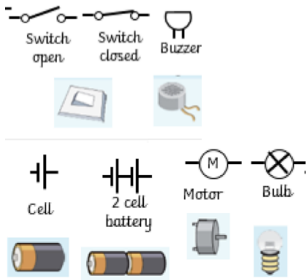
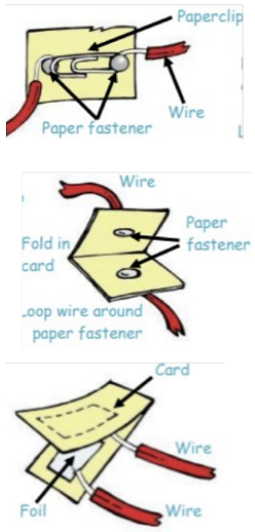
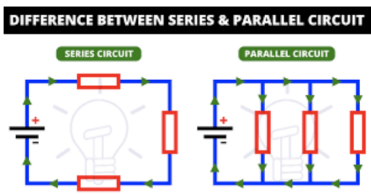


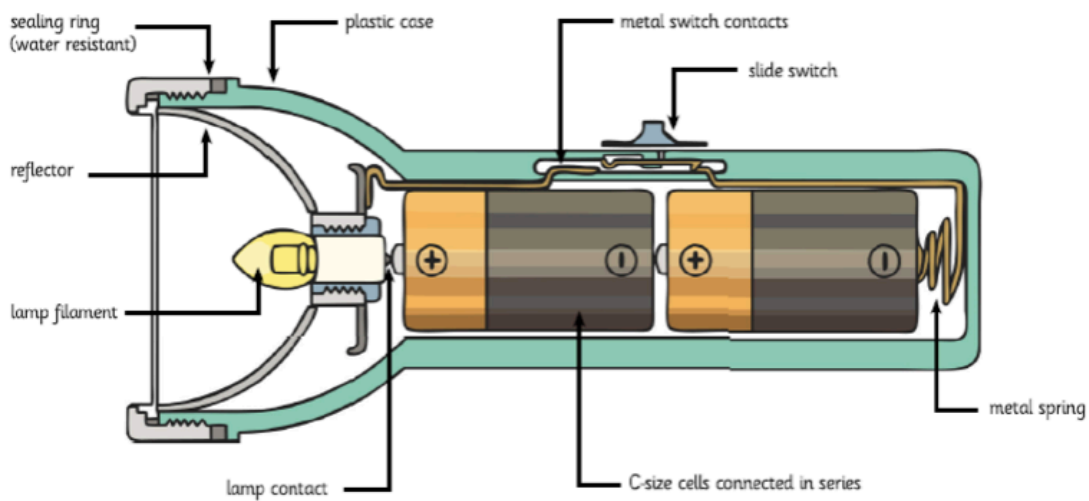
Caroline Haslett Primary School - DT		
Topic: Electrical system	Year 4 - Spring term	Simple electrical circuit

Knowledge	Vocabulary
<ul style="list-style-type: none"> <li>Electricity is a type of energy.</li> <li>Thomas Edison invented the modern light bulb in 1879.</li> <li>Lots of tools use circuits with components including switches and bulbs to make light.</li> <li>Symbols are used to show electrical components.</li> </ul>  <ul style="list-style-type: none"> <li>There are different ways of making homemade switches.</li> </ul> 	<ul style="list-style-type: none"> <li>Insulator-a material, which does not easily allow electricity to pass through it.</li> <li>Conductor-a material, which allows an electrical component to pass through it.</li> <li>Circuit-path through which electricity passes.</li> <li>Component-a part of the electrical circuit e.g. battery or bulb.</li> <li>Input device-controls that are used to control an electrical circuit (switches).</li> <li>Output device-components that produce an outcome (bulbs, buzzers).</li> <li>Parallel circuit-A parallel circuit contains multiple pathways, or branches. Each device in a parallel circuit is on a separate branch. The current flowing through a parallel circuit divides as it reaches each branch.</li> <li>Series circuit-A series circuit is a simple pathway that lets electrons flow to one or more resistors.</li> </ul> 
Design, make, evaluate.	
<ol style="list-style-type: none"> <li>Research the discovery of electricity and invention of the light bulb.</li> <li>Disassemble a torch and identify the circuit within. Experiment with making series and parallel circuits; identify which is best suited to light up a torch.</li> <li>Design a battery operated light (torch) using an exploded diagram. Remember the torch must have a complete circuit for the product to give light.</li> <li>Evaluate against the design brief. Does the torch meet the requirements? If not, what improvements could be made next time?</li> </ol> <ul style="list-style-type: none"> <li>Function-what does it do? How does it work?</li> </ul>	

- Aesthetics- is it attractive? Why and what makes it so?
- Construction-what is it made from and how?

## Skills

- Design using an exploded diagram to show the relationship or order of assembly parts.



- Disassemble products to see how they work.
- Apply appropriate cutting and shaping techniques (working safely) that include cuts or slot outs within the perimeter.
- Apply knowledge from science lessons. What makes a complete circuit? Which type of circuit is the most suitable for the purpose? Why?
- Make improvements and evaluate.

Skill	
Design	<p>Use research for design ideas.</p> <p>Show design meets a range of requirements and is fit for purpose.</p> <p>Begin to create their own design criteria.</p> <p>Have at least one idea about how to create a product and suggest improvements for design.</p> <p>Produce a plan and explain it to others.</p> <p>Say how realistic the plan is.</p> <p>Include an annotated sketch.</p> <p>Make and explain design decisions considering availability of resources.</p> <p>Explain how the product will work.</p> <p>Make a prototype.</p>
Make	<p>Select suitable tools and equipment, explain choices in relation to required techniques and use accurately.</p> <p>Select appropriate materials, fit for purpose; explain choices.</p> <p>Work through the plan in order.</p> <p>Realise if the product is going to be good quality.</p> <p>Assemble, join and combine materials and components with some accuracy.</p> <p>Apply a range of finishing techniques with some accuracy.</p>
Evaluate	<p>Refer to design criteria while designing and making.</p> <p>Use criteria to evaluate the product.</p> <p>Begin to explain how they could improve original design.</p> <p>Evaluate existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose.</p> <p>Discuss by whom, when and where products were designed.</p> <p>Research whether products can be recycled or reused.</p> <p>Know about some inventors/designers/manufacturers of products.</p>
Mechanisms	<p>Make simple circuits with switches.</p> <p>Select the most appropriate tools/techniques.</p> <p>Explain alterations to the product after checking it.</p> <p>Grow in confidence about trying new/different ideas.</p>