Ready-Ed Publications

Australian Geography Series

PHOTOCOPY MASTERS

Year 7 - Unit 1: Resources In The World

Aligned with the Australian National Curriculum

Section 1: Using And Classifying Environmental Resources

Section 2: Water

Section 3: Environmental Hazards

Section 4: Non-Renewable Resources

CURRICULUM LINKED

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Teachers' Notes

Year 7 - Unit 1: Resources In The World and *Year 7 - Unit 2: Place And Liveability* have been written by the same author for Year 7 students studying Geography in Australia. This book contains four sections which are clearly linked to Unit 1 of the Year 7 Australian National Curriculum.

The first section of this book investigates environmental resources: renewable resources, non-renewable resources and continuous resources. It explains how they are used and how we classify them.

The second section of the book is an in-depth study of water as an essential and renewable resource. It encourages the students to think about how we access water and how we can save this precious resource. It creates an awareness of the unequal distribution of water around the world and describes how different countries manage the water that they have. Indigenous water management and knowledge is also considered and the concept of virtual water is introduced.

The third section of the book is entitled *Environmental Hazards.* It concentrates on floods that have occurred in Australia and Thailand and compares how each country has managed flooding disasters in their own area. It examines different types of floods and why they occur.

The final section of the book explores the non-renewable resources: coal, oil and gas. It looks at how each non-renewable resource is created, used and managed in Australia and overseas. It introduces the terms 'natural capital' and 'financial capital'.

The activity sheets in this book have been designed to help students appreciate environmental resources and begin to understand the importance that they play in all of our lives. Students are given the opportunity to develop their Geography skills, knowledge and understanding, through: observing, questioning, planning, collecting, evaluating, processing, analysing, interpreting and concluding.

Year 7 - Unit 1 and *Year 7 - Unit 2* are both part of the *Australian Geography Series* which compromises nine books in total.

Curriculum Links

Knowledge and Understanding: Geography

Sub-strand: Water in the World

Students learn about the categorisation of environmental resources and the way water connects and alters places as it passes through environments (AC9HG7K01)

- categorising resources into renewable, non-renewable and continuous resources, and providing examples of each
- describing how water moves through the environment, such as groundwater; soil moisture (green water); surface water in dams, rivers and lakes (blue water); and how this movement connects places, and discussing how water can also be a resource in forms such as salt water, ice or water vapour
- exploring the environmental, economic and/or social effects of water as it connects places; for example, the environmental impact of water diversion in the Snowy Mountains, the economic benefits of irrigation in the Ord River or the social significance of the Mutitjulu Waterhole connecting Australian First Nations Peoples in Central Australia
- describing how moving water changes landscapes, such as through erosion of soil and rock or by carving valleys into mountains

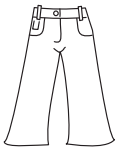
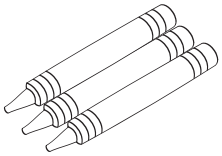
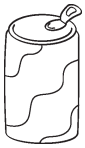
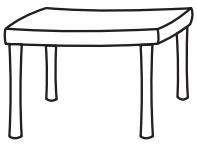
Students learn about the location and distribution of water resources in Australia, their effects, and strategies to manage water sustainability (AC9HG7K02)

- mapping the location of Australia's water resources, including surface water and groundwater
- detailing the distribution of Australia's water resources and its implications for people, such as the challenges faced by rural and remote communities with limited access to water
- recognising the causes of variability in water resources or scarcity, such as absolute shortages of water (physical causes), insufficient development of water resources (economic causes), or how water is used (e.g. for farming, industry, drinking, watering or washing)
- analysing factors contributing to variability in water resources or scarcity, including location, climate, topography, seasonality and evaporation
- investigating why water is challenging to manage and sustain, due to competing uses, variability of supply over time and shared access
- evaluating strategies for managing sustainable water resources, such as recycling greywater, harvesting and re-using stormwater, desalination, inter-regional water transfer, virtual water trade and reducing water consumption

Social And Economic Uses Of Resources

❑ **Read the information on page 7, then complete the tasks below.**

A. Environmental resources are used to make many of the items that we use every day. Fill in each space with the name of an every day item pictured below.


1. Balls of cotton grow on plants. The cotton is picked, cleaned, made into thread and woven into cloth.
2. Aluminium is made from the mined resource bauxite. Huge amounts of electricity is used to extract the aluminium from the bauxite using machinery. A factory then converts the aluminium into sheets ready for use.
3. Trees are cut down and a carpenter makes the wood into furniture.
4. Made from the skin of animals.
5. Steel is made from three mined resources: iron ore, limestone and coal. A blast oven is used as a part of the process to change the three resources into one - steel.
6. Wax which comes from bees.

B. Are the above resources renewable or non-renewable? Place a tick in the correct box and then explain why it is a renewable or non-renewable product.

Resource	Renewable	Non-Renewable	Explanation
1. wood			
2. leather			
3. cotton			
4. aluminium			
6. wax			
6. steel			

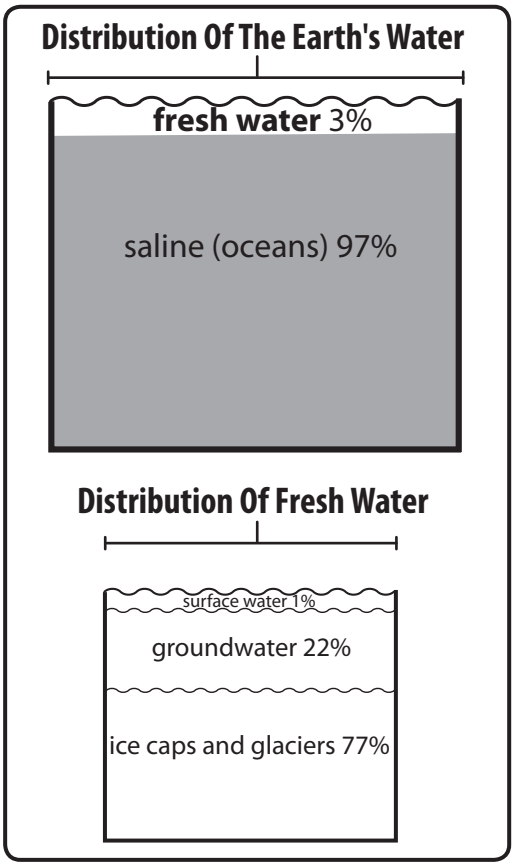
Challenge

C. The quantity of resources that a country naturally possesses has a huge impact on a country's potential wealth or the wealth of those who own the rights to mine the resources. Use the internet to find out which resources Australia is rich in, and record your answer below.

_____

Using And Accessing Water

❑ **Read the information and complete the tasks.**



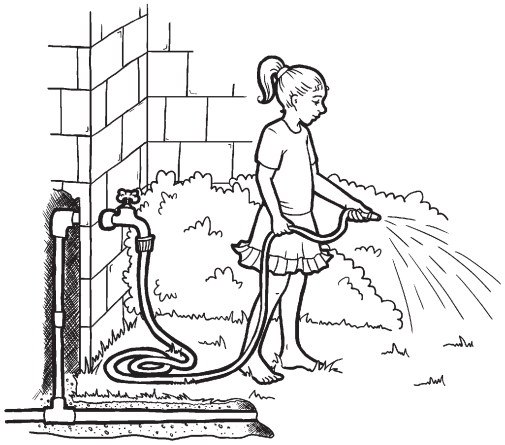
A. Record the information left as a pie graph and a bar graph.

The Distribution Of The Earth's Water

The Distribution Of Fresh Water

B. Think about your family's daily water usage. Estimate how much water you use for each activity listed in the table right. You could choose from the percentages below to complete the table.

2% 25% 9% 39% 1% 4% 6%



Water Use	Estimated Percentage
1. showers and baths	
2. toilets	
3. washing machines	
4. taps – brushing teeth, washing hands, glasses of water	
5. evaporative air conditioners	
6. dishwashers	
7. watering gardens	
8. pool and/or spa	

Did You Know?

Businesses and industries in Australia use less scheme water in total than private users. To ensure that businesses achieve this they are required to submit a Water Efficiency Management Plan.

Distribution Of Fresh Water

❑ **The information on page 19 together with your research skills will help you to complete the tasks on this page.**

A. Analyse the following pictures to determine where fresh water is being used in each area of the Australian community.

1.

2.

3.

4.

5.

6.

B. When there are only limited amounts of resources available for a community to use, who do you think is involved in making sure that the resources are used fairly? Write down a list of people who you think would be involved in monitoring this process and say why.

Person's Role	Why

C. Use the back of this sheet to plan a newspaper article entitled 'Australians Use More Than One Million Litres Of Fresh Water Per Person Each Year'. Write up the final copy in your workbook or use the computer to make it look like a real newspaper article.

Challenge

D. Write a persuasive piece of writing to convince someone that water will not always be classified as a renewable resource.

Indigenous Water Management 2

❑ **Read the information on page 25 then complete the task below.**

A. Use the traditional Indigenous art symbols below to create a drawing or painting which shows the importance of water to First Nations Australian people. Use the box provided to practise drawing the symbols and then create your art design in your workbook.

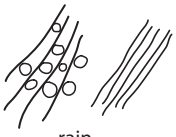

rainbow or cloud or cliff or sandhill


two men sitting

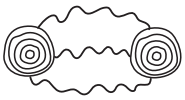

camp site, stone, well, rock hole, fire, hole or fruit


footprints


water, a rainbow, a snake, lightning, a string, a cliff or honey store


rain


fire or smoke or water or blood


water holes connected by running water


clouds, boomerangs or windbreaks


resting place


man


usually means four women sitting


sitting down place


st

Trading In Virtual Water

❑ **Read the information and study Table A and Table B to help you to complete the questions.**

If something is 'virtual' it means that it does not actually exist in the form you may expect. Virtual water is water used in the production process of food or other commodities such as electricity. For example, in order to produce one kilogram of wheat it takes approximately 1,000 litres of water. This gives the wheat produced a virtual water content of 1,000 litres. A way in which water can be spatially redistributed is by measuring the amount of virtual water in products traded with other countries.

Countries with significant amounts of water can produce products which require large amounts of water and export those products to countries which lack the water to produce those goods. This relieves pressure on the water resources of different countries. This is how 'virtual water trade' occurs.

TABLE A

Product	Quantity	Virtual Content Per Litre
glass of milk	250 ml	250
cup of coffee	125 ml	140
cup of tea	125 ml	20
slice of bread	30 g	40
slice of bread with cheese	30 g + 10 g	90
glass of orange juice	200 ml	170
hamburger	150 g	2400
beef	1 kg	15500
cheese	1 kg	4000
butter	1 kg	18000

TABLE B

Product	Quantity	Virtual Content Per Litre
car	1100 kg	400000
cotton t-shirt	75 g	810
jeans	1 pair 1 kg	10850

A. Use Table A above to work out how much virtual water is needed to make the following meals.

1. A glass of milk with a slice of bread and cheese. _____
2. A hamburger and glass of orange juice. _____
3. A cup of coffee and two slices of toast. _____

B. How much virtual water is used to make the following everyday products that you own?

1. How many cars do your family own? How many litres of virtual water was used to manufacture them? _____
2. How many pairs of jeans do you own? How many litres of virtual water was used to make them? _____
3. How many t-shirts do you own? How many litres of virtual water was used to make them? _____

C. Explain the term 'virtual water trade' in your own words.

_____

_____

_____

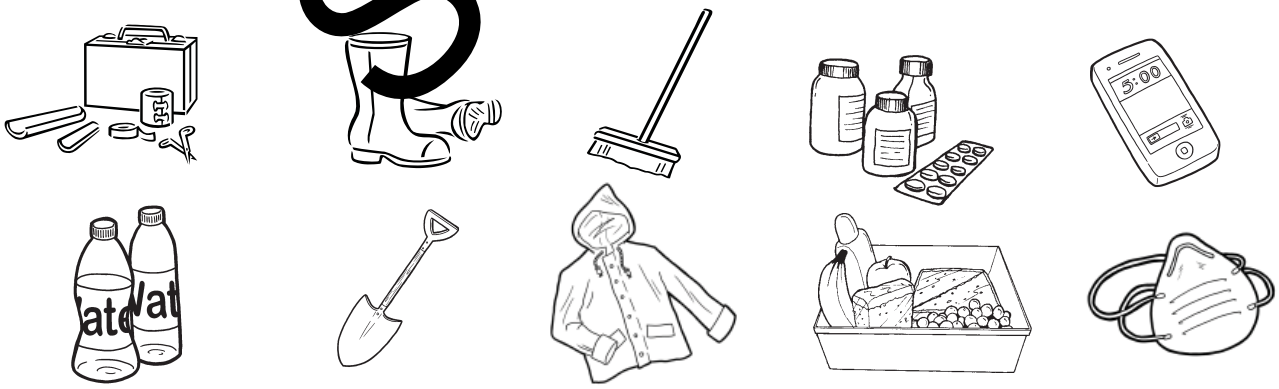
Thailand's Flood Management 3

❑ **Read the information on page 39 then complete the tasks below.**

A. What could you have done to help either Thailand or Australia when they experienced floods? Fill in the T Chart below. Discuss your ideas in a class feedback session.

Australia	Thailand

B. Below are items that you could take with you as a volunteer cleaning up in the Brisbane floods. Rank them from 1 (most important) to 10 (least important). Discuss your answers in class to determine why students ranked certain items where they did.



1.	6.
2.	7.
3.	8.
4.	9.
5.	10.

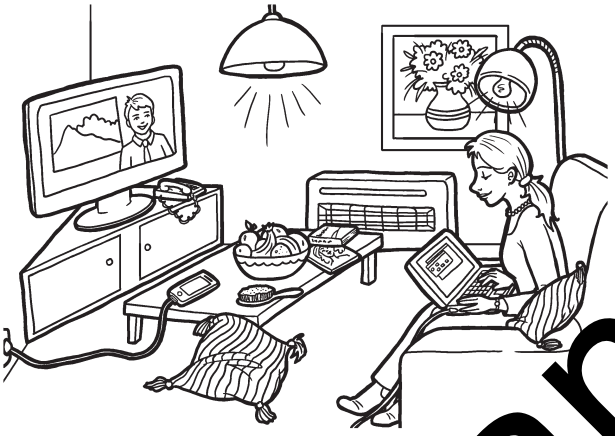
Coal Creates Electricity 2

❑ **Complete the tasks on this page after reading the information on page 44.**

A. Make a list of all the items in your home which use electricity. If you have more than one item write how many you have next to it, i.e. TV (3).

1.	6.	11.
2.	7.	12.
3.	8.	13.
4.	9.	14.
5.	10.	15.

B. Look at this picture of a lounge room. Circle all of the items which use electricity.



List five of the items that you have circled.

1. _____
2. _____
3. _____
4. _____
5. _____

What else could be found in a lounge room which uses electricity?

_____

Creating Energy Efficient Homes

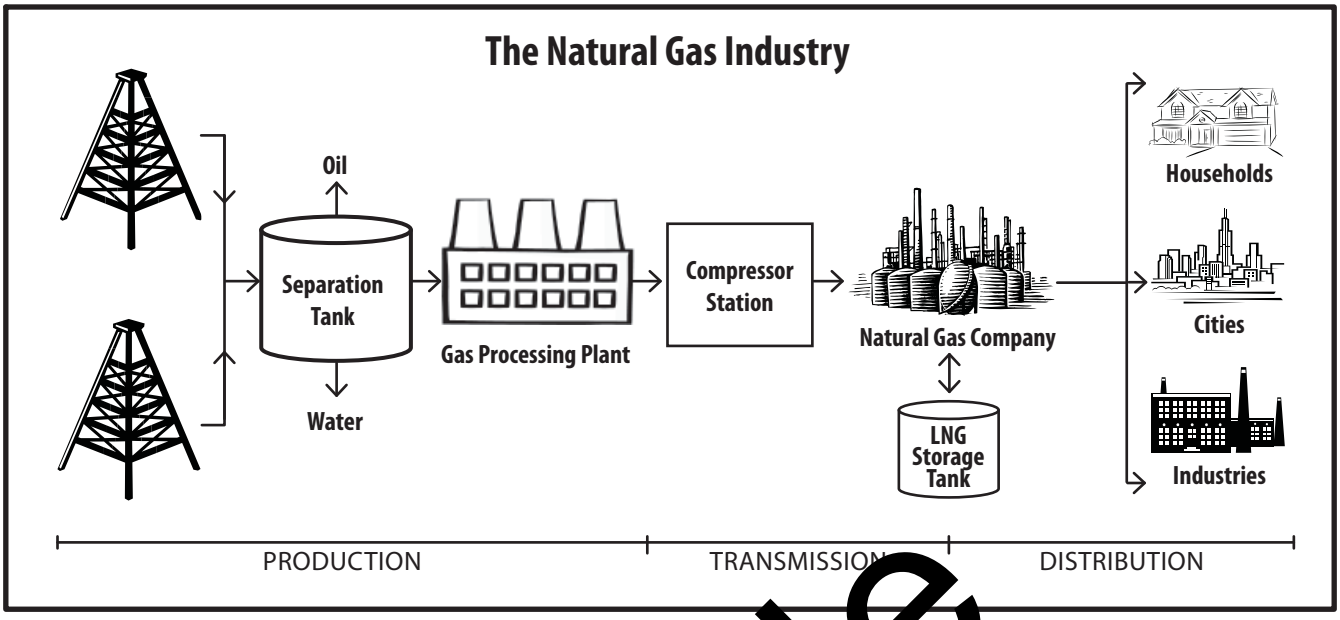
C. There are many ways to reduce the use of energy in homes which results in using less electricity and produces lower energy bills. Find out how the following items/ procedures contribute to creating an energy efficient home, then complete the table.

Ways To Reduce Energy Use	What Is It?	Source Of Information
efficient refrigeration		
efficient warming		
replace incandescent bulbs with CFLs		
install lighting controls		
purchase green electronics		
efficient cooling		
efficient drying		
efficient washing		

D. In groups of two or three prepare a presentation for the class demonstrating how to create an energy efficient house. Presentation ideas: role play, PowerPoint, movie, poster or advertisement.

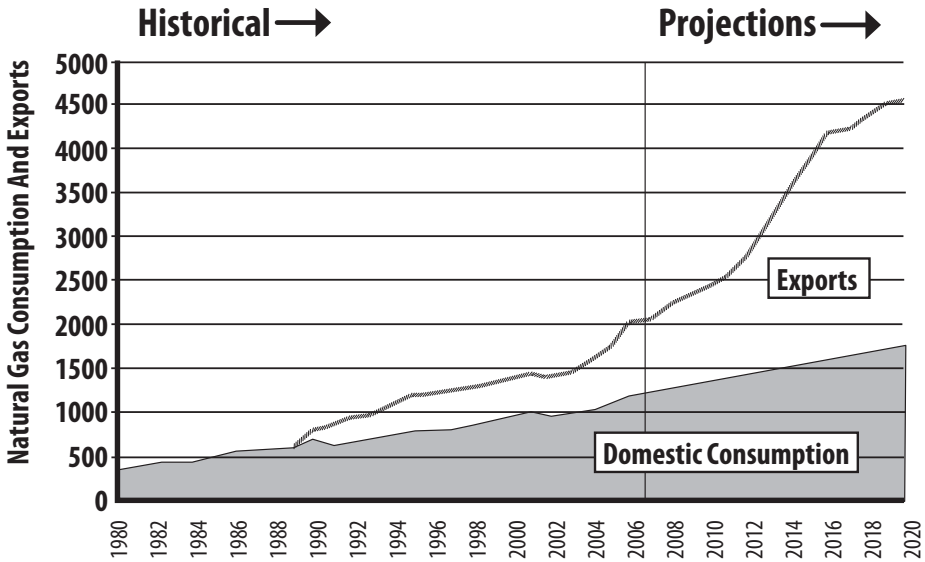
Non-Renewable Resources 2

❑ **After reading the information on pages 44, 46 and 48 complete the tasks on this page.**



A. Study the diagram which shows what happens to natural gas before it is distributed. Write a paragraph explaining the process from start to finish.

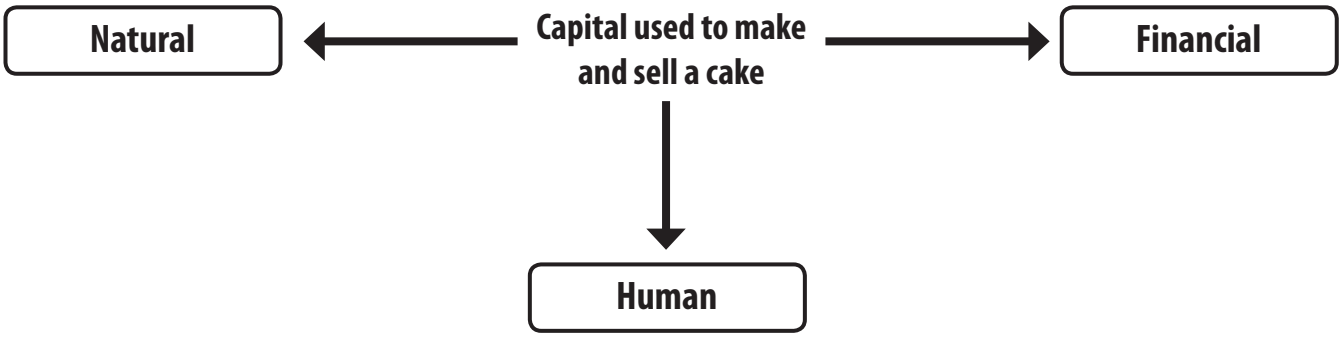
B. The line graph below shows how natural gas production has greatly increased in Australia since 1990. Write down in your own words why you think domestic consumption has increased as well as exports to foreign countries. Use the back of this page or your workbook to record your response.



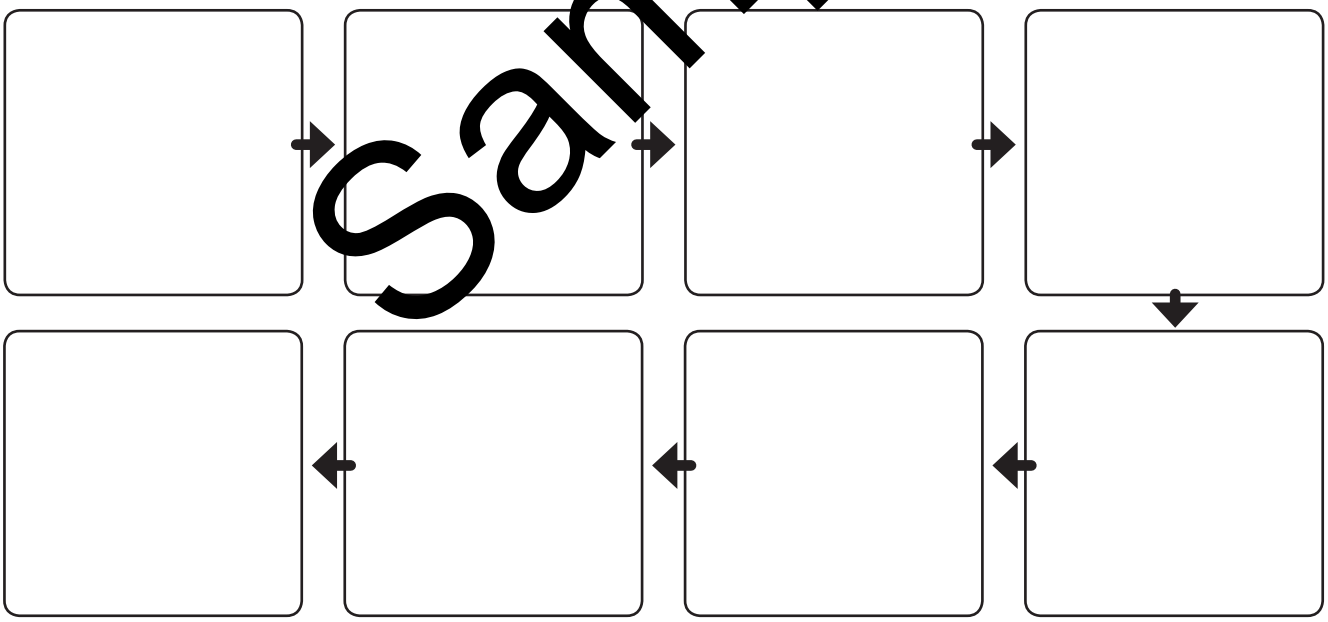
Natural And Financial Capital 2

❑ **Read the information then complete the tasks.**

A. Cakes for sale! Imagine that you are having a cake stall to raise money for your school to buy new equipment. Think about the process involved in making and selling them, as well as the ingredients that is needed. Complete the mind map below to show how the three types of capital go in to making and selling a cake.



B. Complete the flow chart below to show the process of making and selling a cake from start to finish. Think about how and where the ingredients were grown, transport, packaging, purchasing, the people involved, equipment involved, and the final sale.



C. Summarise in your own words how all three forms of capital (natural, financial and human) are used in the process of producing and selling a cake.

_____

_____

_____

_____