



Medium Term Planning - Topic: Renewable Energy

Curriculum Intent	
Skills/National Curriculum Links	<p>In addition to working further on objectives from Year __, pupils will be taught, following National Curriculum guidelines, the following this topic:</p> <ul style="list-style-type: none">- Different types of energy- Energy transfers and stores<ul style="list-style-type: none">- Use of fossil fuels- Complications of fossil fuel use- Renewable resources including benefits and disadvantages<ul style="list-style-type: none">- Non-renewable
Spiritual, moral, social, and cultural development	<p>SMSC: Safe working. The importance of renewable energy in real life. Students will reflect on their experiences and apply their understanding to a range of issues. Students will be encouraged to be reflective about their own beliefs and those of others and compare different people's faiths, feelings and values in order to develop their own perspective on life. Students will explore how Science influences the next stage of their education and/or employment.</p> <p>PSHE/British Values: We now introduce the different types of renewable energy used to generate electricity and heat up water. There is the potential for research and group work in this topic. With over 50% of the electricity generated in 2021 being with renewable energy, this topic has enormous implications for our everyday lives. We also live in an area with numerous wind turbines. The students learn about how renewable energy can be used to reduce our greenhouse gases emissions.</p> <p>Skills Builder: Listening (Receiving, retaining and processing info), Speaking (The oral transmission of info and ideas), Problem solving (Find a solution to a situation or challenge), Creativity (imagination and generation of new ideas), Staying positive (The ability to use tactics and strategies to overcome setbacks), aiming high (Set clear and tangible goals), Leadership and teamwork</p>
Numeracy	Calculate energy efficiency, use of tables, interpreting graphs
Literacy	<p>Vocabulary Tier 2: generate, evaluate, impact, arising, reliable, compare, efficient, patterns, trends,</p> <p>Vocabulary Tier 3: non-renewable, fossil fuel, electricity, nuclear power, national grid,</p> <p>Reading: Following a written method and read risk assessments. Students may be directed to the textbook; this could be in lesson or at home on Kerboodle.</p> <p>Writing: Describing and explaining scientific phenomenon, free response writing for describing precautions taken, use of word mat to promote sentence formation.</p> <p>Oracy: inclusion of BEST resources which are research evidence on common misunderstandings in science, effective diagnostic questioning and formative assessment, constructivist approaches to building understanding, and effective sequencing of key concepts that promote metacognitive talk and dialogue.</p>
Becoming future ready	<p>Careers/Employability:</p> <ul style="list-style-type: none">- <i>Climate Scientist</i>- <i>Meteorologist</i>- <i>Environmental engineer</i>
Adaptation	Throughout this topic, quality first teaching will provide differentiation:



QFT/SEND Provision	<p>By product:</p> <p>By resource:</p> <p>By Intervention: by providing different levels of supervision and support</p> <p>By Progressive Questioning: exploring pupils’ understanding through interactive dialogue.</p> <p>By Grouping: according to prior attainment, gender, social preference, preferred learning style.</p> <p>By Task: Pupils should be involved in the identification of targets which are meaningful to them and in the selection of an appropriate task from the given range.</p> <p>By Offering Optional Activities: In class or as homework, to extend learning.</p> <p>This QFT/SEND provision will be explicit within the lesson-by-lesson schemes of work.</p>	
Implementation Curriculum Delivery	To be able to:	
Learning Outcomes (Core Knowledge)	1. Define the term non-renewable	
	2. Describe how fossil fuels are used to generate electricity	
	3. Evaluate the environmental impact arising from the use of fossil fuels	
	1. Describe how nuclear power stations work	
	2. Evaluate the pros and cons of building nuclear power stations	
	3. Evaluate the environmental impact arising from the use of nuclear power	
	1. Describe how wind and water can be used generate electricity	
	2. Be able to compare advantages and disadvantages of wind, water energy	
	1. Understand why some energy resources are more reliable than others	
	2. Describe the environmental impact arising from the use of different energy resources	
	3. Explain patterns and trends in the use of energy resources	
	1. Describe how energy is transferred nationwide	
	2. Explain what is an efficient system is	
	3. Describe what is the national grid and how it works	
	Current learning to be developed in the future within:	<p>Before:</p> <p>Before: At KS2 you may have learnt that energy can be transferred and heat is an example of a form of energy and can be transferred. You may have also learnt some common conductors and insulators, and associate metals with being good conductors</p>
Assessment	Refer to assessment maps for formative and summative assessment opportunities.	
Impact	Attainment and Progress – Refer to assessment results / data review documentation.	