

## How do we use our planet as a natural resource and the consequences of this?

### About the unit

This is the first unit for Year 8. This provides an important building block to an understanding of the planet that will be revisited and progressed through different units, and progressed further at GCSE.

This unit focuses on how people use the natural resources of the Earth's spheres, introducing how we use rocks, soil, biomes, water, oil, and different forms of energy.

A key physical geography concepts are introduced in this unit –soil and biome formation. The concept of sustainability and renewable and non-renewable resources are also introduced. These key concepts will be further progressed through the course.

### Key learning for this unit:

- How soils form and their importance to life.
- What a biome is and how the rainforest biome works.
- How people use the Earth's natural resources such as water, oil and energy supplies.
- The difference between renewable and non-renewable resources.

### Key aspects of pupil achievement

Contextual world knowledge of locations, places and geographical features

Pupils will:

- identify how humans played a part in the Deepwater Horizon oil spill – Gulf of Mexico, USA.

### Understanding of the conditions, processes and interactions that explain features, distribution patterns, and changes over time and space

Pupils will:

- understand how rocks are weathered

- understand the composition and formation of soils
- identify how people use the Earth's natural resources – rocks, soil, biomes, water, oil
- classify and evaluate sources of renewable and non-renewable forms of energy
- define a geographical concept – sustainability.

### Competence in geographical enquiry and skills

Pupils can:

- communicate views about the need to use natural resources sustainably
- use new geographical terminology.

### Prior learning

This unit builds on prior learning.

- NC KS2 – pupils may know about biomes, and the distribution of natural resources.
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### Key geographical terminology

Through the activities in this unit pupils will be able to understand, use and spell correctly the following words:

resources; raw materials; renewable; non-renewable; weathering; impermeable; soil profile; biome; rainforest; water scarcity; crude oil; national grid, sustainability.

## Assessment opportunities

### Lesson 5

- Create a leaflet educating Y7's on what natural resources are and what renewable and non renewable energy is.

### Websites

Lesson 1 <https://www.youtube.com/watch?v=Qw6uXh9yM54>

Lesson 2 <https://www.youtube.com/watch?v=YTnE0OQPTEo>  
<https://www.youtube.com/watch?v=20Vb6hLQsQ>

Lesson 3 <https://www.youtube.com/watch?v=8yASbM8M2vg>

Lesson 7 [https://www.youtube.com/watch?v=4xls7K\\_xFBQ](https://www.youtube.com/watch?v=4xls7K_xFBQ)

Lesson 9 <https://www.youtube.com/watch?v=TQQXstNh45g>

## Links to 2014 National Curriculum

Understand, through the use of detailed place-based exemplars at a variety of scales, the key processes in:

**physical geography** relating to: geological timescales....; rocks, weathering and soils

**human geography** relating to: the use of natural resources understand how human and physical processes interact to influence and change landscapes, environments and the climate; and how human activity relies on the effective functioning of natural systems

## Future learning at GCSE

### GCSE Geography OCR B:

- **Sustaining Ecosystems** – An overview of the distribution and characteristics of large-scale natural global ecosystems. For two selected ecosystems, draw out the interdependence of climate, soil, water, plants, animals and humans; the processes and interactions that operate within them at different scales; and issues related to biodiversity and to their sustainable use and management.
- **Resource Reliance** – An overview of how humans use, modify and change ecosystems and environments in order to obtain food, energy and water resources. Detailed study of one of either food, energy or water, recognising the changing characteristics and distribution of demand and supply, past and present impacts of human intervention, and issues related to their sustainable use and management at a variety of scales.

## Lesson outlines

Lesson 1 What are natural resources?			
Key learning for the unit	Possible teaching and learning activities	Key geographical terminology	Supporting resources
<ul style="list-style-type: none"> <li>To be able to define what natural resources are.</li> <li>To evaluate the importance of different resources.</li> </ul>	<ul style="list-style-type: none"> <li>This lesson introduces natural resources. Pupils learn about what natural resources are, with examples. They learn how humans use natural resources as raw materials to meet their basic needs.</li> <li>Identify natural resources and their use. Make decisions about what if the most important natural resource and why.</li> <li>Introduce renewable and non-renewable. How do you know which is which?</li> <li>Sort resources in a diamond 9 into most/least important</li> </ul>	<ul style="list-style-type: none"> <li>natural resources</li> <li>raw materials</li> <li>renewable</li> <li>non-renewable</li> </ul>	<ul style="list-style-type: none"> <li>Lesson 1</li> <li>Diamond 9 worksheet</li> <li>Use of natural resources table</li> </ul>
<b>Weblinks for the lesson:</b>			
<ul style="list-style-type: none"> <li>Video clip of natural resources <a href="https://www.youtube.com/watch?v=Qw6uXh9yM54">https://www.youtube.com/watch?v=Qw6uXh9yM54</a></li> </ul>			
<ul style="list-style-type: none"> <li>1 – Literacy &amp; Oracy</li> </ul>			

## Lessons 2 What are fossil fuels?

Learning objectives	Possible teaching and learning activities	Key geographical terminology	Supporting resources
<ul style="list-style-type: none"><li>• To explain what the different types of fossil fuels are.</li><li>• To evaluate the benefits and challenges of fossil fuels.</li></ul>	<ul style="list-style-type: none"><li>• Establish what is meant by fossil fuels and identify them. Are they renewable or non-renewable?</li><li>• Sort fuels into renewable &amp; non-renewable.</li><li>• Look at how power is created.</li><li>• Look at ways in which we use fossil fuels.</li><li>• Advantages and disadvantages of fossil fuels. Do the advantages outweigh the disadvantage?</li><li>• Consider how we can reduce our reliance on fossil fuels.</li></ul>	<ul style="list-style-type: none"><li>• Fossil fuel</li><li>• Renewable</li><li>• Non-renewable</li><li>•</li></ul>	<ul style="list-style-type: none"><li>• Lesson 2</li><li>•</li></ul>

### Weblinks for the lesson:

- Video clip: fossil fuels: <https://www.youtube.com/watch?v=YTnE00QPTEo>
- Creating energy: <https://www.youtube.com/watch?v=20Vb6hILQSg>

- 1 – Literacy & Oracy

### Lesson 3 Deepwater Horizon

Learning objectives	Possible teaching and learning activities	Key geographical terminology	Supporting resources
<ul style="list-style-type: none"><li>To explain how the extraction of natural resources can lead to disaster.</li></ul>	<ul style="list-style-type: none"><li>Watch a film clip from the Deepwater Horizon movie to introduce the lesson.</li><li>Write a description of the location of the Deepwater Horizon.</li><li>Causes of the oil spill – discuss.</li><li>Look at data to show how the Deepwater Horizon spill links to other spills and compare the size of the spills.</li><li>Sort impacts of the spill into Social, Economic &amp; Environmental.</li><li>Extended Writing - “The loss of money to the USA was the worst impact of the Deepwater Horizon oil spill.” How far do you agree?</li></ul>	<ul style="list-style-type: none"><li>Oil</li><li>Oil rig</li><li>Gulf of Mexico</li><li>USA</li></ul>	<ul style="list-style-type: none"><li>Lesson 3</li><li>Deepwater Horizon film clip</li><li>Impact cards</li></ul>

#### Weblinks for the lesson:

- <https://www.youtube.com/watch?v=8yASbM8M2vg>

- 1 – Literacy & Oracy

- 6 – Careers (oil industry)

## Lesson 4 What is renewable energy?

Learning objectives	Possible teaching and learning activities	Key geographical terminology	Supporting resources
<ul style="list-style-type: none"><li>• To be able to explain what renewable energy is.</li><li>• To evaluate the advantages and disadvantages of “green” energy.</li></ul>	<ul style="list-style-type: none"><li>• Discuss fossil fuels (revisit) and come up with reasons why relying on fossil fuels/non-renewable energy is a bad thing.</li><li>• Discuss terms renewable energy and sustainability. Give examples of something being used sustainably and unsustainably.</li><li>• Independent task – students to be given some information sheets about different types of renewable energy. Use the sheets to find out about how the energy is generated, advantages and disadvantages of it.</li></ul>	<ul style="list-style-type: none"><li>• Renewable energy</li><li>• Biomass</li><li>• Solar power</li><li>• Wind power</li><li>• Tidal power</li><li>• Geothermal energy</li><li>• Hydroelectric power</li></ul>	<ul style="list-style-type: none"><li>• Lesson 4</li><li>• Energy types worksheet</li></ul>

### Weblinks for the lesson:

- 1 – Literacy & Oracy

**Lesson 5 Assessment**

<b>Learning objectives</b>	<b>Possible teaching and learning activities</b>	<b>Key geographical terminology</b>	<b>Supporting resources</b>
<ul style="list-style-type: none"><li>• To review learning</li></ul>	<ul style="list-style-type: none"><li>• Revision of work so far.</li><li>• The task is to create a leaflet educating Y7's on what natural resources are and what renewable and non renewable energy is.</li><li>• Students to be given a list of essentials to include.</li></ul>	<ul style="list-style-type: none"><li>• Renewable</li><li>• Non-renewable</li><li>• Fossil fuels</li></ul>	<ul style="list-style-type: none"><li>• Plain paper</li><li>• Leaflet template for those who want it</li></ul>

**Weblinks for the lesson:**

## Lesson 6 What is so important about soil?

Learning objectives	Possible teaching and learning activities	Key geographical terminology	Supporting resources
<ul style="list-style-type: none"><li>• To identify the different layers of soil.</li><li>• To be able to explain the nutrient cycle.</li></ul>	<ul style="list-style-type: none"><li>• This lesson introduces soil, what it consists of.</li><li>• Pupils work in groups to identify what soil means to them.</li><li>• Students use a soil profile and have to identify each layer.</li><li>• A range of views about soil are given for pupils to look at and match to a range of people, including conflicting views about the use of chemical fertilisers to grow crops.</li><li>• Pupils explain why soil is a natural resource and why it is important for life.</li><li>• Pupils decide whether soil is a renewable or non-renewable natural resource and justify their answer.</li><li>• Look at the nutrient cycle and how it adds/removes nutrients to/from the soil.</li></ul>	<ul style="list-style-type: none"><li>• Soil</li><li>• Minerals</li><li>• Humus</li><li>• Nutrients</li><li>• Bedrock</li><li>• Weathering</li><li>• Topsoil</li><li>• Biomass</li><li>• Litter</li><li>• Leaching</li></ul>	<ul style="list-style-type: none"><li>• Lesson 6</li><li>• Soil layers worksheet</li><li>• Nutrient cycle worksheet</li></ul>

### Weblinks for the lesson

#### 1 – Literacy & Oracy

## Lesson 7 Can a desert get bigger?

Learning objectives	Possible teaching and learning activities	Key geographical terminology	Supporting resources
<ul style="list-style-type: none"><li>To investigate the causes of desertification.</li></ul>	<ul style="list-style-type: none"><li>Discuss what a desert is and introduce the word desertification.</li><li>Look at a climate graph for a desert and question students. Describe what the climate is like.</li><li>Using a map of the Sahel, students are to describe areas at risk of desertification.</li><li>Identify causes of desertification.</li><li>Response – what is done? Watch a video about the Great Green Wall and produce a response information sheet.</li></ul>	<ul style="list-style-type: none"><li>Desertification</li><li>Green Wall</li></ul>	<ul style="list-style-type: none"><li>Lesson 7</li><li>Green Wall worksheet</li><li>Green Wall info sheet</li></ul>

### Weblinks for the lesson

- Green Wall - [https://www.youtube.com/watch?v=4xls7K\\_xFBQ](https://www.youtube.com/watch?v=4xls7K_xFBQ)

- 1 – Literacy & Oracy

- 2 - Numeracy

## Lesson 8 Deforestation – good or bad?

Learning objectives	Possible teaching and learning activities	Key geographical terminology	Supporting resources
<ul style="list-style-type: none"><li>• To identify why the rainforests are being destroyed</li><li>• To explain the impacts of deforestation</li><li>• To evaluate the reasons for deforestation.</li></ul>	<ul style="list-style-type: none"><li>• Start with the question – ‘What would happen if all of the rainforests were destroyed?’</li><li>• What is deforestation? Why are forests cleared?</li><li>• Use a map and ask students to describe how world forest cover has changed.</li><li>• Effects of deforestation – categorize into social, economic and environmental effects.</li><li>• Benefits of trees – biodiversity, carbon sink, habitats, nutrient cycle.</li></ul>	<ul style="list-style-type: none"><li>• Sustainability</li><li>• Deforestation</li><li>•</li></ul>	<ul style="list-style-type: none"><li>• Lesson 8</li><li>• Causes worksheet</li></ul>

### Weblinks for the lesson

- 1 – Literacy & Oracy

## Lesson 9 How do we use our planet as a natural resource? Review

Learning objectives	Possible teaching and learning activities	Key geographical terminology	Supporting resources
<ul style="list-style-type: none"> <li>To be able to understand the impacts of unsustainable palm oil production.</li> </ul>	<ul style="list-style-type: none"> <li>Start with pictures – an orangutan and products made using palm oil - What is the link?</li> <li>Introduce palm oil and the use of it</li> <li>Show students where Borneo is and the types of animals found there. What would happen to them if they lost their habitat?</li> <li>Watch ‘Rang-tan’ (the Iceland advert which was banned). How are Iceland trying to make the audience care about the environment? Do you think it should have been banned for being too political?</li> <li>Data response – use data and the students need to respond to questions about the graph and pie charts – e.g. loss of forest, change in orangutan population</li> <li>Card sort – advantages and disadvantages of palm oil. Further sort them into social, economic and environmental issues.</li> <li>Extended writing - Write a letter to the Prime Minister arguing for or against a ban on unsustainable Palm oil.</li> </ul>	<ul style="list-style-type: none"> <li>Deforestation</li> <li>Palm oil</li> <li></li> </ul>	<ul style="list-style-type: none"> <li>Lesson 9</li> </ul>

### Weblinks for the lesson

- <https://www.youtube.com/watch?v=TQQXstNh45g>

- 1 – Literacy & Oracy

- 2 - Numeracy

## Lesson 10 Will we ever run out of fresh water?

Learning objectives	Possible teaching and learning activities	Key geographical terminology	Supporting resources
<ul style="list-style-type: none"> <li>To explain the impacts of water insecurity.</li> <li></li> </ul>	<ul style="list-style-type: none"> <li>Come up with ways in which we use water. Why do you think water is important?</li> <li>Maths skills – create a pie chart showing where water is found on Earth. Describe what the pie chart shows.</li> <li>Pictures used as a stimuli – why might we have problems with water in the future?</li> <li>How has water usage changed over time? Look at a graph and comment on it.</li> <li>Discuss the terms water security and insecurity. Why is it important to have water security?</li> <li>How does water insecurity impact us?</li> </ul>	<ul style="list-style-type: none"> <li>Security</li> <li>insecurity</li> </ul>	<ul style="list-style-type: none"> <li>Lesson 10</li> </ul>
<ul style="list-style-type: none"> <li>1 – Literacy &amp; Oracy</li> </ul>			
<ul style="list-style-type: none"> <li>2 - Numeracy</li> </ul>			