Year 6 Unit Plan: What will we do when the fossil fuels run out? (5 week)

ROWLATTS MEAD PRIMARY ACADEMY

Intent:	Children understand fossil fuels. Children can observe and discuss the impact of fossil fuels on the world today. Children can consider their own impact on the world through this. Children can use their skills of D&T to create a functioning electric car.	
Starter:		
Core Texts:	The Big Book of Science Ideas	
Key Concepts:	empathy, impact, sustainability,	
Outcome Pieces:	Sketch Book Diagrams, Double Page Spread, Persuasive Letter.	
Enrichment:	electric car grand prix	
Subject Area:	**Statements:**	**Key Vocabulary:**
Science	• Can I use a range of sources to research the discovery of electricity? • Can I recognise and draw circuit diagrams using the appropriate symbols? • Can I make a working circuit identifying the effect of changing the components? • Can I compare and give reasons for the variation of loudness of buzzers and the on/off of switches? • Can I investigate how the brightness of a lamp or volume of a buzzer changes with a different number of cells? • Can I understand how voltage change in a circuit effects a buzzer or lamp? • Can I persuade a company to design electric cars?	Fossil fuels, hydroelectric power, power plant, wind turbines, solar power, Conduct, insulate, bulb, wire, battery, switch, buzzer, motor, cell, series, simple circuit, symbol, voltage, brightness, component,
	National Curriculum:	Pupils should be taught to: • associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit • compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches • use recognised symbols when representing a simple circuit in a diagram
Geography	• Can I research fossil fuels? • Do I know where in the world fossil fuels come from? • Can I research alternatives for fossil fuels? • Do I know where in the world is most successful at using renewable energy based on their geographical features?	Fossil fuel, renewable energy, sustainability
	National Curriculum:	Pupils should be taught to: • use maps, atlases, globes and digital/computer mapping to locate countries and describe features studied • human geography, including: types of settlement and land use, economic activity including trade links, and the distribution of natural resources including energy, food, minerals and water
History		
	National Curriculum:	
Design Technology	• Can I design an electric car? • Can I make an electric car?	Design, Make
	National Curriculum:	Pupils should be taught to: • understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] • apply their understanding of computing to program, monitor and control their products.
Art		

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<table>
<tr><td></td><td>National Curriculum:</td><td colspan="2"></td></tr>
<tr><td rowspan="2">Music</td><td colspan="2"></td><td></td></tr>
<tr><td>National Curriculum:</td><td colspan="2"></td></tr>
<tr><td rowspan="2">PSHE</td><td colspan="2">• Can I understand the impact of fossil fuels on the world?
• Can I collect opinions from my local community around alternative fuels?
• Can I understand my own carbon footprint?</td><td></td></tr>
<tr><td>National Curriculum:</td><td colspan="2">See PSHE Subject Leader Document.</td></tr>
<tr><td rowspan="2">Religious Studies</td><td colspan="2"></td><td></td></tr>
<tr><td>National Curriculum:</td><td colspan="2"></td></tr>
<tr><td rowspan="2">Computing</td><td colspan="2">Can I use MovieMaker to present my fossil fuel learning?

E-Safety – Project Evolve
Strand 7 – Privacy and Security
Strand 8 – Copyright and Ownership
See Project Evolve Document.

NCEE Unit 5: 3D Modelling
To use a computer to create and manipulate three-dimensional (3D) digital objects
To compare working digitally with 2D and 3D graphics
To construct a digital 3D model of a physical object
To identify that physical objects can be broken down into a collection of 3D shapes
To design a digital model by combining 3D objects
To develop and improve a digital 3D model</td><td>Micro:bit, MakeCode, input, process, output, flashing, USB
Selection, condition, if… then… else, variable, random
Input, selection, condition, variable, sensing, accelerometer
Compass, direction, variable, navigation
Micro:bit, design, task, algorithm, variable, step counter
Plan, create, code, test, debug</td></tr>
<tr><td>National Curriculum:</td><td colspan="2">Pupils should be taught to:
• select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information
• use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</td></tr>
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Sequence of Lessons			
Subject	**Learning Challenge**	**Outcomes**	**Concepts**
Science	Can I use a range of sources to research the discovery of electricity?	Double Page Spread	Curiosity
Geography	Can I research fossil fuels? Do I know where in the world fossil fuels come from?	Research	curiosity, impact, sustainability, change, responsibility, choices
Geography	Can I research alternatives for fossil fuels? Do I know where in the world is most successful at using renewable energy based on their geographical features?	Geographical study	curiosity, impact, sustainability, change, responsibility, choices
PSHE	Can I understand the impact of fossil fuels on the world? Can I collect opinions from my local community around alternative fuels? Can I understand my own carbon footprint?	Research	curiosity, impact, sustainability, change, responsibility, choices
Computing	Can I use MovieMaker to present my fossil fuel learning?	Movie	
Science	Can I recognise and draw circuit diagrams using the appropriate symbols? Can I make a working circuit identifying the effect of changing the components? Can I compare and give reasons for the variation of loudness of buzzers and the on/off of switches? Can I investigate how the brightness of a lamp or volume of a buzzer changes with a different number of cells? Can I understand how voltage change in a circuit effects a buzzer or lamp?	Exploration of circuits with some book work.	curiosity
D&T	Can I design an electric car? Can I make an electric car?	Sketch book diagrams Twitter- race	curiosity, impact, sustainability, change, responsibility, choices
Science	Can I persuade a company to design electric cars?	Persuasive letter bringing together all of their learning.	curiosity, impact, sustainability, change, responsibility, choices