

<b>Year Group: 4</b>	<b>Term: Autumn</b>	<b>Topic: Mechanisms</b>
<b>NC Links</b>		
<ul style="list-style-type: none"> <li>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]</li> </ul>		
<b>Other Curriculum Links</b>		
Science (Forces - Y3 Curriculum); Computing		
<b>Caedmon Curriculum Driver Links</b>		
<b>Aspirations and Careers</b>		
<ul style="list-style-type: none"> <li>-embracing challenges that help us to grow</li> <li>-understanding that resourcefulness can help us to be the best version of ourselves</li> <li>-understanding how our learning links to the wider world</li> <li>-having an awareness of the local labour market</li> </ul>		
<b>Links to Rights Respecting</b>		
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.		
<b>Links to North East Ambition</b>		
<p>Link a lesson to the career of a electrical engineer. What does the job entail? What skills are needed in the job? What educational path do you need to follow to get this job? What types of products will you be working with?</p> <p>Gatsby Benchmark 4 - Linking curriculum learning to careers</p> <p>Gatsby Benchmark 5 - Encounters with employers and employees</p>		
<b>Topic Overview</b>		
<ul style="list-style-type: none"> <li>By the end of this topic, children will have built upon their existing knowledge of mechanisms. They will work independently to product a functioning car chassis using a design shape that is suitable for the project. Children will</li> </ul>		

use their knowledge of forces and air resistance to help them decide the shape design. They will construct their car, test it and draw conclusions and improvements from the results.

### **Possible Visits/Visitors**

Visit from/Video link from a electrician describing their job..

### **Essential Subject Skills to be covered**

- Designing a torch, giving consideration to the target audience and creating both design and success criteria focusing on features of individual design ideas.
- Making a torch with a working electrical circuit and switch.
- Using appropriate equipment to cut and attach materials.
- Assembling a torch according to the design and success criteria.
- Evaluating electrical products.
- Testing and evaluating the success of a final product.

### **Overall Learning Outcomes**

- Identify electrical products and explain why they are useful.
- Help to make a working switch.
- Identify the features of a torch and how it works.
- Describe what makes a torch successful.
- Create suitable designs that fit the success criteria and their own design criteria.
- Create a functioning torch with a switch according to their design criteria.

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

- To learn about electrical items and how they work
- To analyse and evaluate electrical products
- To design a product fit for a set of user needs
- To make and evaluate