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1.1 What is a geographer?

Being a geographer

1. What can geography help you to make sense of? Complete the table.

<table>
<thead>
<tr>
<th>Geographers explore...</th>
<th>Description of this area of geography</th>
<th>Examples of things a geographer might study in this area</th>
</tr>
</thead>
<tbody>
<tr>
<td>The physical world</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The human world</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The environmental world</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. On the map below, label the seven continents and four major oceans of the world.

3. Look out of the window which is closest to you. Using the six geographical questions, write a description of the area that you see in front of you.

Where is this place?
What is it like?
Why is it like this?
How is it changing?
Who is affected by the changes?
How do I feel about it?
1.1 What is a geographer?

How can I be a good geographer?

1. Complete the paragraph by using the words in the box.

questions places data understands

A good geographer investigates and ______________ all the aspects of the world in which we live. They develop a locational knowledge of where ______________ are in the world. A good geographer asks ______________ and uses a wide range of geographical ______________ to investigate places.

2. Progress in Geography: Key Stage 3 is full of different types of geographical data. On pages 2 and 3, we can see a map and a photograph. Look through the rest of the book and make a list of all the different types of geographical data you can see.

3. Look at the two different landscapes shown in photograph B and photograph C on pages 2 and 3. Think of five geographical questions you could ask for each photograph.

### Photograph B

- Question 1: Who…
- Question 2: What…
- Question 3: Where…
- Question 4: Why…
- Question 5: How…

### Photograph C

- Question 1: Who…
- Question 2: What…
- Question 3: Where…
- Question 4: Why…
- Question 5: How…

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1.2 How has our knowledge of the world progressed over time?

Map of the world from 194 BC

Look carefully at Map A and answers the questions.

When was the map drawn?

Who constructed the map?

What new knowledge was incorporated into the drawing of the map?

A: Map of the world according to Eratosthenes

Describe how the world is shown in the map, and which parts are missing. You can draw on and label the map to help you do this.

Explain why this was not an accurate representation of the world.
1.2 How has our knowledge of the world progressed over time?

Map of the world from 1658

Look carefully at Map B and answers the questions.

When was the map constructed?

Describe how the world is depicted in this map.

Explain why this is a more detailed and accurate view of the world than Map A.

Which parts of the world are missing on this map? You can draw on and label the map to help you with this question.
1. Look carefully at Tables B and C.

a) Draw a bar chart to show the area of each continent. Give your bar graph a title.
1.3 What locational knowledge do you have of the world?

Continents and oceans

b) Draw a bar chart to show the population of each continent. Give your bar graph a title.

2. Who am I? Read each fact and decide which continent or ocean it refers to.

<table>
<thead>
<tr>
<th>Fact</th>
<th>Continent/Ocean</th>
</tr>
</thead>
<tbody>
<tr>
<td>I cover an area of 9.9 million km².</td>
<td>South America</td>
</tr>
<tr>
<td>I have the biggest population in the world.</td>
<td>Asia</td>
</tr>
<tr>
<td>I am the largest ocean.</td>
<td>Pacific Ocean</td>
</tr>
<tr>
<td>I have a population of 1111 million people.</td>
<td>North America</td>
</tr>
<tr>
<td>No people live here!</td>
<td>Antarctica</td>
</tr>
<tr>
<td>I cover the smallest area out of all the continents.</td>
<td>Australia</td>
</tr>
<tr>
<td>I am the smallest ocean.</td>
<td>Arctic Ocean</td>
</tr>
<tr>
<td>I am a continent that covers 6% of the Earth’s surface.</td>
<td>Africa</td>
</tr>
</tbody>
</table>
1.3 What locational knowledge do you have of the world?

Welcome to Europe!

1. Which European country am I? Read the clues and complete the crossword.

Across
2. I have borders with Spain, Belgium, Switzerland and Italy.
4. I am north of the Black Sea.
7. I am found to the west of Spain.
8. I border the United Kingdom.
9. I border Sweden, Finland and Russia
10. I am directly north of Latvia.

Down
1. I am shaped like a boot.
3. I am directly north of Austria.
5. I am the largest European country.
6. I border Ukraine and Romania.

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1. In Lesson 1.3 we looked at a map of Europe. Here it is again, but this time with lines of longitude and latitude marked on it. Find the following degree confluences and write what country, sea or ocean you can find at that point in the table.

<table>
<thead>
<tr>
<th>Degree Confluence</th>
<th>Location</th>
<th>Degree Confluence</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>60°N  50°E</td>
<td></td>
<td>50°N  10°E</td>
<td></td>
</tr>
<tr>
<td>40°N  0°</td>
<td></td>
<td>65°N  20°W</td>
<td></td>
</tr>
<tr>
<td>70°N  20°E</td>
<td></td>
<td>50°N  30°E</td>
<td></td>
</tr>
</tbody>
</table>

2. Where is your nearest degree confluence? Visit: [confluence.org](http://confluence.org), select the United Kingdom from the list, and use the map to find your nearest confluence.

   a) Where is it?

  b) What is its altitude? (height above sea level)

  c) How does the visitor describe the landscape?
1. Read each statement and decide if it is referring to longitude or latitude.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Longitude</th>
<th>Latitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Prime Meridian is one of these.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>This is always written first.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Tropic of Cancer is one of these.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>They use the labels E and W.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Arctic Circle is one of these.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Tropic of Capricorn is one of these.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>They use the labels N and S.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Equator is the most famous one of these.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>They split the Eastern and Western hemispheres.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Some of the labels are missing on this world map showing lines of latitude and longitude. Fill in the boxes to complete the labels.

3. What is the co-ordinate of B on the map above?

4. What is the co-ordinate of F on the map above?

5. What is the co-ordinate of H on the map above?

6. What happens to the length of the lines of latitude as you get closer to the poles?

7. Apart from location, what do lines of longitude help us to work out?

8. If the North Pole is most northerly line of latitude and has a measurement of 90°, how many lines of latitude are there in total, North and South of the Equator?
2.1 How do we use our planet as a natural resource?

**Earth’s spheres and resources 1**

1. In life, there are things that we need to survive, and things that we just want. All of these come from Earth’s spheres and require natural resources. Think about what you need and want to fill in the table below. An example has been provided for you.

<table>
<thead>
<tr>
<th>What we need to live</th>
<th>What you want in life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean water to drink</td>
<td>A Ferrari</td>
</tr>
</tbody>
</table>

2. Annotate the Earth’s spheres diagram below with examples of different natural resources that can be found in each sphere. For example, the hydrosphere contains resources such as fish for food and water for drinking.
2.1 How do we use our planet as a natural resource?

Earth’s spheres and resources 2

1. Choose and tick the correct definition for each key term.
   A non-renewable resource is:
   - ☐ Something which is never replaced
   - ☐ Something which takes millions of years to be replaced
   - ☐ Something which takes fifty years to be replaced
   A renewable resource is:
   - ☐ Something which humans can recreate and make for themselves
   - ☐ Something which we don’t use very much so it doesn’t get used up
   - ☐ Something which can be replaced within an average human life time

2. Think about yesterday. What natural resources did you use during the day? What sphere are they from? Are these renewable or non-renewable?

<table>
<thead>
<tr>
<th>Natural resource</th>
<th>What was it used for?</th>
<th>What sphere/spheres</th>
<th>Renewable or non?</th>
</tr>
</thead>
<tbody>
<tr>
<td>e.g. water</td>
<td>Drinking, brushing teeth, bathing</td>
<td>Hydrosphere</td>
<td>Renewable</td>
</tr>
</tbody>
</table>

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### Rock types

Cut up the cards and rearrange them into three categories: sedimentary, igneous, metamorphic. Then stick them into your book in the right categories.

<table>
<thead>
<tr>
<th>Sedimentary Rocks</th>
<th>Igneous Rocks</th>
<th>Metamorphic Rocks</th>
</tr>
</thead>
<tbody>
<tr>
<td>These rocks usually form at the bottom of deep water where material gets deposited. Examples of this rock include: sandstone, coal, clay, chalk.</td>
<td>Examples of this rock include: granite, basalt, pumice. These rocks can have air and gas bubbles or holes inside them that can make them lighter (pumice can float).</td>
<td>These rocks often contain minerals.</td>
</tr>
<tr>
<td>These rocks form in layers usually in seas or deep lakes. Examples of this rock include: marble, slate, quartzite.</td>
<td>These rocks form very deep inside the Earth. These rocks often contain fossils or other rocks within the layers.</td>
<td>These rocks often contain minerals.</td>
</tr>
<tr>
<td>This rock type’s name means ‘change in form’ as it changes the original rocks.</td>
<td>Most of the Earth’s crust is made of these rocks.</td>
<td>These rocks form when magma/lava cools and hardens.</td>
</tr>
<tr>
<td>These rocks are formed by deposition of lots of sediment as it compact together.</td>
<td>These rocks can have large or small crystals depending on how quickly it cools.</td>
<td>These rocks change under heat and pressure to become something different.</td>
</tr>
</tbody>
</table>

Examples:
- Granite and pumice
- Marble and quartz
- Sandstone and clay
### Rock types

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<td>This rock type’s name means ‘change in form’ as it changes the original rocks</td>
<td>These rocks usually form at the bottom of deep water where material gets deposited</td>
</tr>
<tr>
<td>Examples of this rock include: granite, basalt, pumice</td>
<td>Examples of this rock include: marble, slate, quartzite</td>
<td>Examples of this rock include: sandstone, coal, clay, chalk</td>
</tr>
<tr>
<td>Granite and pumice</td>
<td>Marble and quartz</td>
<td>Sandstone and clay</td>
</tr>
</tbody>
</table>
### 2.2 What are rocks, and how are they a natural resource?

#### Weathering

1. What is weathering?

2. For each type of weathering, draw your own annotated diagram to describe how it changes rock.

<table>
<thead>
<tr>
<th>Type of Weathering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freeze-thaw weathering</td>
</tr>
<tr>
<td>Chemical weathering</td>
</tr>
<tr>
<td>Biological weathering</td>
</tr>
</tbody>
</table>

3. Which rock type do you think will be softest and most weak to weathering? Why?
2.3 What are rocks, and how are they a natural resource?

How coal is formed

1. Study Diagram F on page 26. Create your own large, neat, annotated sketch to show how coal is formed as a sedimentary rock.

2. Coal is formed in bodies of water, from decaying plants and animals, mixing with layers of rock. Which of Earth's spheres (from 2.1) are connected together to create coal?

3. What is coal used for today?

4. How is this different to how coal was used in the past?
2.3 What are rocks, and how are they a natural resources?

Rock resources

This is Force Garth quarry in Teesdale, Scotland.

The quarry is an open quarry on the surface of the land for whinstone, a hard igneous rock.

The landscape here is

This could cause changes to the land such as

The river water is useful for cooling and easing equipment that cuts the rock slabs.

What impacts might the quarry have on water sources, and the environment generally?

Tips:
Think about what you can see in the foreground and background.

Think about human and physical features in the image.

Avoid talking about ‘pollution’ – be specific. What type of pollution (air, noise, land, water)?
2.4 Why are soils the root of life?

**Why is soil important?**

1. Match the people with the correct viewpoints.

<table>
<thead>
<tr>
<th>D: Gillian Wright, civil engineer</th>
<th>1 Without the soil I can’t grow anything. I must look after it if I am to successfully grow crops and earn a living. It provides minerals and water plants need to grow.</th>
</tr>
</thead>
<tbody>
<tr>
<td>E: Joanna Brown, hydrologist</td>
<td>2 I’m interested in studying the underlying rock that a soil forms from, and how this rock affects the type of soil that forms.</td>
</tr>
<tr>
<td>F: David Wilson, farmer</td>
<td>3 The nature of the soil has a big effect on what happens to water falling onto it as rain. Sandy soils are porous so that rain falling on them usually enters the soil easily and quickly, because it has plenty of pores to flow through. Clay soils can be impermeable and not let rainwater into the soil, so it has to flow across the surface, which can lead to floods.</td>
</tr>
<tr>
<td>G: Dr Liu, soil scientist</td>
<td>4 We are a major company manufacturing chemical fertilisers. These replace the nutrients that crops remove from the soil. Without the addition of fertilisers, crop yields would be significantly reduced.</td>
</tr>
<tr>
<td>H: Chemical fertiliser manufacturer</td>
<td>5 I specialise in studying the ground and soil on which a structure is built. The amount of weight a soil can support will help decide the types of foundations a building will need.</td>
</tr>
<tr>
<td>I: Joseph Mutingwa, environmentalist</td>
<td>6 It’s important we better understand soil and how it forms. I study its colour, the minerals in it, its texture and the different forms of life that exist in it and the jobs they do.</td>
</tr>
<tr>
<td>J: Katherine Jones, geologist</td>
<td>7 Our soil research has shown that widespread use of chemical fertiliser damages soil. At first they lead to bumper harvests, but the long-term effect has damaged the soil which now has fewer minerals. This leads to weaker plants, which are more easily diseased.</td>
</tr>
</tbody>
</table>

2. Justify your choices below.

D = ____ because __________________________________________________________
E = ____ because __________________________________________________________
F = ____ because __________________________________________________________
G = ____ because __________________________________________________________
H = ____ because __________________________________________________________
I = ____ because __________________________________________________________
J = ____ because __________________________________________________________
Compare the sketch of a tropical rainforest below with Photo B in the student book.

1. Label the vegetation layers on the sketch, include the vertical scale showing the average height of each layer.
2. Annotate the sketch to show how the Earth's spheres have interacted to create this biome.
3. Annotate the sketch to show how the vegetation has adapted to the environment.
2.5 How does the biosphere provide natural resources?

### Natural resources

1. Read Article E on page 31. Use the information to complete the table below to summarise all the natural resources we get from rainforests.

<table>
<thead>
<tr>
<th>Resources</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Food</td>
<td>bananas, avocados, cashews</td>
</tr>
<tr>
<td>Medicine</td>
<td></td>
</tr>
<tr>
<td>Timber</td>
<td></td>
</tr>
<tr>
<td>Cosmetics</td>
<td></td>
</tr>
<tr>
<td>Role in the Earth's system</td>
<td></td>
</tr>
</tbody>
</table>

2. Use the internet to find some other natural resources we get from rainforests and add them to the table.

3. Why is dense rainforest important for the atmosphere?

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