Year Group: 5	**Term:** Summer	**Topic:** Electrical Systems
NC Links		
To use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. To generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. To understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages].		
Other Curriculum Links		
Science; Computing		
Links to Caedmon Curriculum Drivers		
Aspirations and Careers -embracing challenges that help us to grow -understanding that resourcefulness can help us to be the best version of ourselves -understanding how our learning links to the wider world -having an awareness of the local labour market		
Links to Rights Respecting		
Article 28 – Every child has the right to an education. Primary education must be free and different forms of secondary education must be available to every child. Discipline in schools must respect children's dignity and their rights.		
Links to North East Ambition		
Link a lesson to the career of an electrical engineer/electrician/designer/light technician What does the job entail? What skills are needed in the job? Why do people need aerospace engineers? What day to day tasks would you undertake in this job? Gatsby Benchmark 4 - Linking curriculum learning to careers		
Topic Overview		
Children explore how circuits can be adapted to suit different purposes. They will explore series circuits using standard equipment and then recreate one using conductive adhesive tape. They apply this knowledge to inform design criteria and develop an electronic greeting card.		

Possible Visits/Visitors

Essential Subject Skills to be covered

- I understand that breaks in a circuit stop it from working
- I can lay copper tape down in straight lines and ensure corners are never broken
- I know that at the legs of the LED need to be the correct way round for the circuit to work
- I know that circuits are made up of different electronic components
- I can name key circuit components used to create a functioning circuit
- I know that graphite is a conductor and can be used as part of a circuit
- I can design a card with a working circuit with no breaks
- I can label the LEDs with positive and negative legs
- The positive leg of the LED branches towards the positive side of the battery

Overall Learning Outcomes

By the end of this unit, children will have approached a design brief and developed an idea for a product based on this. They will have developed analytical and evaluative skills by looking at other products and using their skills to inform their work. They will have explored various materials and electronics and discussed the properties of them. They will discuss their ideas through talk and writing. They will develop a range of techniques then make their product safely. They will evaluate their product and discuss strengths and weaknesses of their work. They will adapt and refine their work throughout the design and making process.

Learning Intentions (for use in self assessment at end of topic)

- To make a functional graphite circuit
- To design an electric card
- To create a greetings card
- To make a circuit and integrate it

Suggested Strategies for Recording Learning

- Design and sketch ideas
- Market research into target audience
- Write comments/teacher to write verbal feedback.
- Annotate ideas
- Photograph work