



Medium Term Unit Planning

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| Topic Name: - Electricity | |
| Learning outcome: <i>Brief description of key takeaways:</i> Children will be able to: i) identify common appliances that run on electricity ii) construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers and add switches iii) recognise some common conductors and insulators, and associate metals with being good conductors | |
| Hook: A Board games session with games that use electricity. | Topic Showcase (e.g. display, museum, performance, presentation) Children create a new electric board game and we have a board game fair |
| Oracy: Children must orally present their circuits and their board games | Key Vocabulary: Electricity, circuit, switch, battery, plug, mains, appliance, device, wire, crocodile clip, bulb, buzzer, connection, power, cell, danger, power, electrocute, plug, socket, safety |
| Key Texts (whole class reading/end of the day book/Talk for Writing Texts etc.): The History of Electricity - Twinkl Thomas Edison Biography Electricity from Billy Elliot | |
| Citizenship/Community Opportunities: <i>(Focus – change in attitude/increase knowledge and awareness/make a difference)</i> Create safety posters to warn people about the dangers of electricity. | |
| Experiences/Visits/Visitors | |



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Main Subjects covered:

Science

Design Technology

Subject 1 Threshold concepts

Science - Work scientifically

This concept involves learning the methodologies of the discipline of science.

Physics - Understand electrical circuits

This concept involves understanding circuits and their role in electrical applications.

Subject 2 Threshold Subjects

Design Technology - Design, make, evaluate and improve

This concept involves developing the process of design thinking and seeing design as a process

Notes:

| Lesson title and learning Intention | Threshold concepts (success criteria) | Milestones (success criteria) | Lesson structure/differentiation |
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| 1. "Electrical Fun" Children will identify common appliances that run on electricity. | <p>Understand electrical circuits This concept involves understanding circuits and their role in electrical applications.</p> | <ul style="list-style-type: none"> Identify common appliances that run on electricity. | <ul style="list-style-type: none"> Children will play a variety of board games that use electricity – operation, buzz wire etc and try to find out how it works. They will also identify common electrical appliances and split them into mains or battery usage. |



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| <p>2. "Understanding Electrical Safety" – children will understand and communicate the dangers of electricity.</p> | <p>Understand electrical circuits This concept involves understanding circuits and their role in electrical applications.</p> | <p>Identify common appliances that run on electricity.</p> | <p>Children will learn about the dangers of electricity and the role played by good conductors. They will make poster to warn others of the dangers to put up around the school and local area.</p> |
| <p>3. "Building a circuit" – to build a simple circuit and be able to present it in a diagram.</p> | <p>Understand electrical circuits This concept involves understanding circuits and their role in electrical applications.</p> <p>Work scientifically This concept involves learning the methodologies of the discipline of science.</p> | <p>Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.</p> <p>Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery.</p> <p>Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables</p> | <p>Children learn the different components that make up an electrical circuit and then use them to set up a variety of working circuits to make a bulb light or a buzzer sound. They will represent this in a labelled diagram to explain what they did and why it worked.</p> |
| <p>4. "Good Conductor, Bad conductor?" Children will investigate which materials are good conductors.</p> | <p>Understand electrical circuits This concept involves understanding circuits and their role in electrical applications.</p> | <p>Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</p> | <p>Children will recreate circuits and add a switch to teach them to break a circuit. Children will test a range of materials to see if they are good conductors and see what they have in common. Children</p> |



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| | | <p>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.</p> <p>Recognise some common conductors and insulators, and associate metals with being good conductors.</p> <p>Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables.</p> <p>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</p> | <p>will predict and record results as part of the experiment.</p> |
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| <p>5. "Showing what you know" – Children design a board game that includes an electrical circuit to make it work.</p> | <p>Understand electrical circuits This concept involves understanding circuits and their role in electrical applications.</p> | <p>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.</p> <p>Recognise some common conductors and insulators, and associate metals with being good conductors.</p> <p>Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables.</p> <p>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</p> | <p>Children to add a switch and a buzzer to their circuit and then design a game that would use or incorporate the circuit.</p> |
| <p>6. "It's Electric" children to create and play with their board games.</p> | <p>Understand electrical circuits This concept involves understanding circuits and their role in electrical applications.</p> | <p>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</p> | <p>Children make and play with their board games, explaining the electrical component and setting a game challenge for participants.</p> |