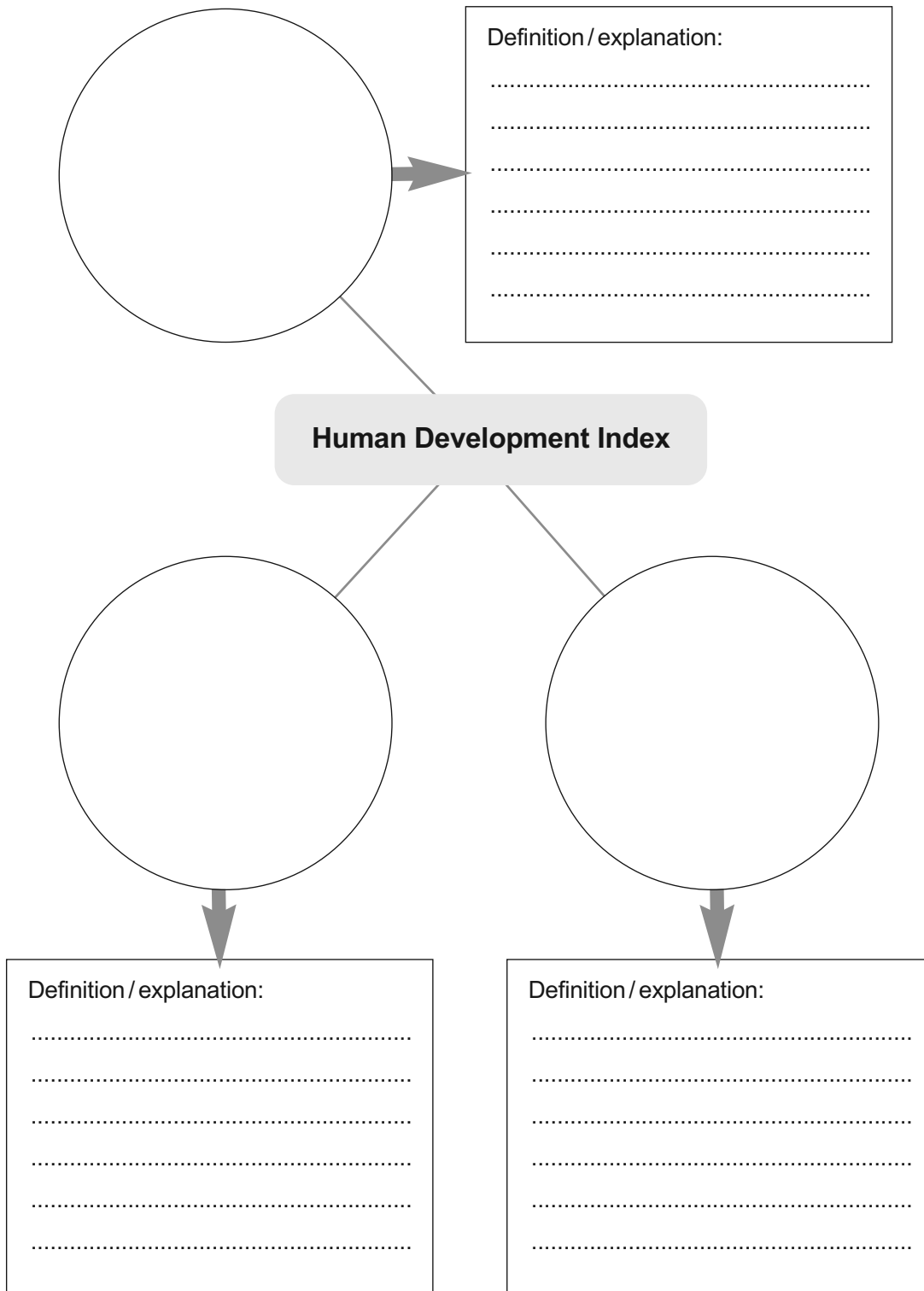


The following table lists all the Economic Development worksheets for the Teacher Guide. The third column indicates for which lesson plan the worksheets will be useful.

Worksheet No.	Worksheet title	Lesson Plan
3.1	How do we calculate HDI?	3.1(1)
3.2	Quality of Life Index	3.1(1)
3.3	Classifying local industry	3.1(3)
3.4	The geographically-skilled employee	3.1(3)
3.5	Industrial development pie charts	3.1(4)
3.6	Industrial development divided bar graphs	3.1(4)
3.7	Industrial development triangular graph	3.1(4)
3.8	Newly industrialised countries (NICs)	3.1(5)
3.9	Top ten Brazil _____ facts	3.1(5)
3.10	A local agricultural system	3.2(1)
3.11	Interview with a farmer	3.2(1)
3.12	Farming in different climates	3.2(2)
3.13	Human inputs in farming	3.2(2)
3.14	Case study: Plantation agriculture in Sarawak, Malaysia	3.2(3)
3.15	Commercial v subsistence farming	3.2(4)
3.16	The rice farming landscape	3.2(4)
3.17	What have you eaten in the last 24 hours?	3.2(5)
3.18	Food shortages in your country	3.2(5)
3.19	The effects of disease caused by food shortages	3.2(6)
3.20	Solutions to the problem of food shortages	3.2(6)
3.21	Bolivia factfile	3.2(7)
3.22	Letter to the President	3.2(7)
3.23	The world of work	3.3(1)
3.24	Industrial location diamond ranking	3.3(2)
3.25	Factors influencing the location of the iron and steel industry	3.3(3)
3.26	Textile industry case study	3.3(3)
3.27	Odd One Out: Industry (question sheet)	3.3(4)

3.28	Odd One Out: Industry (word grid)	3.3(4)
3.29	Postcard from an ideal holiday	3.4(1)
3.30	The worst holiday in the world	3.4(1)
3.31	The benefits and problems of global tourism	3.4(2)
3.32	The world's top tourist destinations	3.4(2)
3.33	My Kenyan holiday	3.4(3)
3.34	Nairobi climate graph	3.4(3)
3.35	Worldwide energy use	3.5(1)
3.36	Global energy sources	3.5(1)
3.37	The formation of fossil fuels	3.5(2)
3.38	The problems with fuelwood collection	3.5(3)
3.39	Factfile: reducing fuelwood use with more efficient stoves	3.5(3)
3.40	The advantages and disadvantages of renewable energies	3.5(4)
3.41	Energy sources revision quiz	3.5(5)
3.42	Household electrical appliance audit	3.5(5)
3.43	Nuclear power station location	3.5(6)
3.44	The advantages and disadvantages of hydro-electric power	3.5(7)
3.45	Factfile: the Pico Hydro system	3.5(7)
3.46	Does rainfall affect water supply?	3.6(1)
3.47	Water transfer schemes	3.6(2)
3.48	How challenging is your natural environment?	3.7(1)
3.49	Effects on people and the environment	3.7(2)
3.50	Creating a new case study: tourism in a challenging environment – the Arctic	3.7(3)
3.51	Environmental damage caused by tourism	3.7(4)
3.52	Environmental lifestyle audit	3.7(4)
3.53	Areas threatened by sea-level rise from climate change	3.7(5)
3.54	Deforestation in Borneo	3.7(6)
3.55	Sustainable living	3.7(7)
3.56	Reduce, re-use, recycle	3.7(7)
3.57	The Great Barrier Reef	3.7(8)
3.58	Visitors to the Great Barrier Reef	3.7(8)
3.59	National Parks and protected areas around the world	3.7(9)
3.60	National Park factfile	3.7(9)

Use the three circles to write in the data needed to calculate the Human Development Index. Then, write a definition or explanation of each one in the space provided.



Look at the data in the table below, showing Quality of Life for selected countries. Then answer the questions below it.

Quality of Life data by country

Ranking	Country	Index
1	USA	86
2	New Zealand	76
4	France	75
7	Germany	74
9	UK	74
10	Japan	74
13	Australia	73
29	Canada	70
39	Mexico	67
46	Bahamas	65
49	Cyprus (Greece)	65
57	Jamaica	63
69	South Africa	60
74	Botswana	60
92	Singapore	57
93	China	57
105	Sri Lanka	56
117	Russia	54
128	Kenya	53
141	India	50
157	Saudi Arabia	48
172	Pakistan	44
180	Zimbabwe	42
183	Afghanistan	40
191	Somalia	28

Source: www1.internationalliving.com/qofl2011/

- 1 (a) Which is highest in this list? What type of country is it?
(b) Which is lowest in this list? What type of country is it?
- 2 Do any of the values surprise you? If so, why?
- 3 If your country is not on this list, research the data for it using the website address above.
 - (a) Do you think this is a fair position for your country? Support your answer with reasons.
 - (b) Compare your opinion with those of your classmates.

Classifying local industry

Look at the companies offering jobs in your local area. Then classify them according to their industrial classification in the boxes below.

Primary industries:	Secondary industries:	Tertiary industries:	Quaternary industries:
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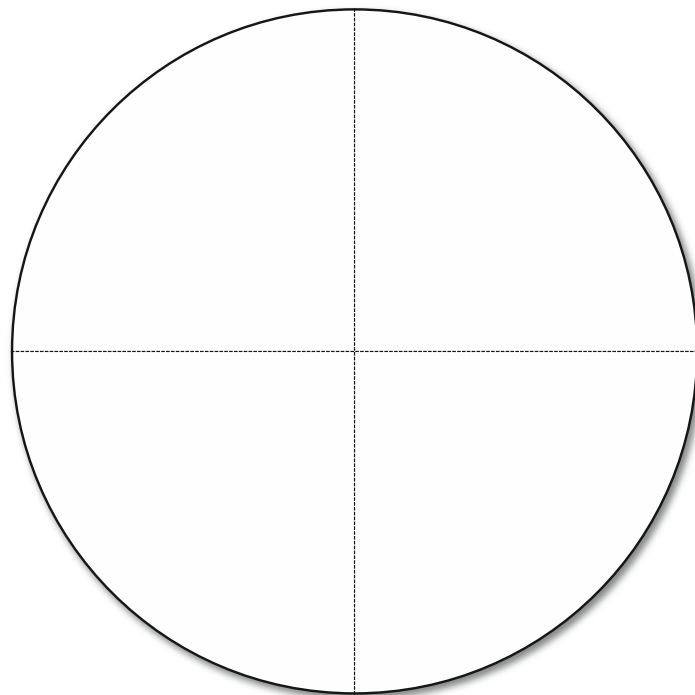
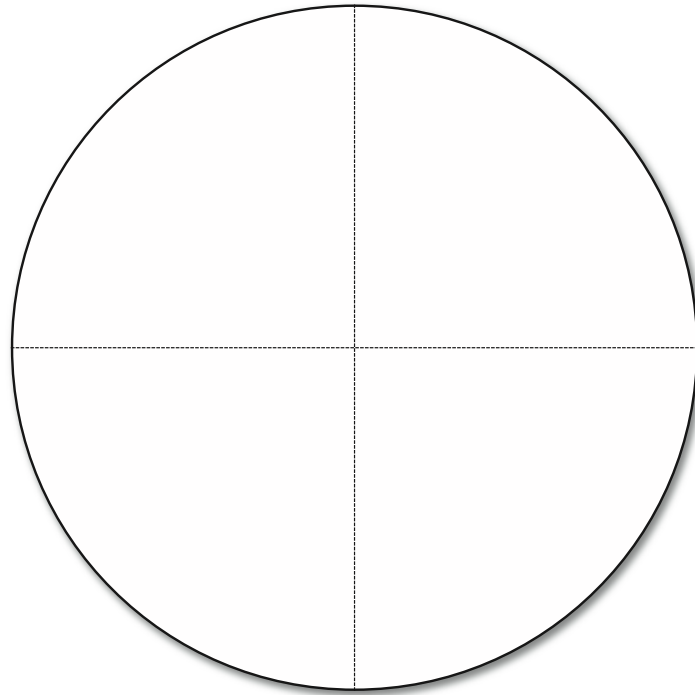
The geographically-skilled employee

Annotate the outline of the people with the qualities you think employers want.
Then add the skills that studying geography can help you develop.



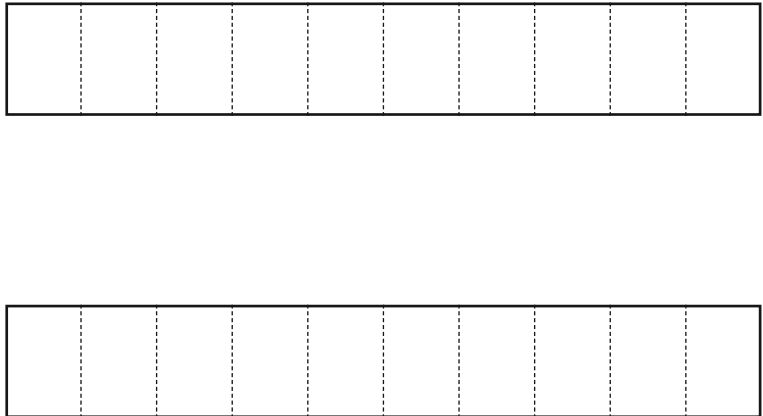
Industrial development pie charts

Draw pie charts like those in diagram **E** on p. 123 of the Student Book for two of the other countries listed in table **C** on p. 122. Remember to label the pie charts accurately.



Industrial development divided bar graphs

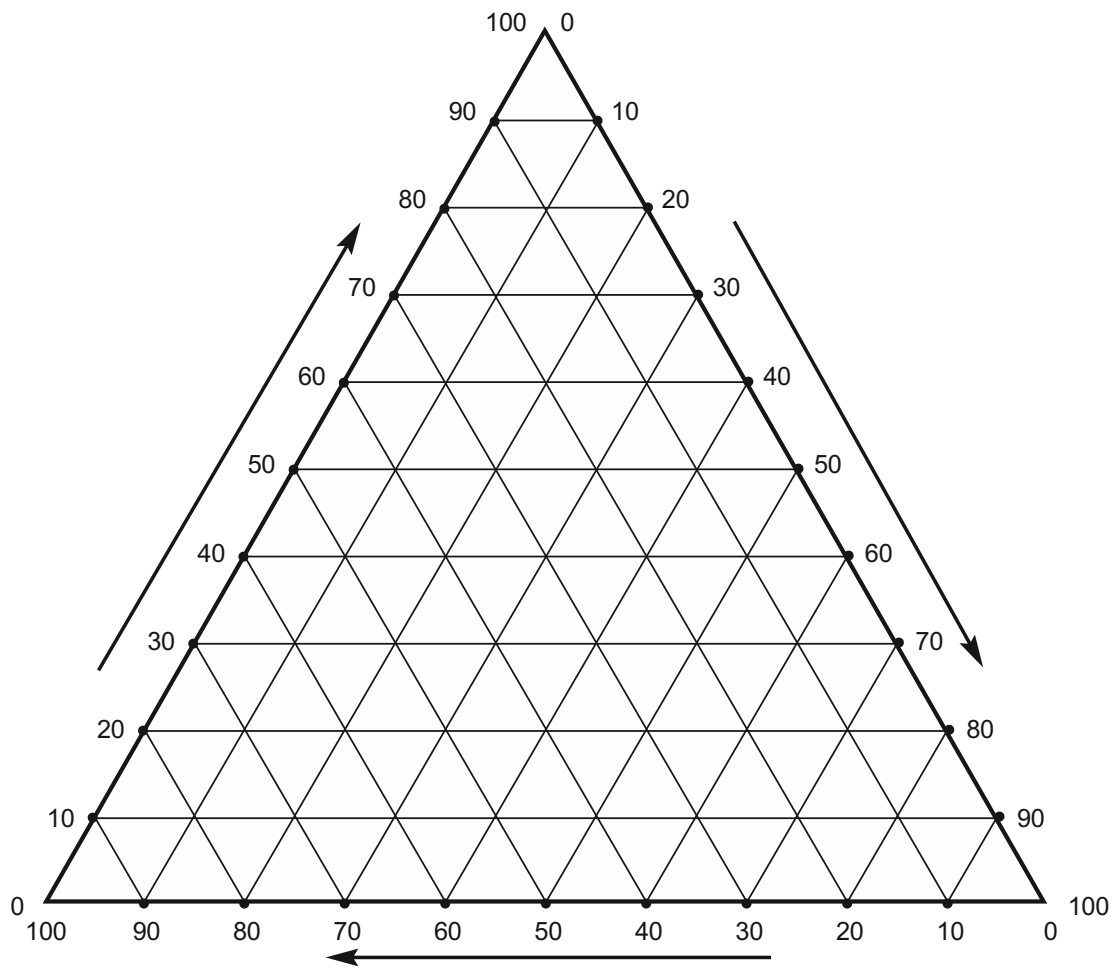
Draw divided bar graphs like those in diagram F on p. 123 of the Student Book for two of the other countries listed in table C on p. 122. Remember to label the charts accurately.



The image contains two identical empty divided bar graph templates. Each template is a horizontal rectangle divided into ten equal-width segments by vertical dashed lines. The templates are positioned one above the other, centered within a larger rectangular frame.

Industrial development triangular graph

Copy the information for Nigeria, Bangladesh and the USA from p. 123 of the Student Book onto the graph below and then add the information for all the other countries in table C on p. 122. Remember to label the graph clearly.



Newly Industrialised Countries (NICs)

Find and mark the NICs on the map and then annotate the map with details of the common characteristics of these countries.



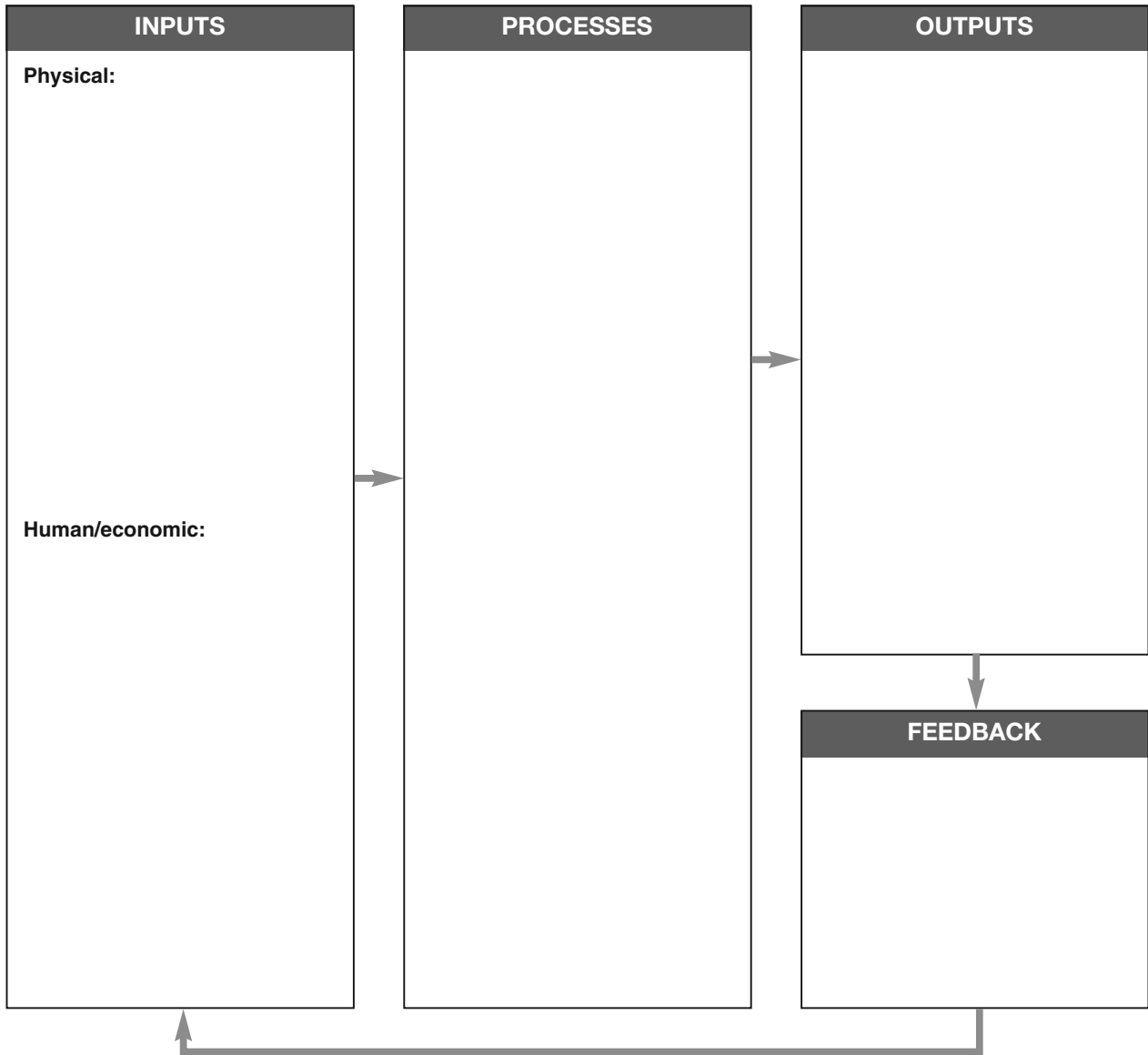
Look *either* at the Amazon *or* at football (or some other feature of Brazil).

Enter your chosen subject in the line above, and your 10 facts below. Then add some facts from your classmates as well.

Your facts
Top fact 1:
Top fact 2:
Top fact 3:
Top fact 4:
Top fact 5:
Top fact 6:
Top fact 7:
Top fact 8:
Top fact 9:
Top fact 10:

Your friends' facts
Top fact 1:
Top fact 2:
Top fact 3:
Top fact 4:
Top fact 5:

Type of agriculture:



Name of farmer:
Name of farm:
Location of farm:
How long have you been farming?
What do you grow on your farm?
What kind of inputs do you need?
What do you enjoy most about farming?
What do you enjoy least?
Now add some questions of your own below:

Tropical rainforest:
What type of farming is it?
What difficulties will be faced by farmers?
.....
.....
How can they overcome these difficulties?
.....
.....
.....

Hot desert:
What type of farming is it?
What difficulties will be faced by farmers?
.....
.....
How can they overcome these difficulties?
.....
.....
.....

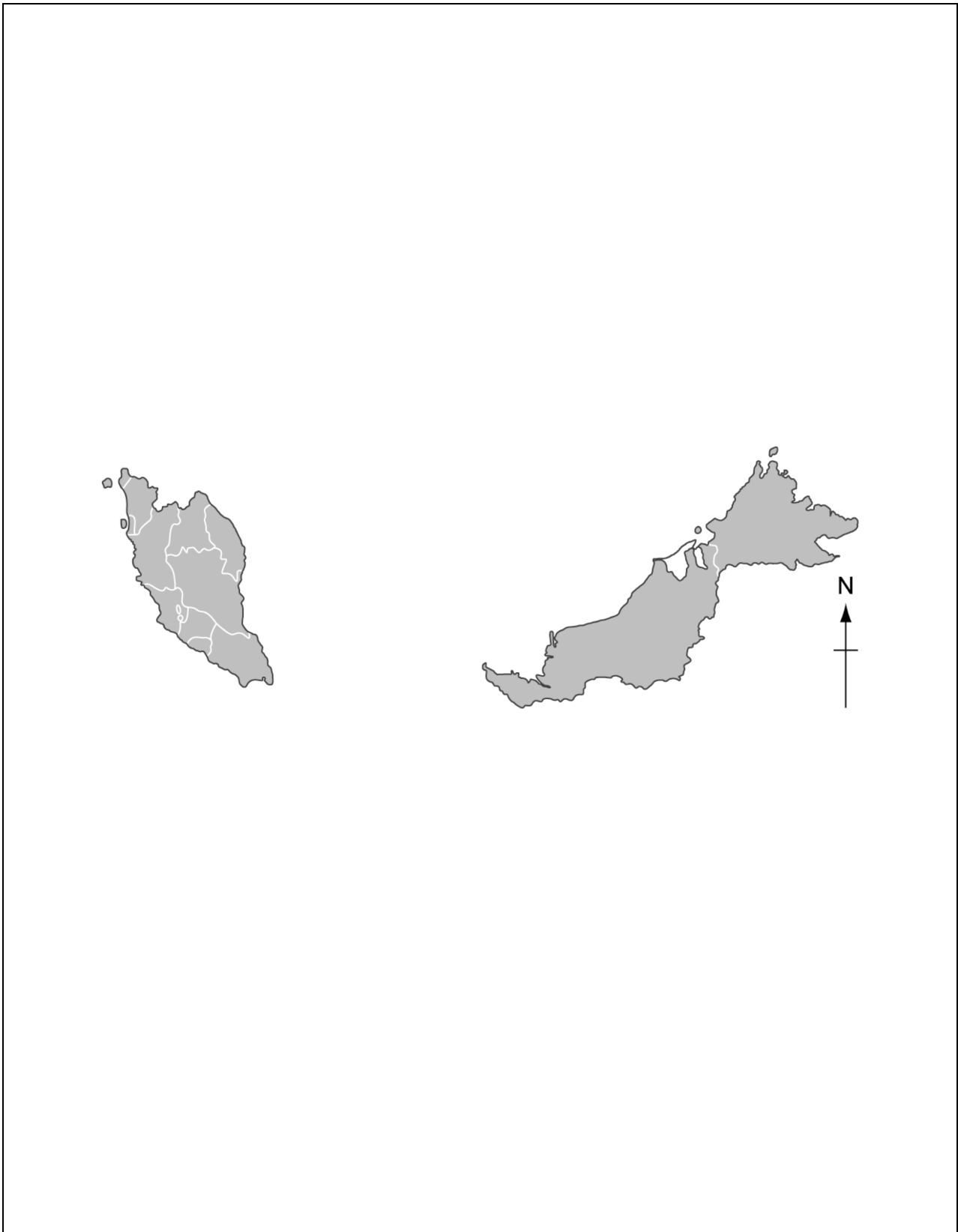
Temperate:
What type of farming is it?
What difficulties will be faced by farmers?
.....
.....
How can they overcome these difficulties?
.....
.....
.....

What are the most important human inputs in farming?
Write down your rank order from most to least important.
Explain your ranking of each input.

<p>Human input 1:</p> <p>.....</p> <p>Reason for importance:</p> <p>.....</p> <p>.....</p>
<p>Human input 2:</p> <p>.....</p> <p>Reason for importance:</p> <p>.....</p> <p>.....</p>
<p>Human input 3:</p> <p>.....</p> <p>Reason for importance:</p> <p>.....</p> <p>.....</p>
<p>Human input 4:</p> <p>.....</p> <p>Reason for importance:</p> <p>.....</p> <p>.....</p>
<p>Human input 5:</p> <p>.....</p> <p>Reason for importance:</p> <p>.....</p> <p>.....</p>

Case study: Plantation agriculture in Sarawak, Malaysia

Annotate the map of Malaysia below with lots of detail about the country and people of Malaysia.



Outline the differences between the two types of farming by filling in the table below.

Extensive commercial farming	Small-scale subsistence farming
Physical inputs:	Physical inputs:
Human and economic inputs:	Human and economic inputs:
Outputs and crops grown:	Outputs and crops grown:

Annotate the photo with labels showing the major features of a typical rice farming landscape.



First meal:

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Midday meal:

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Evening meal:

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Snacks and anything else:

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Do any of the following factors affect food supply in your country? If so, give examples:

- Drought, floods, tropical cyclones and other extreme weather events

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- Natural disasters (especially earthquakes)

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- Outbreaks of disease (such as cholera, malaria, HIV/AIDS)

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- Pests (including locusts and quelea)

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- Civil war

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- Farming unsuitable land (leading to soil exhaustion)

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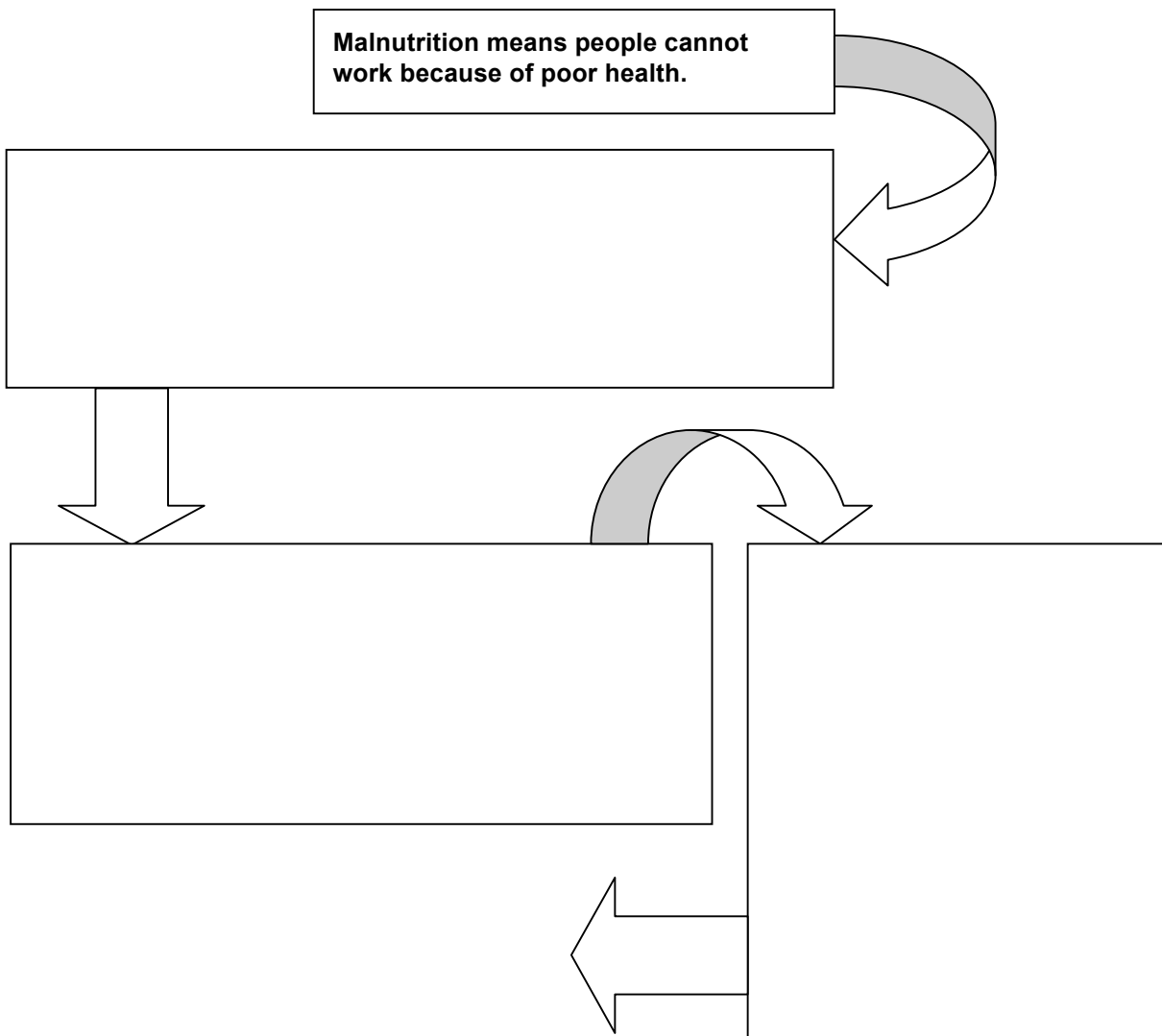
Have any of the above factors led to widespread shortages of food in your country?

.....
.....
.....

If not, why not?

.....
.....

The effects of disease caused by food shortages



The benefits brought by the **Green Revolution** are:

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The benefits brought by **genetically modified (GM) crops** are:

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The benefits brought by **intermediate** and **appropriate technology** are:

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Population:

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.....
.....

Climate:

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.....
.....

Major cities:

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.....

Landmarks and special features:

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.....
.....

Other fantastic facts (e.g. the economy, crops grown, wildlife, sport etc.):

.....
.....
.....
.....
.....
.....
.....



From:
Christian Medina
Bolivian Miners' Association
Uyuni

Date:

Mi estimado el Presidente:

Mi nombre es Christian Medina, un minero de Uyuni. I am having lots of problems because of the food shortages in the country...
continue below

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Saludos,

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Job shown:

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The good points:

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The bad points:

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Job shown:

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The good points:

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The bad points:

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Job shown:

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The good points:

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The bad points:

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Job shown:

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The good points:

.....

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.....

.....

The bad points:

.....

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.....

.....

Industrial location diamond ranking

As a group, discuss which industrial location factors you consider are most important. Then diamond rank them using this template.

The template consists of 13 empty rectangular boxes arranged in a diamond shape. The top row has 1 box. The second row has 2 boxes. The third row has 3 boxes. The fourth row has 3 boxes. The fifth row has 2 boxes. The bottom row has 1 box.

Factors influencing the location of the iron and steel industry

Annotate the picture below with details of the factors that cause the iron and steel industry to locate in specific areas.



Image: tinkerbrad/CC by-SA 2.0

Use the following writing frame to help complete your case study.

The textile industry originally grew up in _____
during the _____. However, big changes took place during
the _____ and production shifted to _____.

There were many reasons for this including _____

_____.

Most recently, production has been concentrated in countries such as _____
_____.

Bangladesh has a mixture of small-scale production and big factories. Some businesses have moved
to urban areas to take advantage of _____

_____.

The industry has grown to _____
_____.

However, poorly enforced safety laws are causing concern for clothing retailers following the

_____.

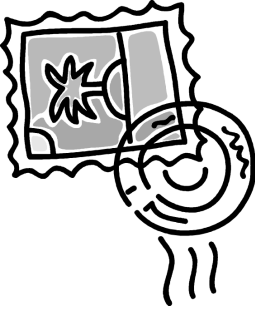
Circle the odd one out from the following lists, with reference to the grid on **Worksheet 3.28**. Remember to write down the reason justifying your choice.

Word numbers	1	12	20
Reason:		
Word numbers	2	23	24
Reason:		
Word numbers	2	3	6
Reason:		
Word numbers	8	15	21
Reason:		
Word numbers	4	9	16
Reason:		
Word numbers	5	14	17
Reason:		
Word numbers	2	6	7
Reason:		
Word numbers	4	10	19
Reason:		

1: Secondary	2: Iron and steel	3: Fish processing
4: Informal	5: Limestone	6: Mining
7: Agriculture	8: Profit	9: Formal
10: Inputs	11: Processes	12: Manufacturing
13: Electricity	14: Coal	15: Capital
16: Secure	17: Wood	18: Labour
19: Outputs	20: Tertiary	21: Raw materials
22: Fishing	23: Telecommunications	24: Robotics

Postcard from an ideal holiday

Draw (or find) a picture to put on the front of your card. Then on the back write a message to a friend explaining why you are at your ideal holiday destination.



[Back]
To: _____

Dear _____

[Front]
Wish you were here!

In our own country we really don't want to go to: _____

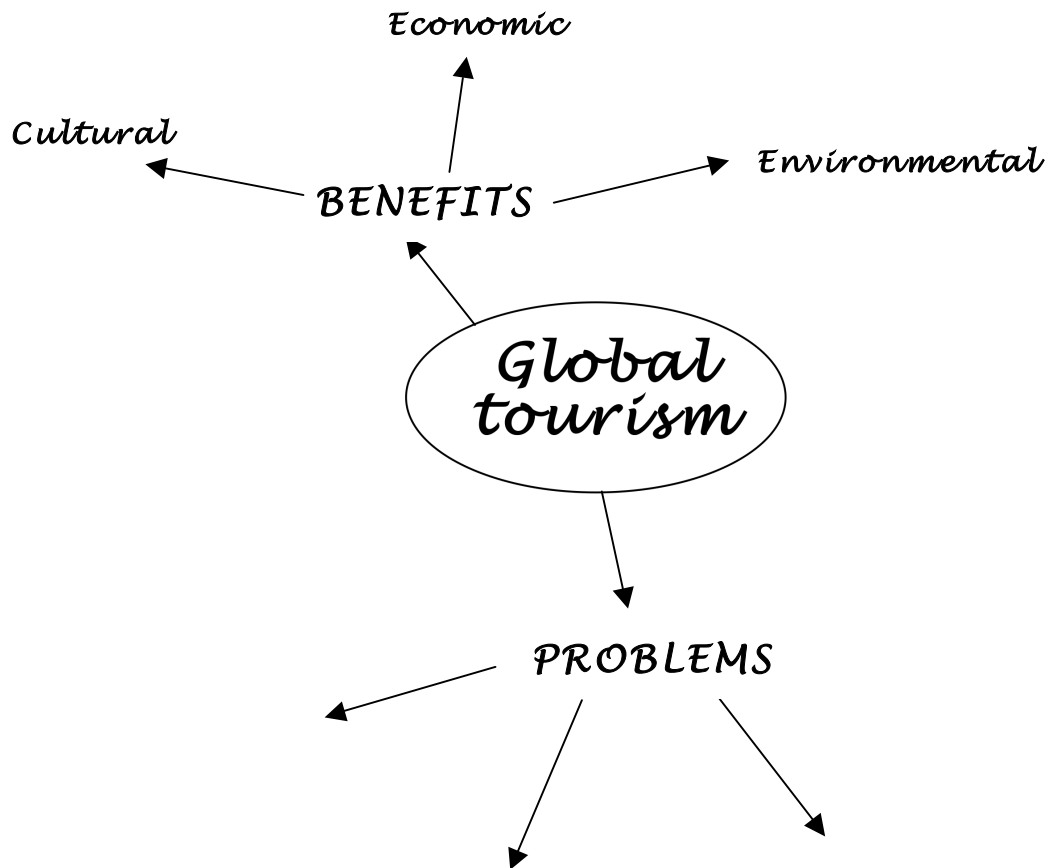
We think it would be a terrible holiday destination because:

And on our continent we don't think we would like:

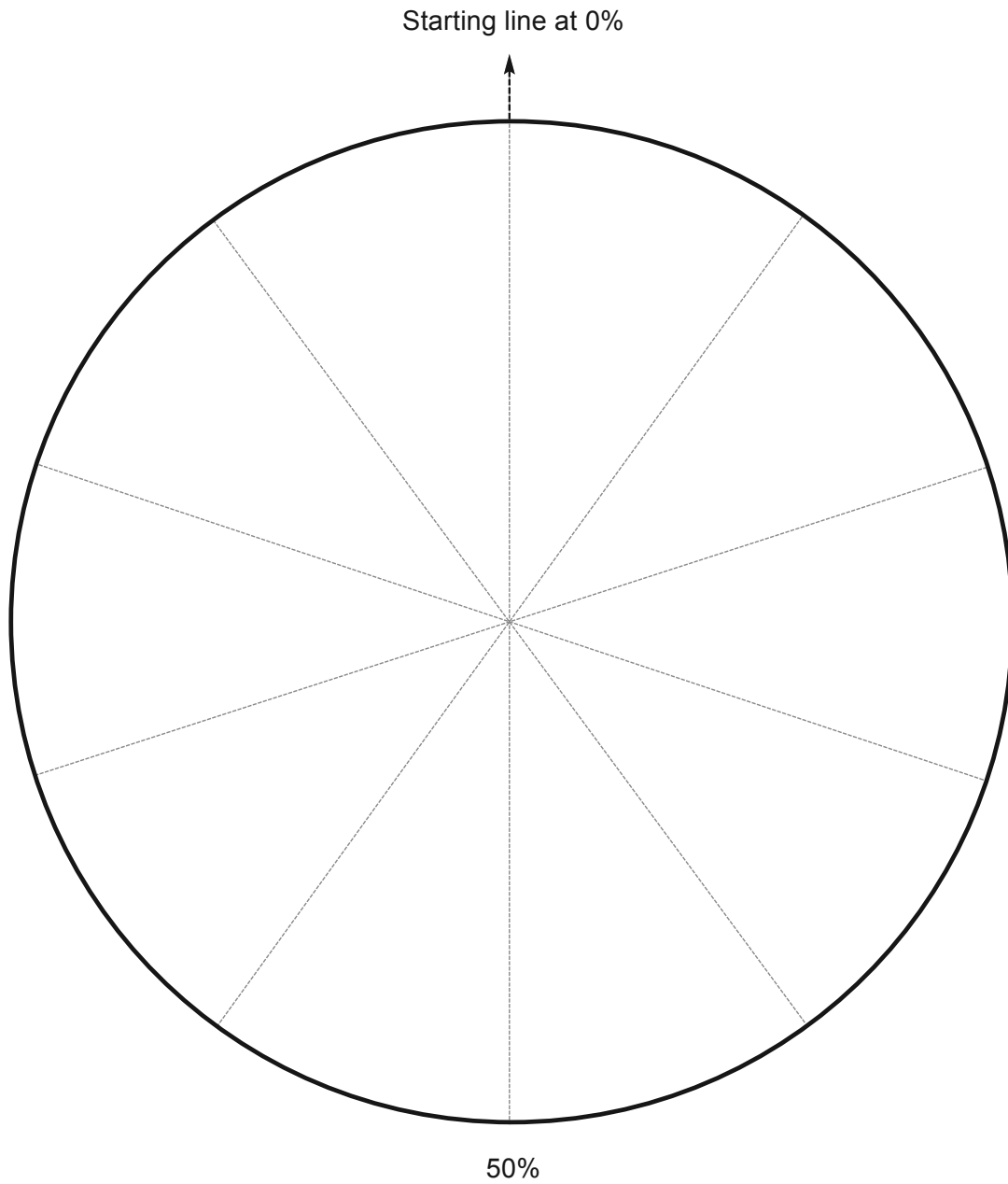
Because:

But most of all, in the whole wide world, please don't make us go to:

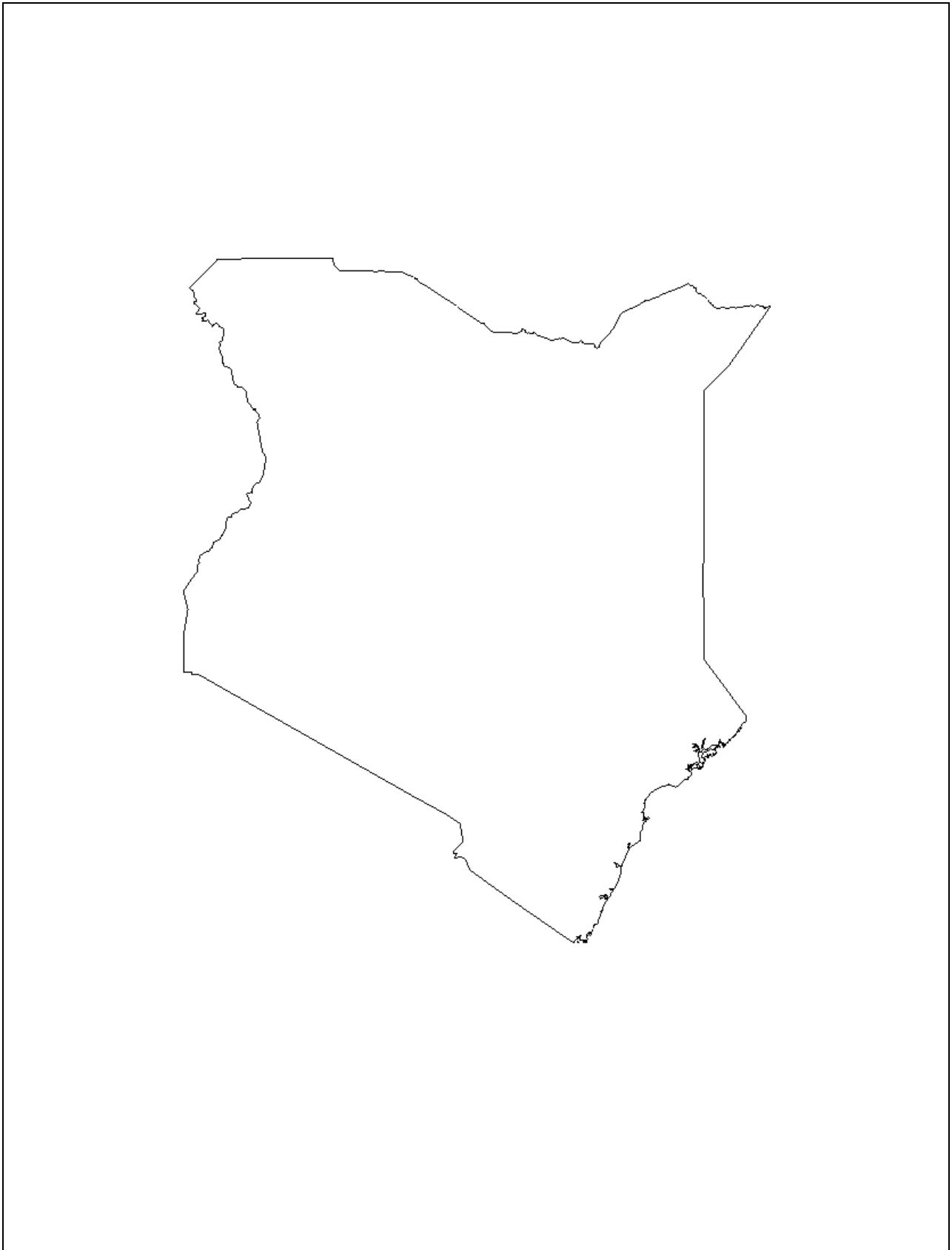
It would be the worst experience of our lives because:



Percentage of visitor arrivals for the world's top 10 tourist destinations



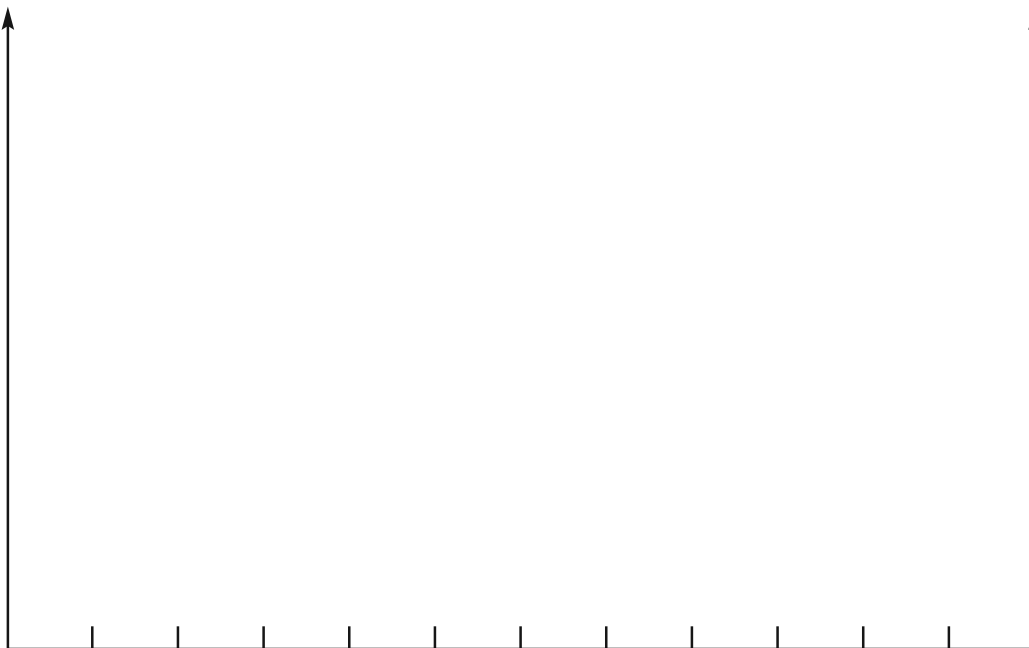
Annotate the map with details of the route of your Kenyan holiday and the places you want to visit.



Nairobi climate graph

Complete the climate graph for Nairobi below.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperature (°C)	19	20	20	19	18	17	16	16	18	19	18	18
Precipitation (mm)	38	64	125	211	158	46	15	23	31	53	109	86

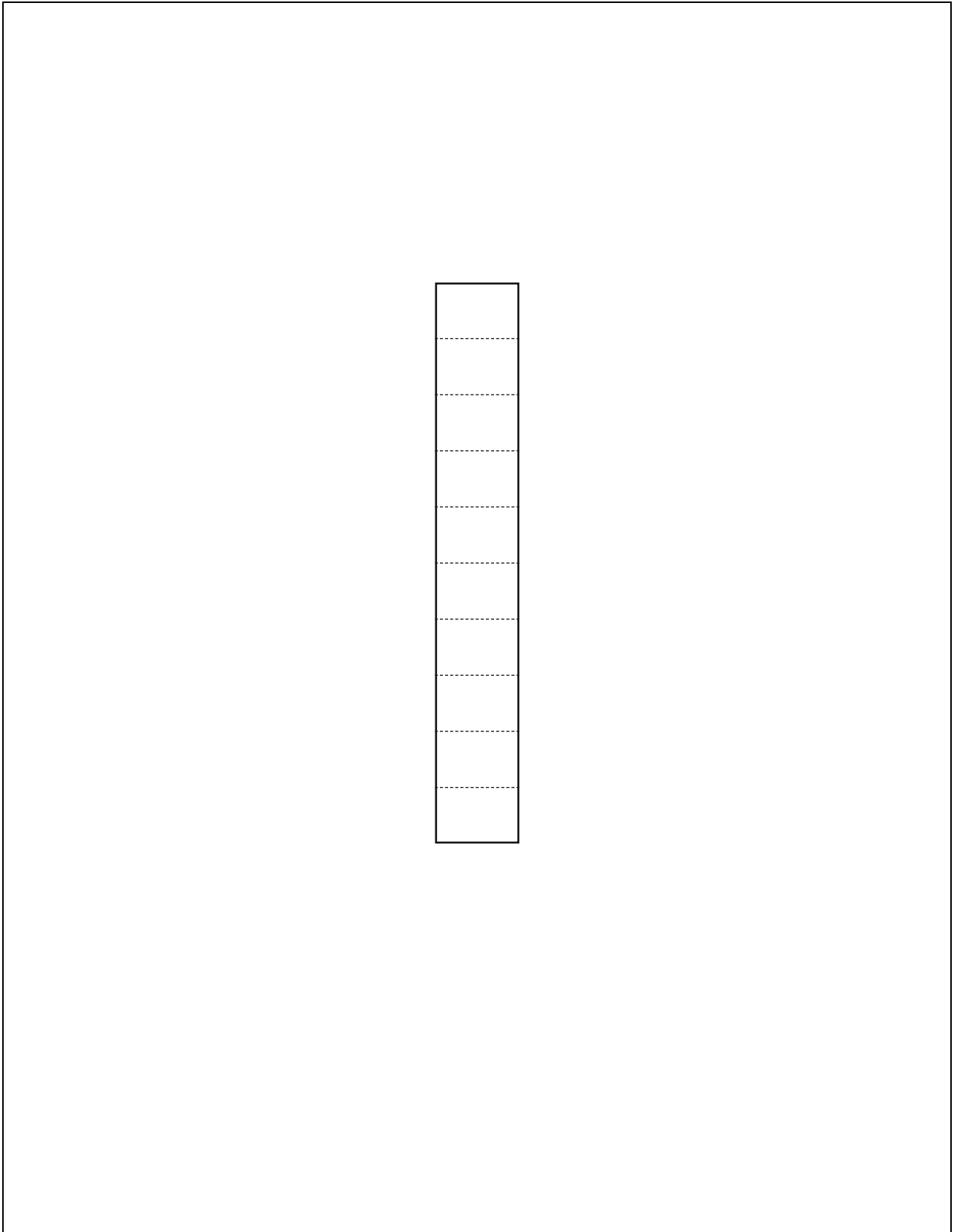


Now write two sentences to describe the climate of Nairobi:

Complete the table below, as instructed in **Now investigate**, activity **1b** and **2a** at the top of p. 159 of the Student Book.

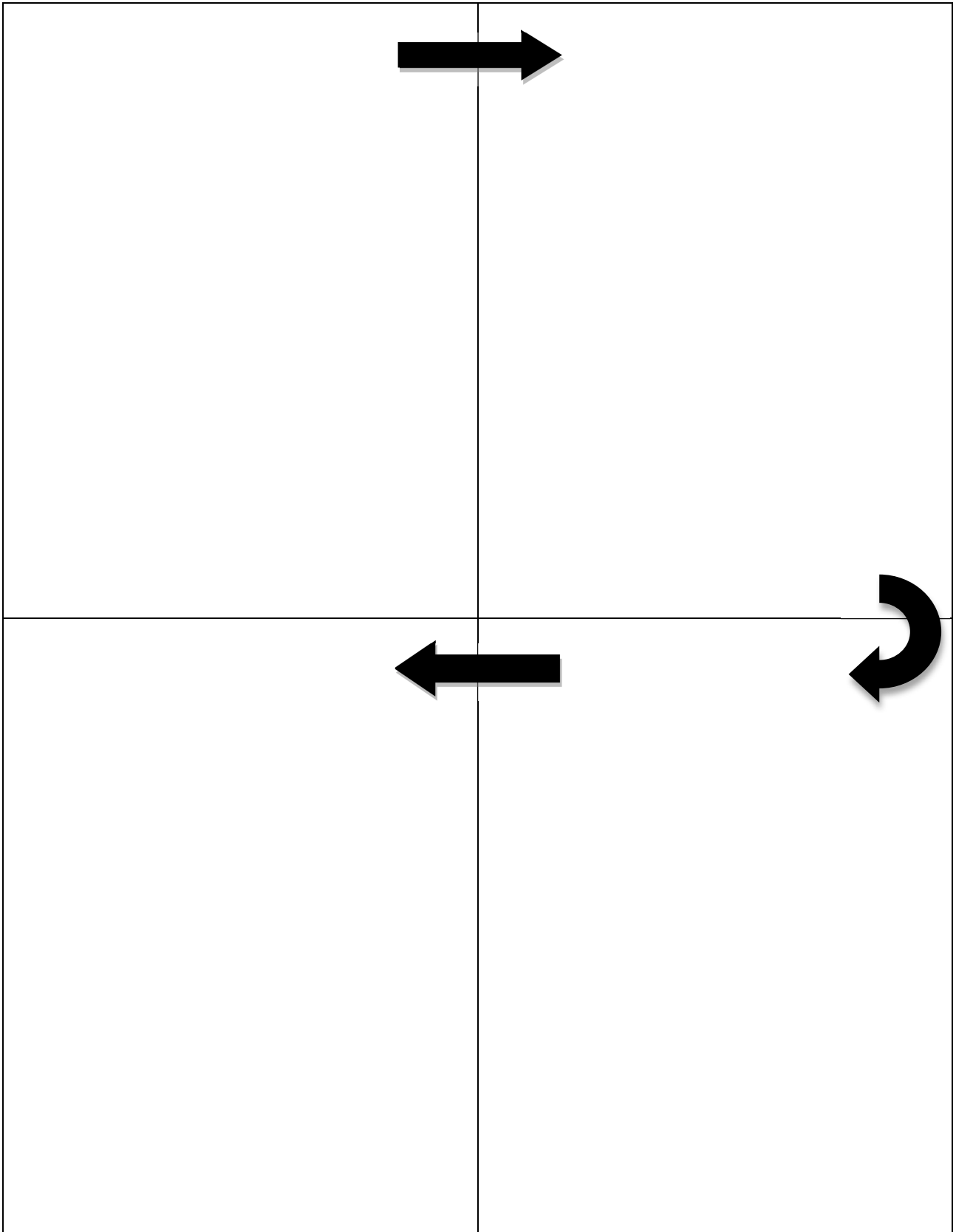
Necessary items	Unnecessary items
From around the world:	From around the world:
From your own life:	From your own life:

Use the template below to draw your divided bar graph. Remember to label it properly.



The formation of fossil fuels

Draw a series of sketches to show how fossil fuels are formed.



Annotate this picture, which shows fuelwood being sold, with information from the Student Book.



Image: Stephen Codrington/CC by SA-2.5

Name of stove:

Where is it used?

Design (sketch your stove in the space below):

Main features:

.....
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.....
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.....

Advantages:

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Disadvantages:

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.....

The advantages and disadvantages of renewable energies

	Advantages	Disadvantages
Geothermal		
Wind		
Running water		
Solar		
Biogas		

Answer the following questions about sources of energy.

1 Name two types of fossil fuel.

.....

2 Approximately what percentage of the world's energy comes from fossil fuels?

.....

3 Where do fossil fuels originally come from?

.....

4 Give two reasons why global energy consumption has increased over the last 100 years.

.....

5 Which country leads the world in coal production?

.....

6 Which country leads the world in the exploitation of oil?

.....

7 What is energy security?

.....

8 Give two problems caused by China's coal mining.

.....

9 How many people around the world use fuelwood for cooking and heating?

.....

10 Name two problems associated with fuelwood use.

.....

11 What is the name given to energy sources that appear not to run out?

.....

12 What type of energy comes from heated rocks and magma under the ground?

.....

13 Name three other types of renewable energy.

.....

Household electrical appliance audit

Fill in the information on this sheet after completing your household audit.

Remember, when somebody notices that an appliance has been turned off, you can always go and turn off another appliance and see how long it takes for it to be noticed.

Name of appliance	Location	When turned off	When noticed	Comments

Location 1:
Latitude and longitude:
Advantages:
Disadvantages:

Location 2:
Latitude and longitude:
Advantages:
Disadvantages:

Location 3:
Latitude and longitude:
Advantages:
Disadvantages:

The advantages and disadvantages of hydro-electric power

Annotate the photo below with the advantages and disadvantages of large-scale HEP stations – advantages above the picture and disadvantages below it.

Advantages



Disadvantages

Image: Ontario Power Generation/CC by 2.0

Where is it used?

Design (sketch the Pico Hydro system in the space below):

Main features:

.....
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Advantages:

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Disadvantages:

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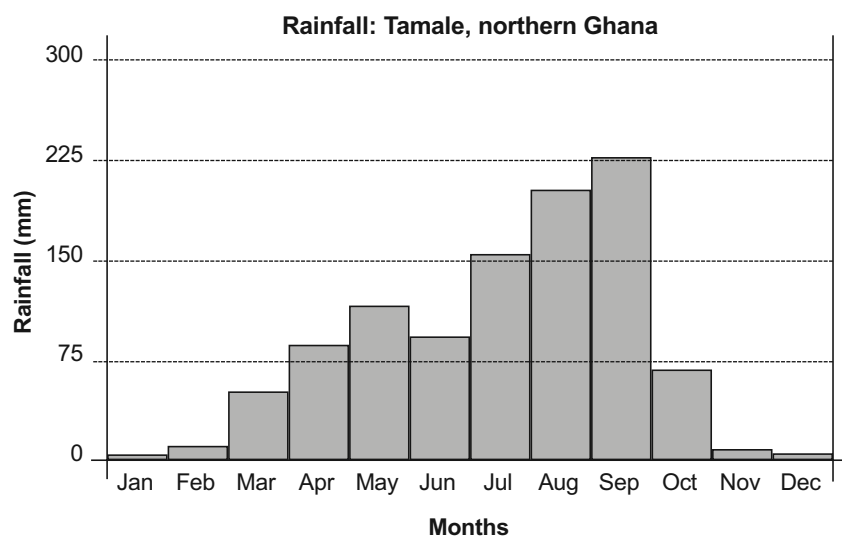
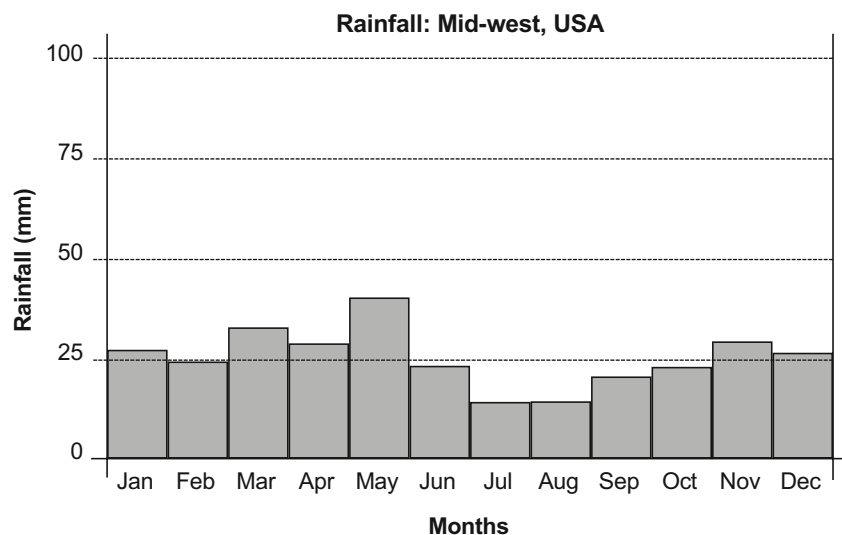
Does rainfall affect water supply?

Below are two rainfall graphs – one for the American mid-west, Mary-Lou’s home area, and one for northern Ghana, Yawo’s home. Answer the following questions:

- 1 Write a description of the rainfall pattern over the year for each location.
- 2 Calculate the total rainfall for each location.
- 3 Compare the totals. Then compare the way in which each area has its rainfall distributed throughout the year with the water demands of its population.

Note that northern Ghana is a rural region, with most people living in scattered villages and small towns. Population density here is relatively low. The American mid-west includes large cities like Phoenix, Arizona which, with its surrounding suburbs, has a population over 4 million. Population density is relatively high. Remember that the higher standard of living in the USA means that people want more water for home and leisure activities. Agriculture and industry are also on a much larger scale than in northern Ghana.

- 4 Think about what other factors affect the amount of water available for human use.



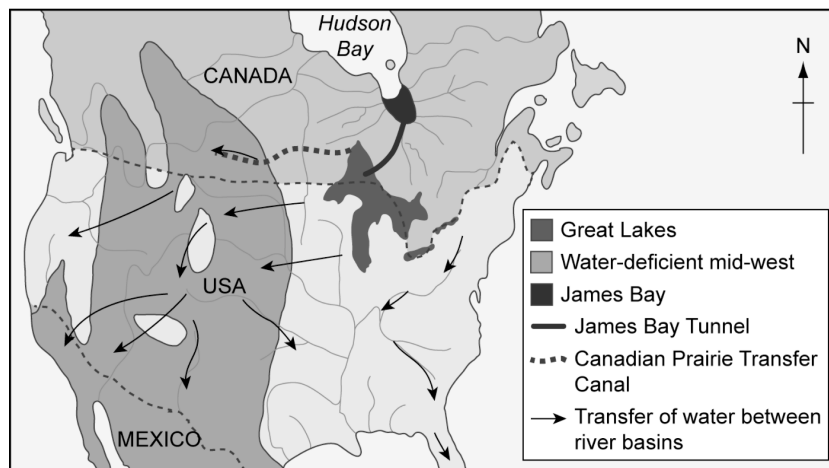
Water transfer schemes

California already has a number of water transfer schemes aiming to improve the water resources available for its huge demand. The Los Angeles example quoted in the Student Book, in which water is moved over 300km, is extremely expensive – but wealthier MEDCs have the money to operate such schemes, should they wish.

One scheme involves damming the southern half of James Bay (the southern extension of Hudson Bay in Canada), and pumping this water into the Great Lakes through the James Bay Tunnel. From here it could be distributed to the drier Prairie Provinces in western Canada and to large areas of the USA, by transferring it between the major river basins.

Study the map below.

- 1 Describe the water movements proposed.
- 2 Research the climate around Hudson Bay, paying particular attention to precipitation levels.
- 3 Comment on the likely benefits and problems of such a large-scale scheme. (Write at least two paragraphs.)



How challenging is your natural environment?

Explore the landscape and environment around your home using a variety of resources. Some ideas are listed below:

- Present-day maps – these will show how people use your landscape today.
- Historical maps – what was your area like in the past? Go back as early as possible to get an idea of the landscape's appearance before people exploited it.
- Maps showing geology, natural vegetation and relief will also help you appreciate your landscape before people lived in it and used it.
- Climate graphs, including precipitation and temperature.
- Other climatic data such as hours of sunshine, length of growing season, wind speed.

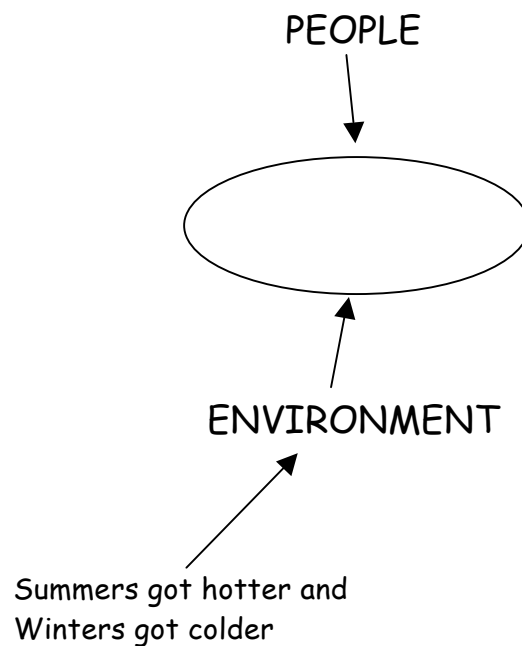
Now answer these questions:

- 1 Write a description of your area's natural landscape as it appeared before people used it.
- 2 Make two lists:
 - (a) The resources and attractions of your area – what would make people in the past want to live there?
 - (b) The difficulties the environment of your area creates for people trying to make a living there.
- 3 Answer the question at the top of this Worksheet: How challenging is your natural environment? To do this, use a rating system: 0 means an area is uninhabitable and 10 is an area that is perfect for human habitation. Decide how you would rate your home environment and explain your reasons.
Compare your ideas with those of other members of your class.
- 4 Now compare your home area with some of the difficult environments you have already studied in the Student Book, for example tropical rainforests or hot deserts (Topic 2.5).
- 5 If you had a choice, which of these challenging environments would you prefer to live in?
 - (a) Tropical rainforest
 - (b) Hot desert
 - (c) Mountains
 - (d) Polar region

Give reasons for your answer.

(Note: **Worksheet 3.50** deals with polar regions, so it might be more useful to answer question **5** after doing the research for the next Worksheet.)

In the centre of the spider diagram below write your own word to reflect the Aral Sea environmental crisis. Think about the factors that affected the PEOPLE (for example their livelihood) and the ENVIRONMENT (for example pollution) in the Aral Sea region. Draw as many 'legs' for the spider as you need to in order to show all the factors involved. Your chosen factors should be pointing to either 'People' or 'Environment'. One has been done for you.



Creating a new case study: tourism in a challenging environment – the Arctic

Create a further case study of a challenging environment by researching on the internet and also in your school library, if you wish.

Begin with this website: <http://discoveringthearctic.org.uk>

It is easy to negotiate and there is plenty of information – personal accounts of life in the Arctic, photos, short films and interactive material.

Choose **one** of the two activities set out below:

- 1 Produce a travel brochure to attract people to go on holiday to a location with a challenging environment. Adventure travel is a growing industry: who do you think would be attracted by a hazardous trip like this? Think about their age, type of job, marital status.

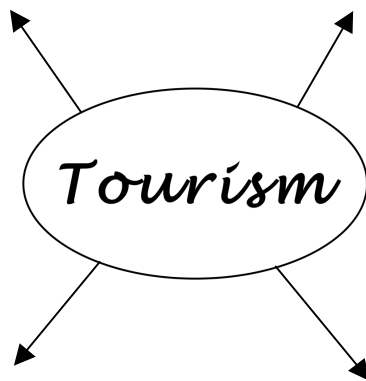
For your travel brochure you could choose Greenland, or elsewhere in the Arctic, based on the case study you have just produced. It is possible to go on holiday to see Antarctica, staying on a cruise ship and going ashore from time to time. There are even school trips there! Look up: www.discover-the-world.co.uk

Alternatively, you could choose somewhere else such as the Aral Sea with its very saline water.

- 2 Produce a set of holiday photos from a destination suggested in question 1 above. As a class, display these so that they can be judged competitively.

Environmental damage caused by tourism

Add your thoughts to the spider diagram below. Add more arrows and categories if you need to.



Complete the circles with details of the effects of your lifestyle on the environment.

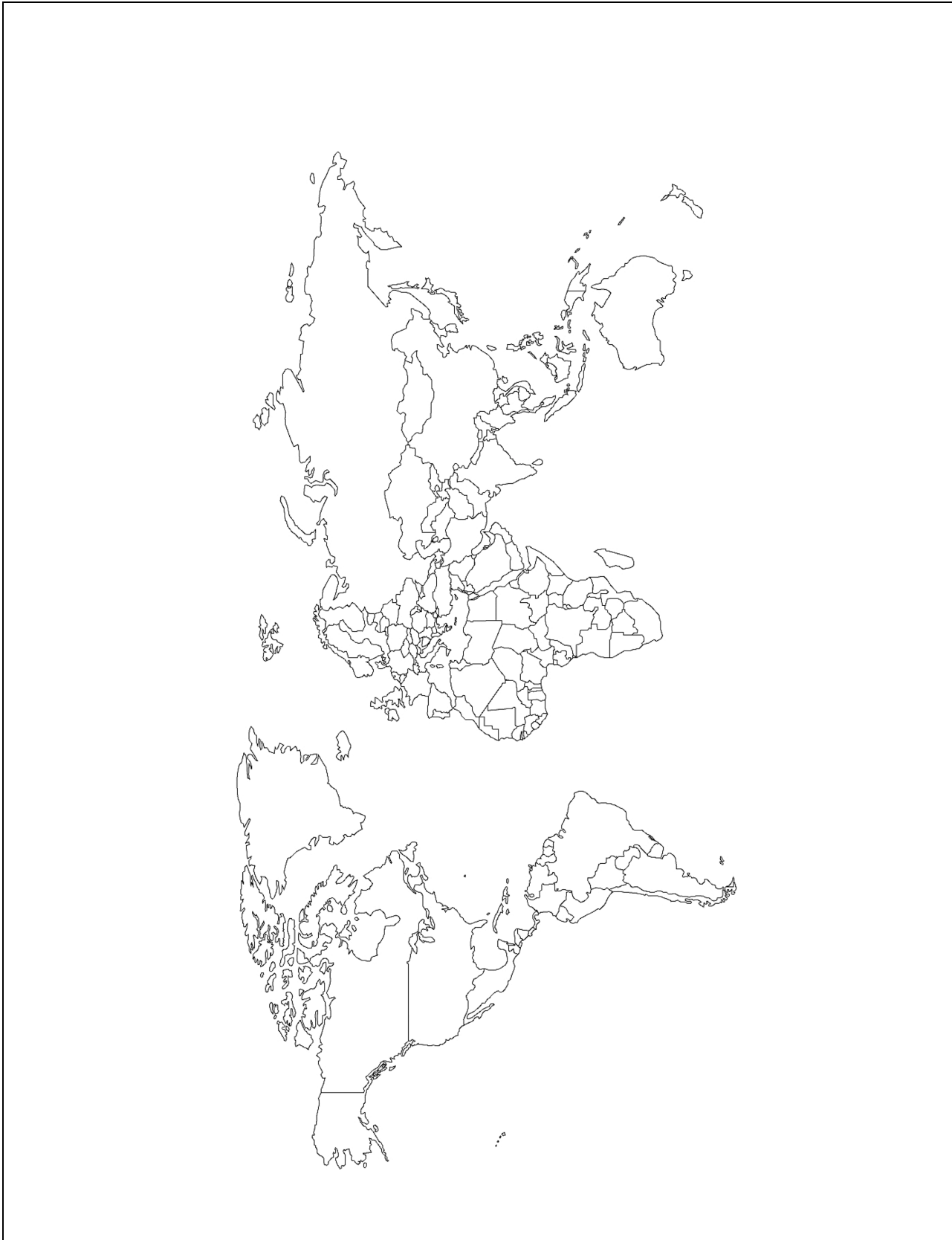
Air

Water

Earth

Areas threatened by sea-level rise from climate change

Using an atlas, add areas at risk, and their names, to the map below.



Describe the decrease in forest cover in Borneo over the last 50 years:

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Show the deforestation on a sketch map of the country below:

Causes of deforestation:

Cause 1:

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Cause 2:

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Cause 3:

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Environmental effects of deforestation:

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Does deforestation have any benefits for Borneo?

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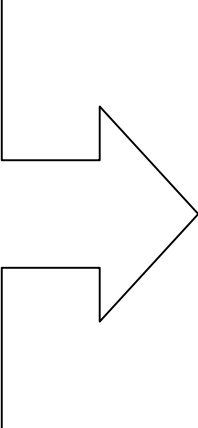
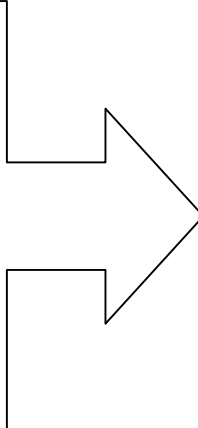
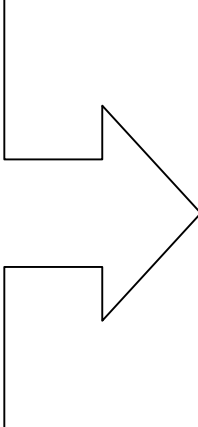
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Write down your problems and solutions to sustainable living in the spaces below.

<p>Problem</p>		<p>Solution</p>
<p>Problem</p>		<p>Solution</p>
<p>Problem</p>		<p>Solution</p>

Reduce, re-use, recycle

Have a look at activity 1 in the **Now investigate** section on p. 191 of the Student Book and then fill in the table below.

Activity	Reduce	Re-use	Recycle

Add the outline of the Great Barrier Reef to the map. Around it add details about its surroundings.



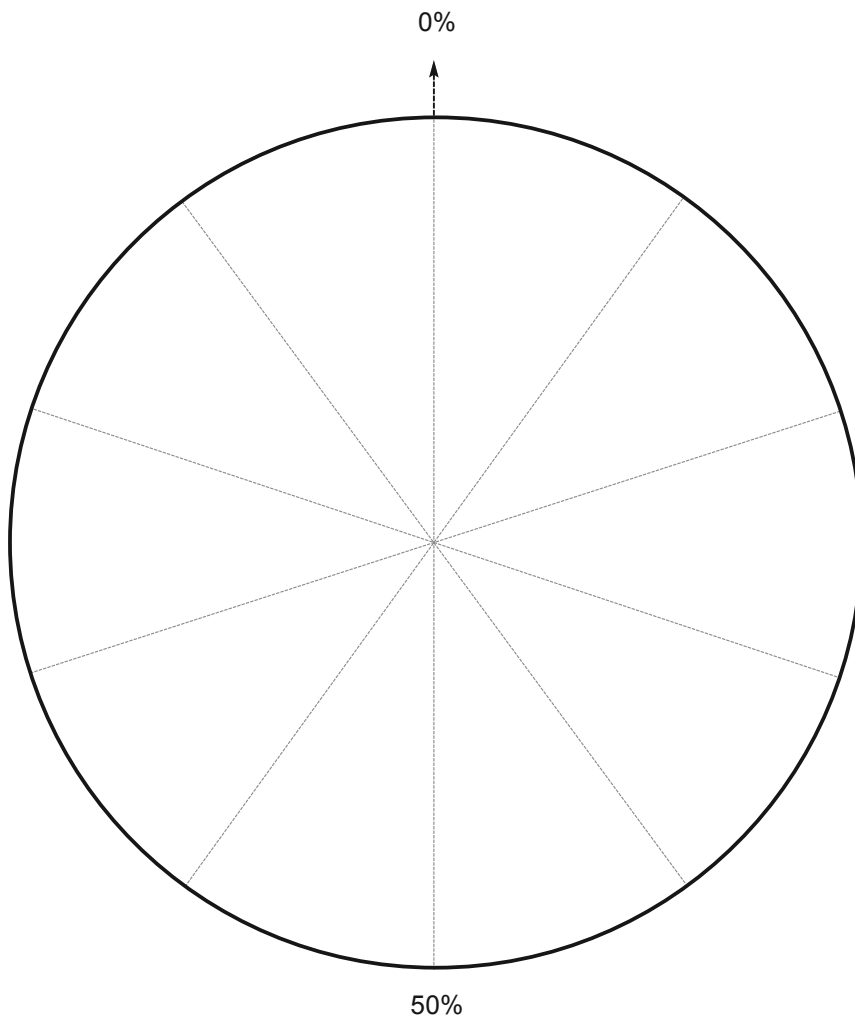
Visitors to the Great Barrier Reef

Complete the table and use the data to complete the pie chart below.

Then collect some graph paper and draw a bar graph showing the information.

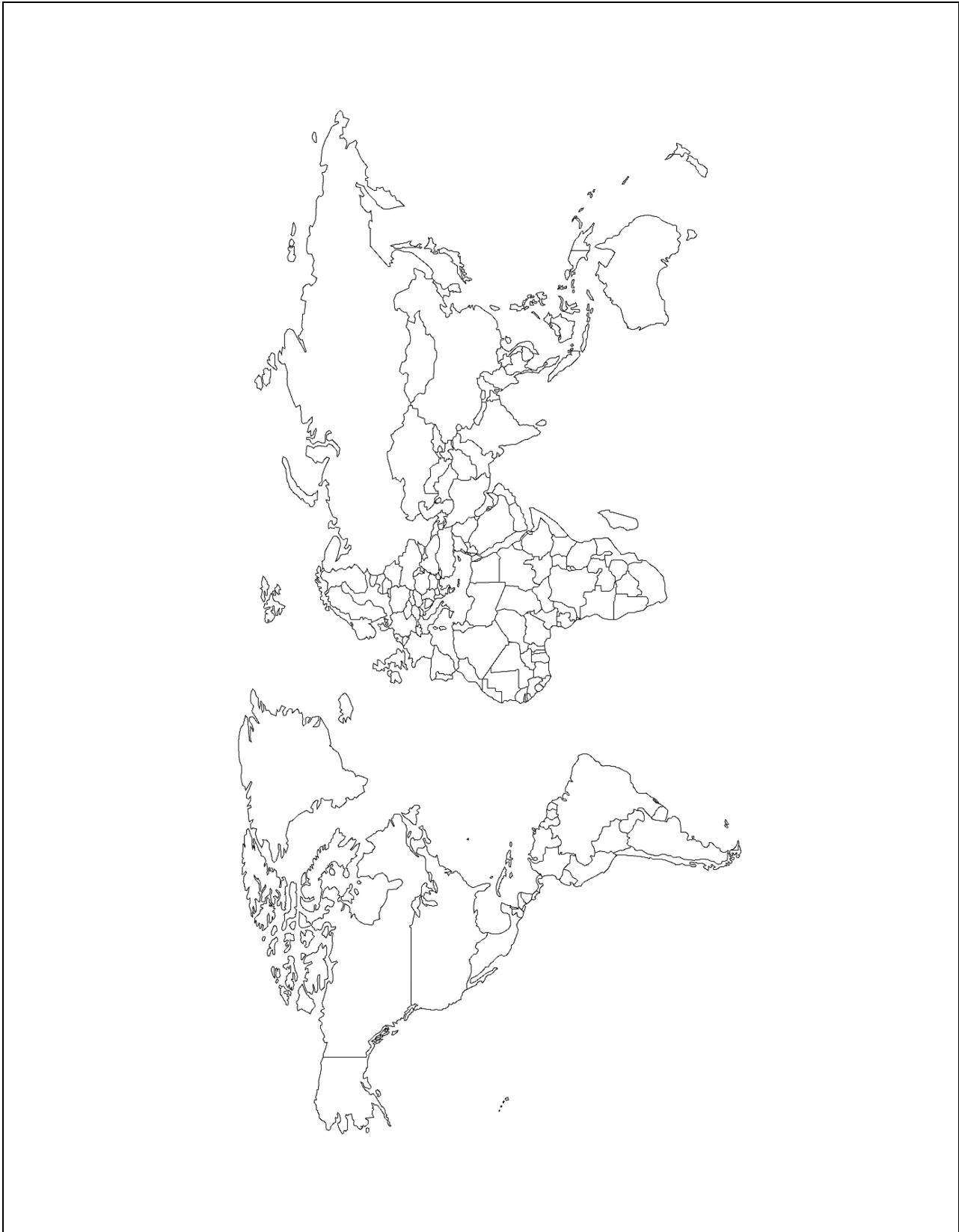
Country	Percentage of total visitors	Number of visitors out of a total of 200 000
UK	30	60 000
Germany	10	
Other European countries	21	
Japan	15	
USA	11	
Other countries	13	

Pie chart showing visitor numbers to the Great Barrier Reef



National Parks and protected areas around the world

Name and mark on the map below the location of the National Parks mentioned on p. 194 of the Student Book. Then add five more examples.



<p>Location:</p> <p>Visitor numbers:</p> <p>Aims of the National Park:</p> <p><i>Aim 1:</i></p> <p><i>Aim 2:</i></p> <p><i>Aim 3:</i></p> <p>Attractions of the National Park:</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>	
<p>Problems in the National Park:</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>	<p>Solutions:</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>