



Primary Geography

Natural resources

Name:

Class:

Knowledge organiser

Vocabulary	
Clean energy	Energy processed in a way that does not cause pollution or release much carbon dioxide
Climate	General or average weather conditions over a very long period of time
Exports	Products that a country produces and sells to other countries
Fossil fuels	Coal, oil and gas: fuels that are formed from the remains of plants and animals changed by millions of years of heat and pressure
Mining	Digging up natural resources so they can be used
Natural resources	Materials used by humans that are formed naturally
Non-renewable	Able to run out; not able to be reproduced effectively
Pollution	Harmful substances released into the environment
Renewable	Not able to run out; always available
Reserves	Quantities of a substance not yet used

Ten important natural resources

Natural resource	What is it?	What is it usually used for?
Air	Mixture of gases	Breathing and photosynthesis
Coal	Fossil fuel: solid	Energy
Cobalt	Metal	Engines
Gold	Metal	Jewellery and electronics
Natural gas (mainly methane)	Fossil fuel: gas	Energy
Oil	Fossil fuel: liquid	Energy
Soil	Biomass	Agriculture
Uranium	Metal	Nuclear energy
Water	Liquid	Sustaining life on the planet
Wood	Biomass	Building homes and burning for fuel



Coal



Oil



Gas



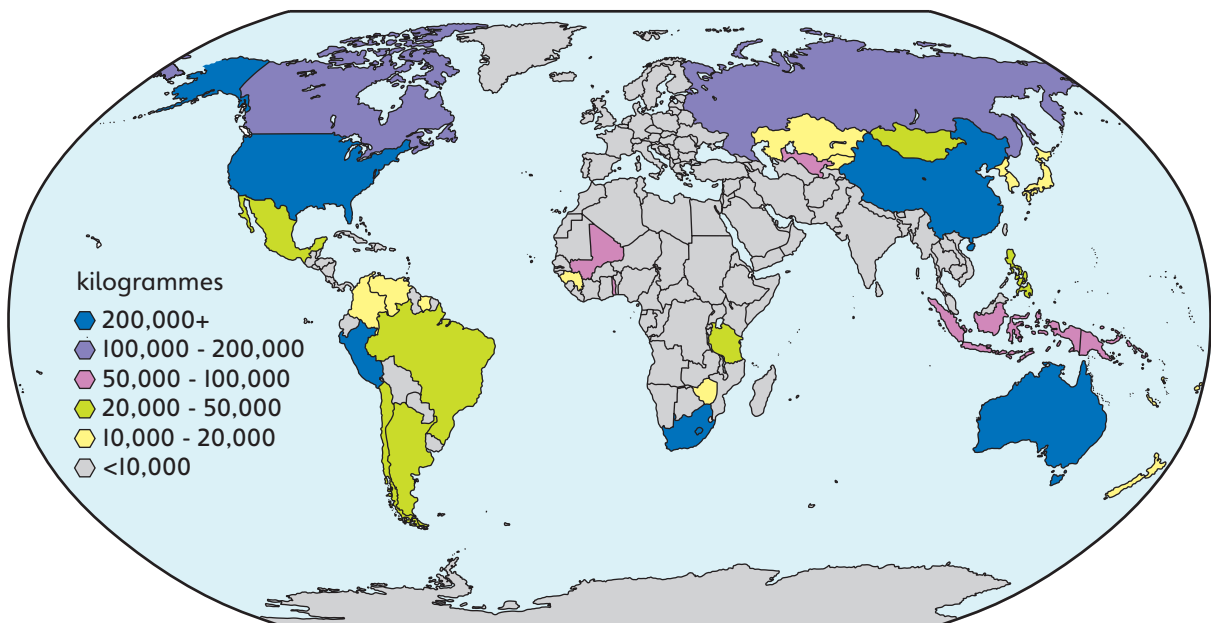
Wood



Water

Distribution of natural resources

The world's natural resources are not evenly spread out or used. For example, the map shows where in the world gold is mined and produced.



4 Learning review

Lesson	Lesson question	You will learn...	Learning review
1	What are the world's natural resources?	<ul style="list-style-type: none"> • What natural resources are • What makes natural resources valuable • Which countries have a lot of natural resources 	<hr/> <hr/> <hr/>
2	How has the use of natural resources changed?	<ul style="list-style-type: none"> • How the world's population has changed over time • How the use of natural resources has changed over time • Why the use of natural resources has increased 	<hr/> <hr/> <hr/>
3	How can using natural resources cause problems?	<ul style="list-style-type: none"> • How burning fossil fuels leads to climate change • How burning fossil fuels causes pollution • Why mining can be dangerous for miners 	<hr/> <hr/> <hr/>
4	What natural resources does Chile have?	<ul style="list-style-type: none"> • Where Chile is located and what its geography is • What Chile's natural resources are • Why copper mining is important for Chile 	<hr/> <hr/> <hr/>
5	What natural resources does the UK have?	<ul style="list-style-type: none"> • What the UK's natural resources are • Why coal was important for the UK • Why wind power is important to the UK 	<hr/> <hr/> <hr/>
6	Assessment: 'Every country should stop mining natural resources.' How much do you agree with this statement?		<hr/> <hr/> <hr/>

Lesson 1

What are the world's natural resources?

What are natural resources?



1. What are **natural resources**? Use your Knowledge organiser to find the definition. Write your answer.





Natural resources are _____



2. Name three natural resources that you use every day. Write your answers.



3. Name the natural resource shown in each picture and give a reason why each one is important. Write your answers. (We've done one for you to get you started.)

	<p>This natural resource is: <u>coal</u></p> <p>It is important because: <u>we use it to make heat and light.</u></p>
	<p>This natural resource is: _____</p> <p>It is important because: _____</p>
	<p>This natural resource is: _____</p> <p>It is important because: _____</p>
	<p>This natural resource is: _____</p> <p>It is important because: _____</p>

Renewable or non-renewable?

Some natural resources, such as air and water, will always be available: they will never run out. These are called **renewable** resources. Wood is a renewable resource too, as it can be reproduced within one person's lifetime.

Other natural resources are **non-renewable**, which means there is only a limited quantity of them. They will run out if people keep using them. Coal, oil and gold are all non-renewable resources.

What makes natural resources valuable?

Some natural resources are only found in certain places. For example, diamonds can be mined in the Democratic Republic of Congo but not in the UK, because the natural processes that create diamonds do not occur everywhere. This is the main reason why diamonds cost a lot of money.

Other types of natural resources, such as water, are all around us. This means water does not cost a lot. Water is very valuable, though: without water, there would be no life on Earth.



Diamonds



Water



4. Look at this list of natural resources. Order them by how valuable to human life you think they are (not how much they cost), with 1 being the most valuable and 5 being the least valuable.

Natural resource	How valuable: 1–5
Water	
Diamond	
Iron	
Oil	
Wood	

Countries rich in natural resources

These three countries have lots of natural resources:

Australia

Australia supplies around 46% of the world's uranium, and about 14% of the world's gold. It has the largest gold **reserves** in the world. It also has large reserves of coal, timber (wood), iron, copper and aluminium.



Democratic Republic of the Congo (DRC)

The Democratic Republic of the Congo (DRC) has a very large **mining** industry. It has the biggest reserves in the world of coltan (a metal used in electronic devices) and large reserves of diamond, cobalt, gold, tin and copper.



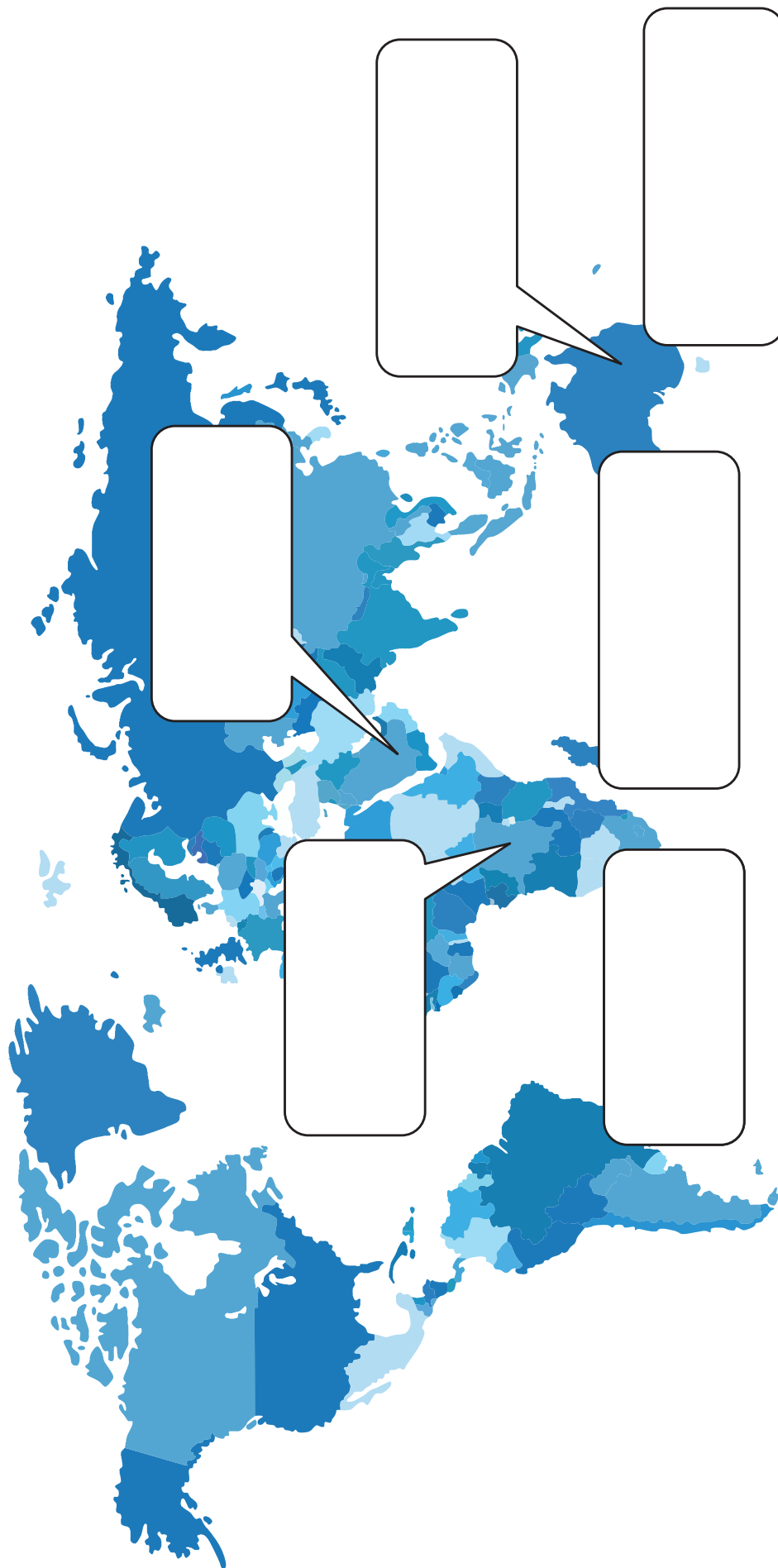
Saudi Arabia

Saudi Arabia has the second biggest oil reserves in the world. It sells more oil to other countries than any other country in the world.





5. a. Find and label the three countries above on this map.
- b. Add more labels to the three countries to show what natural resources they have.



Lesson 2

How has the use of natural resources changed?



Quiz

1. What is a natural resource? Fill in the blank to complete this sentence, using one of the words below.

all not sometimes previously

Natural resources are resources that have _____ been created by humans.

2. Read the statements below. Tick 'True' or 'False' for each one.

a. Australia has the world's largest gold reserves. True ☐ False ☐

b. The DRC has the biggest coltan reserves in the world. True ☐ False ☐

c. The UK has the second biggest oil reserves in the world. True ☐ False ☐

3. The DRC is a country in Africa. What does 'DRC' stand for? Tick the correct answer.

a. Diamond Reserves and Coltan ☐

b. Democratic Republic of the Congo ☐

c. Democratic Reserves of Chad ☐

4. Which of the following natural resources can be found in every country? Tick the correct answer.

a. water ☐ b. diamonds ☐

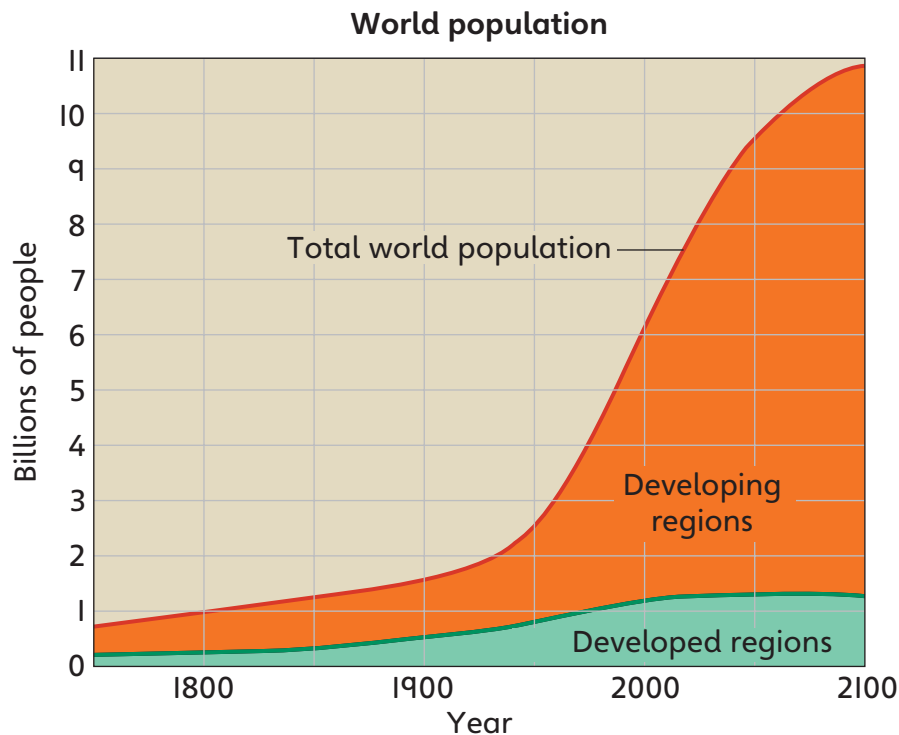
c. oil ☐ d. gold ☐

5. Which one of these natural resources is vital for life? Tick the correct answer.

a. gold ☐ b. diamonds ☐

c. oil ☐ d. water ☐

How has the world's population changed?



- I. Using the information in the graph, cross out the incorrect words to complete these sentences.
 - a. The world's population of humans is **increasing** / **decreasing**.
 - b. In the year 1800, the world's total population was **1 million** / **1 billion**.
 - c. Between 1800 and 2000, the world's population grew by **5 billion** / **6 billion**.
 - d. In the future, most growth will come from **developing regions** / **developed regions**.



2. What is meant by the words 'developing regions'? Tick the correct answer.

Richer countries ☐

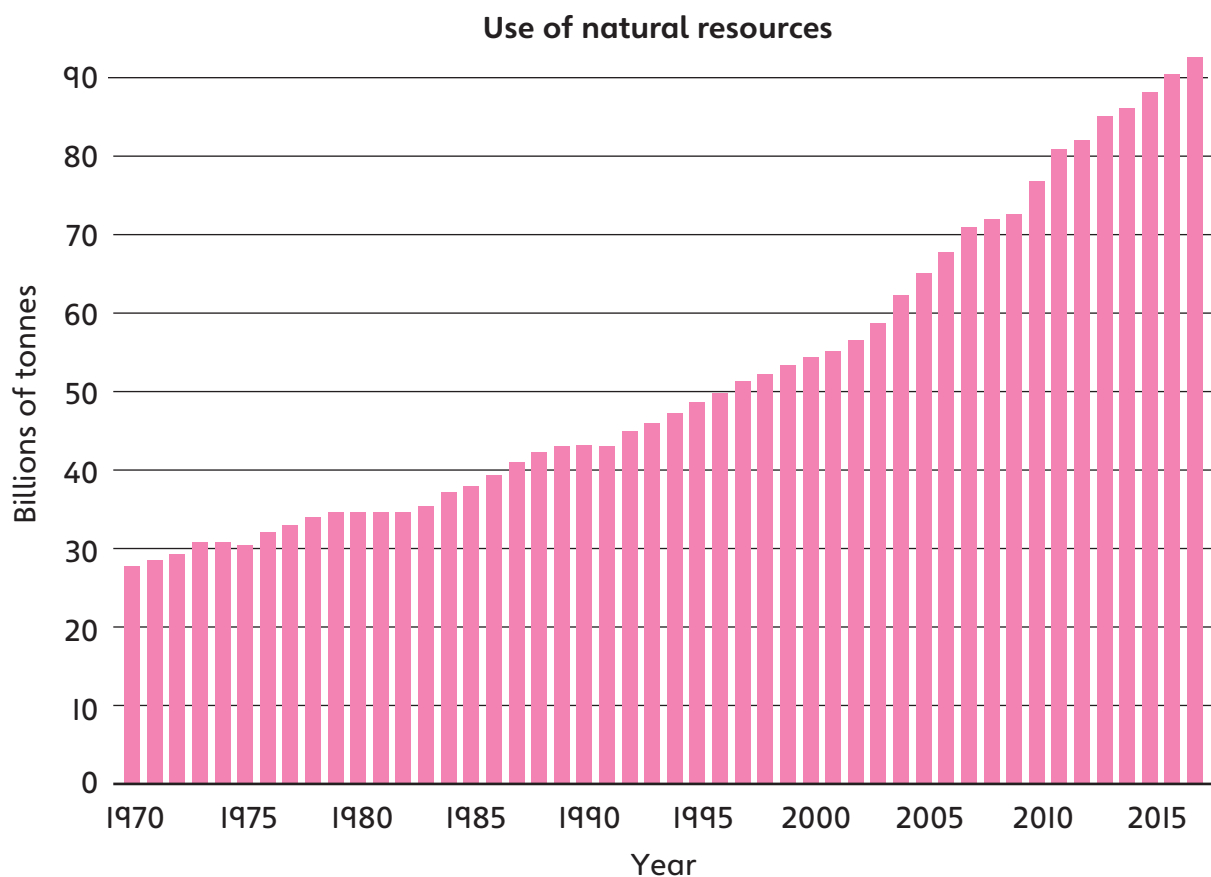
Poorer countries ☐

How has the use of natural resources changed?

Over the last 50 years, the quantity of natural resources being used has increased a lot. One reason is that the world's population is growing, but that is not the whole story.

People in wealthy countries each use around ten times more natural resources than people in poorer countries. As countries get wealthier, their people have more spendable income. They buy more things, and then throw them away and replace them. Producing more and more things for people to buy uses a lot of resources.

This graph shows the quantity of natural resources being used globally between 1970 and 2017.



3. Using the information in the graph, cross out the incorrect words to complete these sentences.

- The quantity of natural resources being used has **increased** / **decreased** since 1970.
- In 1970, almost **30 billion** / **85 billion** tonnes of natural resources were used.
- Between 1970 and 2017, the quantity of natural resources used increased by around **65 billion** / **35 billion** tonnes.

4. Complete these two sentences to explain why the world is using more natural resources than ever before. Write your answers.

- One reason why the world is using more natural resources than ever before is that the world's population is growing. This increases our use of natural resources because...

- Another reason is that people are buying more things and then throwing them away. This increases our use of natural resources because...



Lesson 3

How can using natural resources cause problems?



Quiz

1. Cross out the incorrect words to complete the sentence.
People are now using **more** / **fewer** natural resources than they used to.
2. Read the statements below. Tick 'True' or 'False' for each one.
 - a. The world's population is growing. True ☐ False ☐
 - b. The world's population is now between 7 and 8 billion people. True ☐ False ☐
 - c. Population is growing faster in developed regions than in developing regions. True ☐ False ☐
3. By how much did global population increase between 1900 and 2000? Tick the correct answer.
 - a. 2.5 billion ☐
 - b. 3.5 billion ☐
 - c. 4.5 billion ☐
 - d. 5.5 billion ☐
4. People in wealthy countries use more natural resources than people in poorer countries. How many times more? Tick the correct answer.
 - a. 2 times more ☐
 - b. 5 times more ☐
 - c. 10 times more ☐
 - d. 20 times more ☐
5. Match these sentence starts to the correct sentence ends. Draw lines between them.

a. As the world's population grows bigger, we use more natural resources because ...

b. As countries get wealthier, we use more natural resources because ...

c. When people throw things away, we use more natural resources because ...

people there are buying more things.

a lot more people use a lot more resources.

new things are made to replace them.

Fossil fuels and climate change

The natural resources of coal, oil and natural gas are called **fossil fuels**. They contain a lot of carbon and, when they are burnt, they release carbon dioxide gas.

When carbon dioxide gas goes into the atmosphere, it acts like a blanket for Earth. It makes the atmosphere warmer. This is a problem because it changes every **climate** around the world. In some countries, for example, there will be less rain. This will cause big problems for people as farmers need rain to grow food.

Fossil fuels and pollution

Burning **fossil fuels** causes air **pollution** because it releases little particles into the air. Sometimes, this can be seen as smoke. The particles can harm people and animals when they are breathed in.

Digging up natural resources, including fossil fuels, also releases chemicals. These chemicals often get into water, making some of our most valuable natural resource poisonous.



A power station that uses coal to generate electricity



1. Some power stations use coal for energy. What problems can this cause? Fill in the blanks to complete these sentences, using the words below.

blanket breathe climates dioxide fuel

- Coal is a fossil _____ and contains a lot of carbon.
- When coal is burnt, it releases carbon _____ gas.
- When this gas gets into the atmosphere, it acts like a _____.
- A warmer atmosphere changes _____ around the world.
- Burning coal also causes air pollution, which can harm us when we _____.

Mining accidents

Mining natural resources means digging them up from underground. The people who do this job are called miners. Mining can be a dangerous job.

Around the world, hundreds of thousands of people die each year as a result of accidents and illnesses related to mining. Passageways underground can collapse, and illnesses can develop when miners breathe in lots of toxic dust or are exposed to poisonous chemicals.



A mine passageway underground



A sulphur mine

In August 2010, 33 miners became trapped in the San José gold and copper mine in northern Chile. The miners were trapped 624 metres underground for two months. They survived only because people could pass them food and water through a small gap.

The miners were rescued in October 2010. In the picture, you can see the special machine that lifted them out.



A miner being rescued in Chile in 2010



2. Explain three ways in which mining can be dangerous for miners. Write your answers.

Unit progress check in

1. Which country has the largest gold reserves in the world? Write your answer.

2. Match these sentence starts to the correct sentence ends. Draw lines between them.

a. Since 1800, the world's population has grown by ...	because people buy more things.
b. Use of natural resources is increasing ...	over 10 billion tonnes.
c. Between 2010 and 2015, use of natural resources increased by...	more than five billion.

3. Read the statements below. Tick 'True' or 'False' for each one.

- a. Natural resources are resources made by humans. True ☐ False ☐
- b. Burning fossil fuels can cause air pollution. True ☐ False ☐
- c. Diamonds can be dug up from underground. True ☐ False ☐

4. Which one of these is a fossil fuel? Tick the correct answer.

- a. water ☐ b. coal ☐
- c. iron ☐ d. copper ☐

5. Fill in the blanks to complete these sentences, using the words below.

Chile copper two miners

In August 2010, 33 _____ became trapped in the San José gold and _____ mine, in northern _____. The miners were trapped 624 metres underground for _____ months. They were rescued in October 2010.

6. Which of these is a reason why mining underground can be dangerous? Tick the correct answer.

- a. climate change ☐
- b. water being polluted ☐
- c. passages collapsing ☐
- d. carbon dioxide gas ☐

Lesson 4

What natural resources does Chile have?

Quiz

1. Match the words to their correct meanings. Draw lines between them.

a. Natural resources
b. Mining
c. Miner
d. Pollution
e. Copper

Digging up natural resources so they can be used
Harmful substances released into the environment
Materials used by humans that are formed naturally
A type of metal
Person who works in a mine

2. Read the statements below. Tick 'True' or 'False' for each one.

- a. Burning fossil fuels takes carbon dioxide gas out of the atmosphere. True ☐ False ☐
- b. More carbon dioxide in the atmosphere means the atmosphere gets warmer. True ☐ False ☐
- c. Mining natural resources underground can be dangerous work. True ☐ False ☐

3. Which of these natural resources is mined? Tick the correct answer.

- a. wood ☐
- b. copper ☐
- c. fish ☐

4. In August 2010, miners were trapped underground for two months. In which country did this happen? Tick the correct answer.

- a. The USA ☐
- b. Chile ☐
- c. Russia ☐

Chile's geography

Chile's geography is very unusual. The country is 4,270 kilometres long from north to south, but an average of only 177 kilometres wide. It has a very long coastline, of around 6,400 kilometres.

In the north, there is the Atacama Desert. It is the driest desert in the world. It almost never rains there. In the far south, though, there are glaciers.

Chile is separated from Argentina by the Andes Mountains, which are a very long mountain chain with many volcanoes.



The continent of South America



I. Fill in the blanks to complete these sentences.

a. Chile is a country in the continent of

b. Chile's shape is

c. Chile shares a border with three countries. They are

d. The ocean next to Chile is called the

Chile's natural resources

Chile has a lot of natural resources because of its unusual geography. These include very valuable metals such as copper, silver, gold and iron.

Chile's climate means that its soil is able to grow lots of fruit and vegetables, such as grapes, cherries, tomatoes, avocados and olives. In the south, there is good soil for grass, and there are lots of sheep and cows there.

Trees grow well in Chile so wood is another of its valuable natural resources. Chile also has very large natural gas reserves in the south.



2. Name ten of Chile's natural resources. Write your answers.

<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>

Copper mining in Chile

Chile is the world's biggest producer of copper. Copper is a very valuable natural resource because it is excellent at conducting electricity. This means it is used in electrical wires and in many electronic devices.

Chile's largest copper mine is called Escondida, in the Atacama Desert. It is an open-pit mine, and one of the deepest in the world. An open-pit mine is not an underground mine; it is an enormous pit dug into Earth's surface.

Copper is very important to Chile. Almost one third of all Chile's money comes from selling its copper to other countries.



3. Why is copper such a valuable natural resource? Write your answer.



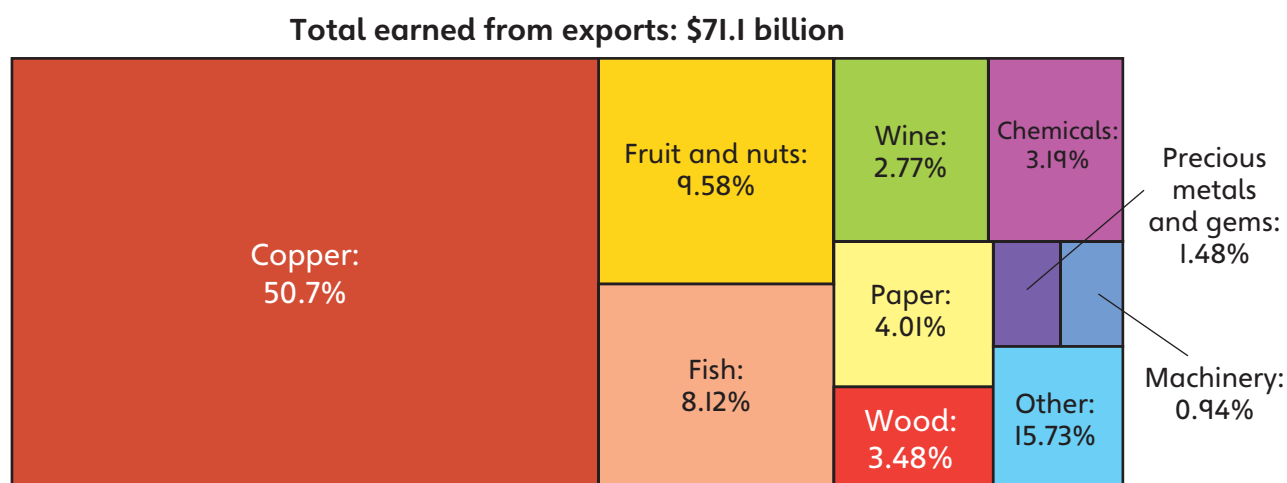
4. Look at the photograph. How do you think copper is mined in an open-pit mine? Write your answer.



Escondida copper mine

Chile's exports

This diagram shows Chile's **exports** in 2019.



5. Use the diagram to answer these questions. Tick the correct answers.

a. What natural resource makes up over half of all Chile's exports?

copper ☐

fruit and nuts ☐

vehicles ☐

b. Chile has a very long coastline. Which of its main exports comes from the ocean?

wine ☐

paper ☐

fish ☐

c. How much money did Chile make from all its exports in 2019?

\$71.1 billion ☐

\$50.7 billion ☐

\$201.9 billion ☐

Lesson 5

What natural resources does the UK have?



Quiz

1. Match these sentence starts to the correct sentence ends. Draw lines between them.

a. The driest desert on Earth, in Chile, is called ...
b. Argentina is a country with which ...
c. One way to describe Chile is to say that it is ...
d. Chile's most important natural resource is ...
e. Copper is a very valuable natural resource because it is...

effective in electric wires.
the Atacama Desert.
very long and thin.
Chile shares a very long border.
copper: it makes up 50% of Chile's exports.

2. Read the statements below. Tick 'True' or 'False' for each one.

- a. Chile has natural resources for growing grapes, and it exports wine. True ☐ False ☐
- b. Chile has the largest gold reserves in the world. True ☐ False ☐
- c. Copper is a valuable resource because it is used in making food. True ☐ False ☐

3. Which one of these countries shares a border with Chile? Tick the correct answer.

- a. Brazil ☐ b. Argentina ☐
c. The UK ☐ d. Mexico ☐

4. Which of the following is Chile's second most valuable export? Tick the correct answer.

- a. copper ☐ b. wine ☐
c. precious gems ☐ d. fruit and nuts ☐

The UK's natural resources

The United Kingdom has many natural resources.

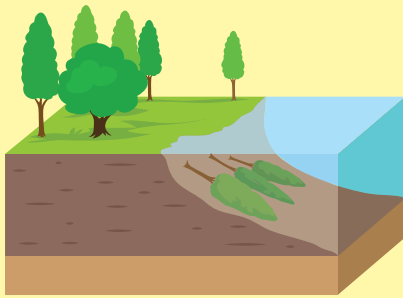
- Coal helped the UK to develop and become wealthy in the 1800s.
- Limestone and iron ore (rock containing iron), were very important in the UK's steel and shipbuilding industries.
- Oil was discovered in the North Sea in the 1970s.
- The UK has very good soil for farming. There are large, flat areas that have good soil, and a good climate for growing crops such as wheat, potatoes, oats, fruits and vegetables.
- In the past, the UK also took unfair control of other countries' natural resources, such as cotton, sugar, coffee and tobacco.



I. a. Name five of the UK's natural resources. Write your answers.

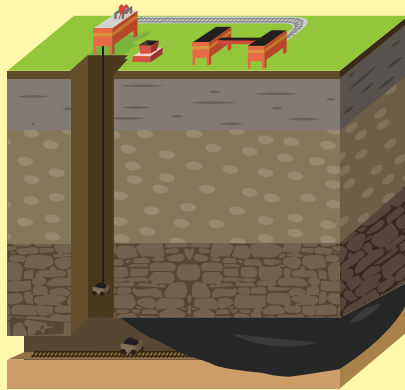
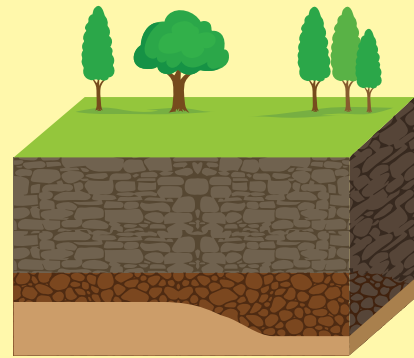
b. Name four natural resources from other countries that the UK unfairly controlled. Write your answers.

How is coal formed?



Millions of years ago, trees that fell during floods were buried underneath soil.

More and more soil covered the trees. Over time, the soil turned to rock. This was followed by more layers of soil and rock, increasing the pressure that squashed the dead wood.



Over millions of years, this pressure and the heat of Earth turned the dead wood into coal.

Humans are now able to dig up the coal to use it as fuel.



2. Put these sentences in the correct order to explain how coal is formed. Write numbers to show the order. (We've done one for you to get you started.)

- ☒ 1 Forests are flooded and covered over by water.
- ☐ Humans dig up the coal and burn it to release energy.
- ☐ Millions of years of pressure turns the dead wood into coal.
- ☐ More and more layers of soil cover the trees. The soil turns to rock.
- ☐ The dead trees are squashed by the weight of the rock above them.
- ☐ The dead trees are covered by soil underwater.



3. What problems does coal cause when it is burned for energy? Write your answer.

4. What do these two pictures show? What is the difference between them? Write your answers.



The two photos both show _____
_____.

The main difference between them is _____
_____.

The UK's wind resources

The UK has one of the best locations in the world for wind: it is the windiest country in Europe. When wind is used to turn turbines, it produces electricity. Over 50% of the UK's electricity is now generated from renewable sources, with wind power contributing 25% of the total electricity supply.

Wind is a renewable resource. It also forms **clean energy**: it does not produce carbon dioxide or air pollution. However, the turbines do not produce any electricity when the wind stops blowing.



5. Fill in the blanks to complete these sentences, using the words below.

electricity renewable warming wind
fossil dioxide sea

The UK has nearly 10,000 _____ turbines. When wind turbines are grouped together, they are called a wind farm. The UK has wind farms on land and also out at _____. Wind turbines are very tall – over 90 metres – and each of their three blades is over 50 metres long. When the wind blows, wind turbines generate _____, which goes into cables to power homes and businesses. Unlike _____ fuels like coal, wind is a _____ resource. This means it will never run out. Unlike fossil fuels, wind power does not release carbon _____. This means wind power does not increase global _____.

Lesson 6

Unit check out



‘Every country should stop mining natural resources.’ How much do you agree with this statement?

Key words		
clean energy	mining	renewable
climate	natural resources	reserves
exports	non-renewable	
fossil fuels	pollution	

Title: ‘Every country should stop mining natural resources.’ How much do you agree with this statement?	<hr/> <hr/> <hr/>
Introduction <ul style="list-style-type: none">• What are natural resources?• Why are natural resources important?	<hr/> <hr/> <hr/> <hr/>
Paragraph 1 <ul style="list-style-type: none">• What is mining?• Why is mining natural resources important?	<hr/> <hr/> <hr/> <hr/>

<p>Paragraph 2</p> <ul style="list-style-type: none"> • Why was mining coal important for the UK in the past? • Why is mining copper important for Chile? 	<hr/> <hr/> <hr/> <hr/>
<p>Paragraph 3</p> <ul style="list-style-type: none"> • How is mining natural resources linked to pollution? • How is the use of fossil fuels linked to global warming? • How is mining dangerous for miners? 	<hr/> <hr/> <hr/> <hr/>
<p>Extension paragraph</p> <ul style="list-style-type: none"> • What natural resources can be used for energy instead of fossil fuels? • How is the UK replacing coal with renewable energy resources? 	<hr/> <hr/> <hr/> <hr/>
<p>Conclusion</p> <ul style="list-style-type: none"> • Should Chile stop mining natural resources? • Should the UK stop mining natural resources? • Should every country stop mining natural resources, in your view? 	<hr/> <hr/> <hr/> <hr/>

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Natural resources

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Primary Geography

Natural resources

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