and networks of trade and appreciates the impact of global economic processes on people, places and environments at a range of scales. The student proposes valid strategies to address these issues and predicts the long-term consequences of their proposals.



Year 9 – Interconnections
 Inquiry: Exploring interconnections through the coffee trade
 Where is coffee produced and why there?
 Most coffee in the world is produced in what National Geographic calls the "Bean Belt" which is between the Tropic of Cancer and the Tropic of Capricorn. Figure 1 shows the regions in the world where coffee is grown. These regions are Central and South America, Africa and the East and Southeast Asia.

Figure 1: Coffee producing regions of the world

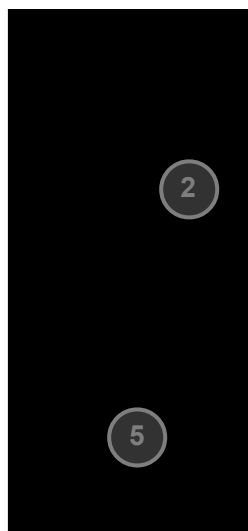
Coffee grows in these regions because the climate conditions, and the soil suits. The best beans are produced at high altitudes, in a moist, tropical climate, with rich soils and temperatures around 20°C (68 degrees). The region between the Tropic of Cancer and the Tropic of Capricorn has these characteristics.

There are more than 50 countries in the world that produce coffee. As can be seen in the graph below, the biggest coffee producing region in the world is Central and South America with 8 countries in that region being among the biggest coffee producers in the world. South East Asia has three countries in the top 10 and Africa has one. The largest producing coffee country in the world is Brazil followed by Vietnam.

Figure 2: Top 10 Coffee Producing Countries by Region (2011)

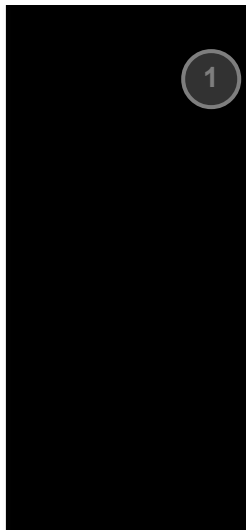
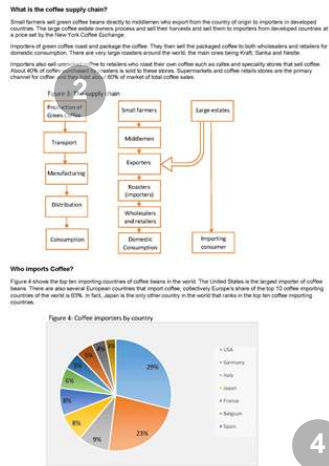
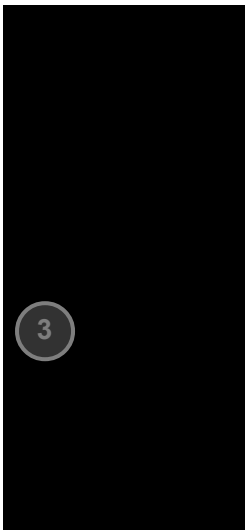
Country	Region	Production (Million 60kg bags)
Brazil	South America	~45,000
Central and South America	Central and South America	~15,000
Vietnam	South East Asia	~12,000
Indonesia	South East Asia	~10,000
Colombia	Central and South America	~8,000
Guatemala	Central and South America	~7,000
India	South East Asia	~6,000
Kenya	Africa	~5,000
Uganda	Africa	~4,000
Ethiopia	Africa	~3,000

Source: Department of Agriculture, Fisheries and Aquaculture (2012) <http://www.daff.gov.au/industry/2012/08/2012-top-10-coffee-producing-countries-in-2011>



Annotations

- 1 Annotation 1**
Identifies the location of coffee-growing regions in the world
- 2 Annotation 2**
Constructs a thematic map to illustrate the spatial distribution of coffee-growing countries and regions
- 3 Annotation 3**
Explains the relationship between the natural characteristics of places and coffee production
- 4 Annotation 4**
Sources and analyses data to identify coffee-producing regions in the world



5 Annotation 5
Sorts data and constructs a column graph to show the top coffee-producing countries by country region

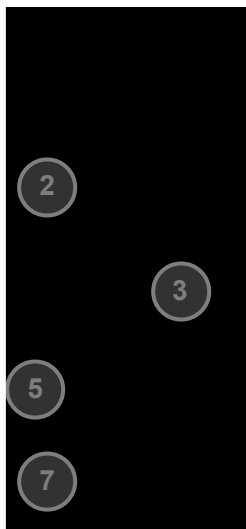
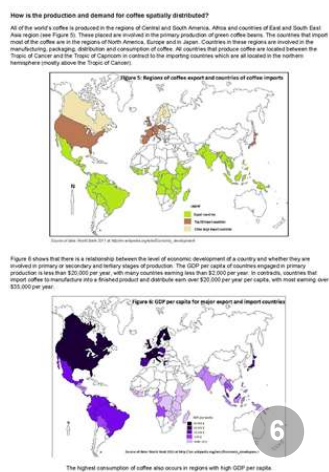
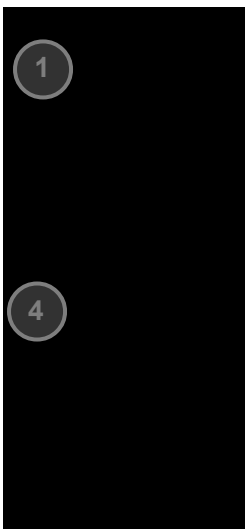
Annotations

1 Annotation 1
Explains in detail the network of people and activities at each stage of the coffee supply chain

2 Annotation 2
Draws a comprehensive supply chain to show how people and activities are interconnected in the cultivation, production, distribution and consumption of coffee

3 Annotation 3
Synthesises data to identify patterns of coffee distribution

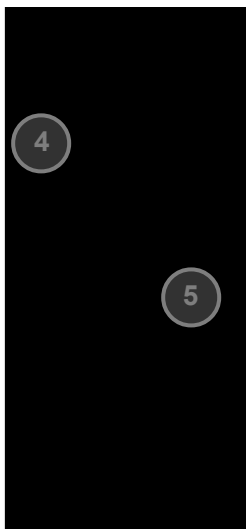
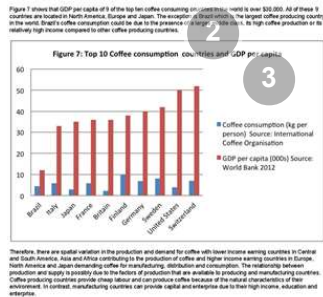
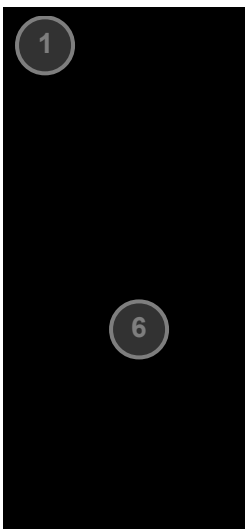
4 Annotation 4
Constructs a pie chart to illustrate the distribution of coffee by country



Annotations

1 Annotation 1
Explains spatial variations between the production of and demand for coffee

2 Annotation 2
Represents the spatial distribution of coffee production and demand on a thematic map that complies with cartographic conventions



- 3 Annotation 3**
Identifies and explains the relationship between income and the cultivation and demand for coffee
- 4 Annotation 4**
Gives an explanation for variations in the spatial distribution of coffee production and demand
- 5 Annotation 5**
Constructs a thematic map to represent the spatial distribution of different levels of economic development
- 6 Annotation 6**
Uses appropriate shading and a legend to represent average values
- 7 Annotation 7**
Cites a source of data

Annotations

- 1 Annotation 1**
Identifies patterns and anomalies in the spatial distribution of coffee consumption
- 2 Annotation 2**
Proposes an explanation for the spatial anomaly of Brazil as a coffee-consuming nation
- 3 Annotation 3**
Constructs a column graph to illustrate the relationship between GDP per capita and coffee consumption
- 4 Annotation 4**
Interprets and synthesises data from

different sources to represent the relationship between different variables

5 Annotation 5
Gives a valid explanation for spatial variations in the production and consumption of coffee

6 Annotation 6
Synthesises information to draw reasoned conclusions

Table 1.1 Comparison between the characteristics of regions that produce different coffee

Region	Role in supply chain	Location	GDP per capita (2015)	Coffee Consumption	Resources
Africa, Central and South America, East and South East Asia	Production (Primary)	Tropics of Capricorn and the Tropic of Cancer	Low	Very low with the exception of Brazil	Land Labour
North America, Europe, Japan (Secondary and Tertiary)	Manufacturing Distribution Consumption	Around the Tropic of Capricorn	High	Highest consumption volumes of Europe, Japan and United States	Capital Enterprise


How are countries interconnected through the coffee trade?

The world pattern of coffee production and consumption is a result of the interaction of physical and economic interdependence. Figure 3 shows the network that has evolved due to the large differences between exporting regions and importing countries. There is a growing interdependence between coffee producing and consuming countries. There are over 20 million hectares of coffee plantations that exist in the cultivation of coffee. Brazil is a major source of export for these countries and there are many jobs generated outside of cultivation. Some of these jobs include:

- Laborers: Pickers and cutters
- Administrators: people who manage the coffee plantation
- Where people who remove the soft coffee from the coffee seed (shell) and manage the drying process
- Truck drivers
- Export and import
- Shipping company employees

The coffee trade also generates employment for import countries. These jobs include:

- Importing company employees
- Retailers
- Hotels and restaurants
- Coffee shops
- Coffee shops services and employees



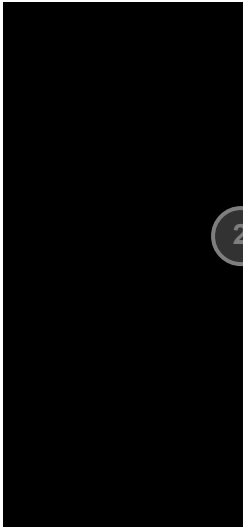
Annotations

1 Annotation 1
Sorts information to show relationships between location and characteristics of places, and their role in the supply chain

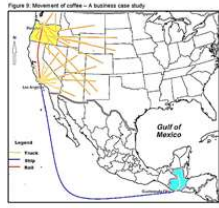
2 Annotation 2
Analyses the economic interdependence created by the coffee trade

3 Annotation 3
Explains how the coffee trade creates employment for people in different places at all stages of the supply chain

4 Annotation 4
Represents the complex networks created by the coffee trade at national, regional and international scales



A business case study of the coffee trade between Guatemala and the United States shows how local and world economies create networks, movement patterns and transportation routes. Figure 3 shows how the movement of coffee between the Central American country of Guatemala and then transported to the city of Los Angeles to ship. The coffee is then transported to neighboring states in order for manufacturing and is further to get to Portland, Oregon. The coffee is then transported to retailers for manufacturing and then distributed to retailers in nearby states. This case study shows how the coffee trade connects places and creates networks between places through the movement of goods from the producer to the consumer. It also shows the interconnection between different places through economic activity.

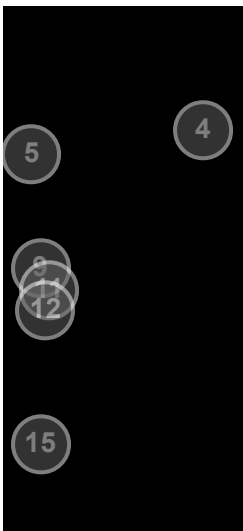


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Annotations

1 Annotation 1
Explains how local and national economies combine to create networks, movement patterns, transport routes and markets

2 Annotation 2
Represents the interconnections between places across different scales due to the flow of coffee



What are the issues with interconnections and how can they be addressed?

The coffee trade connects people and places at all scales. The interconnections are complex and a high demand for coffee increases. Therefore, to ensure long-term sustainable development, the major challenge is to find a solution, distribution and consumption of coffee need to be addressed in the short and long term.

The most obvious issue associated with coffee is the exploitation of small farmers who produce and sell coffee across the world. Small farmers who produce coffee often gain small amounts for their crops. Fair Trade movement has improved the economic wellbeing of many farmers as they enabled the evidence from experts. Fair Trade movement has improved the price paid and a fair price for their coffee. Consumers in the developed world can purchase coffee with a Fair Trade label knowing that the farmer who produced the coffee was paid a fair price. This strategy improves the social and economic wellbeing of small farmers and the benefits and costs consumers pay a small amount of extra money per cup of coffee. It is also dependent on the environment as it assumes that only the coffee being demanded is produced as farmers no longer have to produce more coffee when prices are low.

However, less than half the total production of coffee is sold at Fair Trade prices because the demand for Fair Trade coffee is still too low. One strategy to increase small farmers' production is Fair Trade to increase demand for Fair Trade coffee through education and marketing campaigns. This strategy would result in long-term growth in the demand for Fair Trade coffee and provide a significant number of small farmers in the long-term and short-term businesses.

This strategy, however, does not protect workers on plantations as the Fair Trade movement has not yet extended to plantations. Many plantation workers are paid as little as \$2 a day and work under extremely poor conditions. A strategy that could be applied to plantation workers is for plantation owners to create a Code of Conduct or Guidelines for Fair Trade plantations, who control coffee production, social and economic conditions ensuring the purchase of coffee only from plantations that adhere to these guidelines and practices. This idea is not new. It came out of Europe in 1999 and although the idea is growing, more consumer organisations around the world need to put the strategy. One of the Fair Trade movement's key strategy is socially, economically and environmentally viable and stable for the consumer a small price per cup of coffee.

There are also significant environmental issues associated with the production and distribution of coffee. Traditional coffee-growing methods have a small impact on biodiversity. However, the growth in the demand for coffee has seen the introduction of new methods of production, including the use of pesticides and herbicides and the emergence of fast rotation coffee. This trend has resulted in significant deforestation (over 2.5 million acres in Central America alone) and has changed not only the landscape, but also places where coffee is grown. In order to meet the growing demand for coffee, the cultivation of traditional crops such as rice has given way to mass coffee production in the coffee growing regions of the world. This has changed places where coffee is grown and the loss of crops and land there. The environmental effects have been increasing including deforestation, a reduction in species of flora and fauna, soil erosion and polluted waterways.

A strategy that could be used to address the environmental effects of coffee production is to revert to the traditional practices of coffee growing under shade of forests. This method of production has many benefits including providing the best habitat for birds, the reduction of the need for pesticides and soil preservation. Shade-grown coffee is only available in some areas. The idea is to make coffee for shade-grown coffee more cost-effective. Consumers could be encouraged to use and change their purchasing habits so that they purchase only shade-grown coffee. In the long term, the demand for shade-grown coffee and reduce the adverse environmental impacts of coffee growing.

For people in the developed world, coffee is consumed daily. Very little thought is given to the production of coffee, or the environmental effects of production. Consumer organisations can be used as a tool to 'highlight' to consumers that consumer decisions affect people who are not part of their 'heart' environments. Organisations can not only coffee producing countries, but also the world. Consumers can be encouraged to use Fair Trade coffee and to ensure that their purchasing decisions are socially and environmentally sound.

Conclusion
Resources related to the coffee industry are highly concentrated in a few regions in the world that produce coffee and regions that demand it. The production regions have a high level of dependence on the demand for coffee. The regions that demand coffee have the expertise and capital and manufacture coffee and the income to consume it. This capital system of resources has created networks of trade and economic interdependence at the regional, national and international scales. Local and global economies cooperate to create networks, movement patterns, transport routes and markets.

This report shows that the complexities of a cup of coffee means that all levels can need to be considered and environmental steps taken. Several strategies to address these issues in the long term have been identified. The responsibility to change coffee producing practices rests with the producer and consumer. Through sharing patterns of demand, these responsibilities can mutually impact the way coffee is produced. By purchasing Fair Trade and shade coffee, consumers will cut demand for mass and environmentally unsustainable coffee. However, market forces drive to buy coffee only from large producers and not from small producers in different forms. In the long-term, business and consumers can provide the sustainable production of coffee for a small price.

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Annotations

1 Annotation 1
Uses initial research to frame a geographical question to investigate

2 Annotation 2
Identifies trends in the consumption of coffee and predicts the need to address issues arising from these trends

3 Annotation 3
Identifies Fair Trade as a possible strategy to address the exploitation of small coffee producers

4 Annotation 4
Applies environmental, social and economic criteria to assess the merits of Fair Trade

5 Annotation 5
Identifies weaknesses in the Fair Trade strategy and suggests ways to make it more effective

6 Annotation 6
Predicts the long-term effects of proposed strategy to improve the reach of Fair Trade

7 Annotation 7
Identifies the need for extra strategies to address the exploitation of plantation labourers and proposes a strategy

8 Annotation 8
Explains changes to the way coffee is grown

9 Annotation 9
Gives an example of the ways that interconnections change places

10 Annotation 10
Identifies the environmental effects of sun-grown coffee

11 Annotation 11
Proposes a strategy to address the environmental effects of sun-grown coffee

12 Annotation 12
Identifies individual and collective action to promote sustainable coffee production

13 Annotation 13
Predicts the long term consequences of proposed strategy

14 Annotation 14
Synthesises information from a range of sources to form reasoned conclusions

15 Annotation 15
Draws reasoned and evidence-based conclusions

Interconnections: Magnetic Island

Sample summary

Over a two-week period, students completed a staged investigative inquiry into how people connect with Magnetic Island and the impacts of these interconnections.

The scaffolded stages of the inquiry were:

- Identify and list the main questions that need to be answered to complete this inquiry.
- Analyse the main reasons why people go to Magnetic Island and the effects of these interconnections on the natural environment.
- Create an original map/s, using BOLTSS, to show the location of the main human settlements on the island today and changes over time.
- Describe the spatial distribution of settlements on the island today and suggest reasons for these locations and why there have been changes over time.
- Propose a strategy to improve accessibility to Magnetic Island (e.g. build a bridge or lower ferry prices).
- Predict the possible social, economic and environmental outcomes and consequences of this proposal.

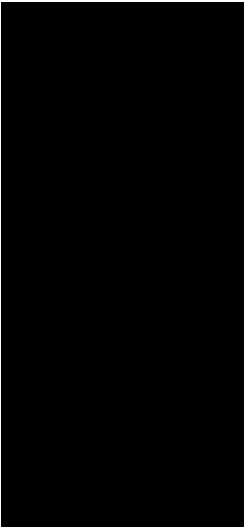
Achievement standard

Subject

By the end of Year 9, students explain how geographical processes change the characteristics of places. They analyse interconnections between people, places and environments and explain how these interconnections influence people, and change places and environments. They predict changes in the characteristics of places over time and identify the possible implications of change for the future. Students analyse alternative strategies to a geographical challenge using environmental, social and economic criteria.

Students use initial research to identify geographically significant questions to frame an inquiry. They evaluate a range of primary and secondary sources to select and collect relevant and reliable geographical information and data. They record and represent multi-variable data in a range of appropriate digital and non-digital forms, including a range of maps that comply with cartographic conventions. They use a range of methods and digital technologies to interpret and analyse maps, data and other information to propose explanations for patterns, trends, relationships and anomalies across time and space, and to predict outcomes. Students synthesise data and information to draw reasoned conclusions. They present findings, arguments and explanations using relevant geographical terminology and digital representations in a range of appropriate communication forms. Students propose action in response to a geographical challenge, taking account of environmental, economic and social factors, and predict the outcomes and consequences of their proposal.

Report



Year 9 – Magnetic Island Inquiry

Inquiry topic:
Investigate how people connect with Magnetic Island and the impacts of these interconnections.

Stages of Inquiry

1. Identify and list the main questions that need to be answered to complete this inquiry.
2. Analyse the main reasons why people go to Magnetic Island and the effects of these interconnections on the natural environment.
3. Create an original map, using BOLTSS, to show the location of the main human settlements on the island today and changes over time.
4. Describe the spatial distribution of settlements on the island today and suggest reasons for these locations and why there have been changes over time.
5. Propose a strategy to improve accessibility to Magnetic Island (e.g. build a bridge or lower ferry prices).
6. Predict the possible social, economic and environmental outcomes and consequences of this proposal.

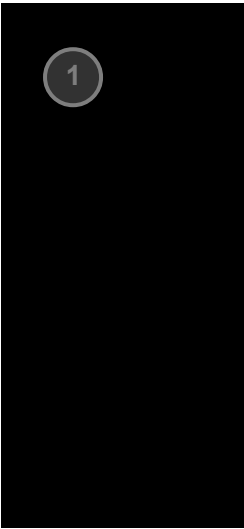
How do people connect with Magnetic Island?

Inquiry questions

Where is Magnetic Island?
How many people live on Magnetic Island?
Where are the main settlements on Magnetic Island?
Who goes to Magnetic Island?
Why do people go to Magnetic Island?
When do people go to the island?
How do people get to the island?
Should a bridge be built to improve accessibility to the island?
What would be the impacts of more people on the island?

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The groups of people going to Magnetic Island include: Magnetic Island residents, backpackers, Townsville locals and visitors to Townsville. In 2008 there were 2374 people living on the island. Most don't live on the island but travel to and from the island either to go to school, or to get excursions from the main land that aren't available on the island. The backpackers go to the island for the parties and bars there. To accommodate for these backpackers there have been backpacker hostels left around the island. Based on a survey conducted by our class, Townsville locals, most of the time, go for either a day trip or for a long weekend. When they do this they will spend most of their time at the bars, visitors



coming to Townsville go to Magnetic Island for a day trip and spend most of their time at the beaches. The effects on the natural environment from all these people travelling to and from the island come from the pollution from the ferries/buses going from Townsville to Holly Bay. Also the Magnetic Island residents clearing trees for houses affect the natural environment of Magnetic Island. Overall, these interconnections have a limited impact on the environment of Magnetic Island as though most of it is a national park, there are strict guidelines as well as specific roads and walking paths, which can satisfy most, if not all, visitors.



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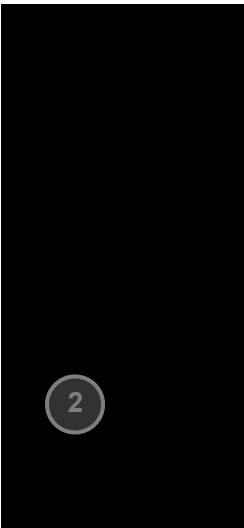
Annotations

1 **Annotation 1**
Identifies significant geographical questions to frame an inquiry

Annotations

1 **Annotation 1**
Analyses the interconnections between people and places and within environments

2 **Annotation 2**
Represents information to indicate the characteristics of places over time



The major settlements on Magnetic Island are on the south-western side of the island. These settlements are Pines Bay on the southern coast, Holly Bay is 2.73 kilometres north east of Pines Bay, 1.83 kilometres north-east of Pines Bay in Geoffrey Bay. On the tip of the island is the biggest of all the bays, located 3.76 kilometres from Geoffrey Bay is Horseshoe Bay.

There are more houses in Pines Bay in 2018 than there were in 1952. This is because, up until recently, the ferry docked in that bay. So the population rapidly increased. But because it was dangerous to dock there if there was high wind the ferry terminal was moved. Because of that most of the shops have closed down as that is one of the main bays on the island. The houses have expanded back from the beach and now go all the way across the bay itself. Holly Bay's population has increased considerably. It has at least doubled in size and now is one of the most populated bays on the island. This is because that ferry now docks in that bay and there are more shops and resorts to accommodate for this. From 1952 to 2018 Geoffrey Bay has expanded back away from the beaches and around the outer edge of land. Horseshoe Bay is the most populated Bay of the four. The number of houses there have expanded back away from the beaches, but stayed narrow. Not expanding all the way across. Along the beach is shops and restaurants, behind them residential area.

To improve accessibility to the island, I propose that we build a bridge from Pallaresa to the western side of the island between Pines Bay and West Point.

This bridge would boost the economy in Magnetic Island as it would be readily accessible to all residents of Townsville, which would open the economy to a much wider and larger

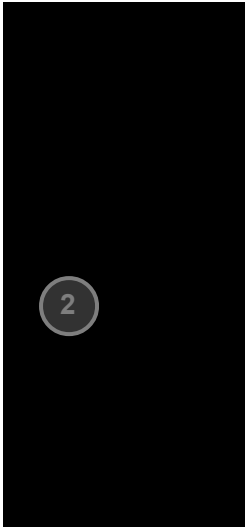
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Annotations

1 **Annotation 1**
Represents information to indicate the characteristics of places over time using photographs and a map which conforms to cartographic conventions

2 **Annotation 2**
Describes and explains the location and characteristics of places using geographical terminology

3 **Annotation 3**
Proposes an action in response to a geographical challenge



group of people. It would also provide the island a means of creating more goods and services, such as hotels, shops and retail properties to service the increased population of both tourists and of residents. This would cause an increase in the number of available employment opportunities. The building of the bridge would cause the ferries to go bankrupt as their service would no longer be required. The Townsville City Council would see an increase in rates revenue as more residents move to live on Magnetic Island. This would boost the economy of Townsville as well as boosting the number of services the council can provide. Prices of houses on the island would go up because with easier accessibility to the island from the mainland more people would want to live on the island, meaning that the price of land would go up.

There would be a higher demand for housing on the island. Subsequently, some trees need to be cleared. This, if it occurred, would destroy the habitats of various jawling species on the island. Due to the number of motor vehicles which would become present on the island, the freshwater, saltwater and air pollution would increase, endangering flora and fauna present on the island and lessening the enjoyment as these flora and fauna are no longer available to view. If there are more people driving over to the island there is a much higher chance that koalas and other wildlife could be hit and killed. There would also be more litter left around the island, so there is a higher risk of animals eating it or the rubbish being washed into the ocean and polluting the water around the island.

There would also be positive and negative social impacts associated with this bridge. A bridge would improve access to Magnetic Island, causing the island to have more visitors and allowing residents to visit the mainland more easily, as it would be easy to simply drive, or even take a bus or call there. This bridge may also cause some residents of the island to become upset as the influx of new residents, tourists and people on holiday may ruin the isolation of the island. The bridge would also cause the population of residents on Magnetic Island to skyrocket as those who want to live there but don't want the hassle of the ferries, could buy a house and stay there. This bridge would cause increased traffic in quiet suburbs, such as Palmyra due to the proximity to the bridge.



Annotations

1 **Annotation 1**
 Predicts the outcomes and consequences of the proposed action using specific examples as evidence

2 **Annotation 2**
 Presents a detailed reasoned conclusion