

Year 6 Geography Autumn Plan - Energy and Sustainability

Unit Rationale

This unit aims to consolidate locational knowledge acquired throughout KS1 and KS2 and apply it to global geographical issues. Children are expected to use geographical reasoning to assess the impact of changing populations, analyse data from tables and graphs, use maps to name and locate different places and use their understanding of their own localities to compare and contrast with other places, suggesting reasons for variations based on geographical evidence.

National Curriculum Objectives:

Locational knowledge

locate the world's countries, using maps to focus on Europe (including the location of Russia) and North and South America, concentrating on their environmental regions, key physical and human characteristics, countries, and major cities name and locate counties and cities of the United Kingdom, geographical regions and their identifying human and physical characteristics, key topographical features (including hills, mountains, coasts and rivers), and land-use patterns; and understand how some of these aspects have changed over time

Place knowledge

understand geographical similarities and differences through the study of human and physical geography of a region of the United Kingdom, a region in a European country, and a region within North or South America

Human and physical geography

describe and understand key aspects of physical and human geography and the distribution of natural resources

Geographical skills and fieldwork

use maps, atlases, globes and digital/computer mapping to locate countries and describe features studied
use fieldwork to observe, measure, record and present the human and physical features in the local area

Cross Curricular Links:

Science - Year 3 - Rocks (make up of the earth to explain where resources come from)
Science Year 5 - Earth and Space (solar energy)
Science - Earth Day and explorify
PSHE - Our Planet
History - Year 6 - History of the British Empire (Industrial Revolution)

Trips/Visits:

Local community walk looking for sustainability
Wind farms or solar panel plants
Local MP to talk about sustainability in the town

Modern Day Links:

Climate change
Sustainability Initiatives
Reduce, Reuse, Recycle

Prior Learning:

EYFS - Michael Recycle

Substantive Knowledge:

Sustainability is using resources that are good for people, the environment, and the

Ambition Collaboration Fairness Respect

<p>Year 2 - Oceans and Seas - link to protection of our oceans Year 3 - Locational Knowledge of the UK - link to farming and agribusiness Year 3 - Water, Weather and Climate - link to climate change and sustainable use of water Year 4 - Rivers - link to hydropower and sustainable use of water Year 5 - Natural Resources - sustainable use of the natural resources Year 5 - Biomes - how do we use biomes sustainably and protect the environment?</p>	<p>economy both in the present and the future.</p> <p>Energy for the world comes from renewable and non-renewable energy.</p> <ul style="list-style-type: none"> - renewable - a natural source of energy that will never run out. Wind, the Sun and water are renewable energy sources that can be used to create electricity. - nonrenewable - a resource that once it is gone it cannot be replaced like coal, gas and fossil fuels. - <p>Energy mix simply means using different types of resources to produce energy.</p> <p>Use of energy can impact on the environment and climate change. There are lots of strategies in place to improve our sustainability, such as increasing green spaces, increased use of renewable energy sources and recycling schemes.</p>
<p>Big ideas/Disciplinary Knowledge</p>	<p>What next?</p>
<ul style="list-style-type: none"> ● Place ● Space ● Scale ● Interconnection ● Physical and human processes ● Environmental impact and sustainable development ● Cultural awareness and diversity 	<p>Chn should leave primary school with a good understanding of scale and global issues without contributing to stereotypes.</p>

Lesson	WALT	What should the children remember?	Lesson plan and outcome	Key Vocabulary	Key Questions
Lesson 1	Describe what sustainability is Class discussion and in books	Recall what natural resources are and how we use them sustainably (Year 5)	Active prior learning: Discuss - how do we use the world's natural resources sustainably? AfL: have you heard the word sustainable or sustainability before? Sustainability is using resources that are good for people, the environment, and the economy both in the present and the future All countries want to develop but they need to consider the impact of this development. This is being sustainable. Can you explain why a paper bag might be more sustainable than a plastic bag to your partner? Task: write a definition in your book about what sustainability is. It will be added to as we go through the unit. Then explain why a paper bag is more sustainable than a plastic one.	Sustainability environment economy development poverty resources	
Lesson 2	Explain energy production In books - locating a new power plant based on weather data	Link sustainability to energy production	Active prior learning: https://explorify.uk/en/activities/odd-one-out/green-power - odd one out When have you heard the word energy before? Plants, food, people Humans need energy to move, plants need energy from the sun to grow. Energy is strength and power. All work requires energy. In fact, everything we do uses energy - even blinking. Energy for exercise and growth in humans comes from food, energy for plants comes from food and then sun. Energy for the world comes from renewable and non-renewable energy. e.g. wind energy, coal, natural gas, solar energy etc	Fossil fuels Non-renewable	

			<p>Renewable v non-renewable https://www.bbc.co.uk/bitesize/topics/zshp34j/articles/zntxgw X</p> <p>Sort these types of energy into:</p> <ol style="list-style-type: none"> 1. renewable - solar, hydro, wind 2. nonrenewable - fossil fuels <p>Task: write a definition of renewable and nonrenewable in your book. Use maps to locate a new solar or wind farm for the UK and explain your reasoning for the location.</p>		
Lesson 3	<p>Explain energy production in the UK</p> <p>In books - graph analysis</p>	<p>Recall that energy can be produced by burning fossil fuels but they run out</p>	<p>Active prior learning: What if? 'What if all plastic bags were made of paper? What if we stopped using books at school? What if deliveries came without packaging?'</p> <p>Model: Consider why a country may use more or less energy. e.g. population, way of living, availability of resources.</p> <p>In the UK, we use a lot of energy because we have a high population density, we have lots of cities to power, we have lots of people to feed and we have developed technologies such as cars to power. Where do we get our energy from? Burning fossil fuels, wind power and solar power. We do not have enough of each to us one alone so we use an energy mix. What could this mean? Energy mix simply means using different types of resources to produce energy. Some are renewable and some are non-renewable.</p> <p>UK case study: energy mix</p> <p>TTYP: would all energy mixes look the same? Why not?</p> <p>Task: Energy mix data analysis</p>	<p>energy population availability technology fossil fuels energy mix</p>	
Lesson 4	Compare and	Recall that there are different ways to	Active prior learning: Renewable Yes or No? (show chn	sustainability	

	<p>contrast how sustainable two cities are</p> <p>Chromebooks - research Curitiba and Freiberg</p>	<p>produce energy e.g. renewable and non-renewable</p>	<p>pictures and ask if they are renewable or not)</p> <p>Remind chn that sustainability is using resources that are good for people, the environment, and the economy both in the present and the future.</p> <p>Present two case studies locating the places on a map.</p> <ol style="list-style-type: none"> 1. Curitiba - 'the greenest city on earth' https://www.geographyinthenews.org.uk/issues/issue-20/curitiba/ks2/ - chn to research Population growth from 1940-1960 lead to increased traffic and favelas. This lead to increased air, light and water pollution. Jamie Lerner - an architect who became mayor) pedestrianised the city centre in 72 hours to stop cars driving on it and bi-articulated buses were introduced. They were part of an overground metro system which was cheaper and less disruptive to build. They can carry 270 people and in peak times run every 50 seconds. It is used by 85% of the population. It is now used in 300 other cities around the world. 2. Freiberg https://www.internetgeography.net/topics/sustainable-urban-living-freiburg/ - chn can research Set itself a goal to be more sustainable in 1970. They did this through people, the economy and the environment. People - people contributed to the building of the solar powered football stadium, they got financial rewards for composting, using cloth nappies and free travel for big events economy - conferences on sustainability bring people who spend and they provide jobs and they make parking expensive to encourage people to use the tram which is cheaper and better for the environment Environment - bio gas digester creates power using 	<p>environment green comparison contrast</p>	
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			<p>food and garden waste, living buildings, tree planting project, community gardens to grow fruit and veg</p> <p>Task: Complete Venn Diagram as a class about two cities to show how sustainable they are.</p>		
Lesson 5	<p>Use fieldwork to develop understanding of how sustainable my community is</p> <p>Fieldwork (photosheet and data sheet)</p>	Recall how cities are sustainable	<p>Active prior learning: Always, Sometimes, Never 'Fossil fuels are bad'</p> <p>Task: Chn design their own criteria for what would make a sustainable town. They will be using this on their fieldwork to collect data.</p> <p>Go for a local walk and make observations as to how sustainable the town is. Chn should collect data which may include:</p> <ul style="list-style-type: none"> • How many recycling bins are there? • How many houses have solar panels compared to how many do not? • How many trees are there? 	sustainability community data initiative field work	
Lesson 6	Suggest an action plan for how to make the community more sustainable	Recall how sustainable your own community is (school or local area)	<p>Active prior learning: Soapbox - prepare a 30 second presentation to answer the question 'What is sustainability?'</p> <p>Look at the data collected from the community analysis. Discuss how sustainable you think the community is and why. Record it on the first part of the report.</p> <p>Show chn the bromley council website https://www.bromley.gov.uk/sustainability Explain to children that there are many initiatives in place in Bromley and London to make it more sustainable. You are going to do the same thing for your community.</p> <p>Task: Using the data you have collected from the fieldwork, write an action plan for your community highlighting the biggest problems for sustainability and a way to improve it.</p>	sustainability community data initiative	

			<p>You can rank them with how easy it will be to complete the tasks.</p> <p>Reflection: can you add to your definition of sustainability from the beginning of the unit in another colour with what you have learnt?</p>		
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