



The Acorn Partnership
Marston Montgomery Primary School
Long Lane C of E Primary School

Mechanisms: Years 3 and 4 – Summer

Electrical Mechanisms

Prior Learning

- I have made a simple series electrical circuit in science, using bulbs, switches and buzzers.
- I have cut and joined a variety of construction materials, such as wood, card, plastic, reclaimed materials and glue.

Sticky Knowledge

- I can investigate and analyse a range of existing battery-powered products.
- I can generate, develop, model and communicate ideas through discussion and annotated sketches, thinking about the **user**, **purpose** and **function** of my product.
- I can select from and use tools and equipment to cut, shape, join and finish with some accuracy, following steps needed for making.
- I understand and use electrical systems in my product, such as series circuits using switches, bulbs and buzzers.
- I can evaluate my ideas and product against my own design criteria and identify the strengths and areas for improvement in their work.

Vocabulary	Definition
Annotated sketch	A drawing with labels or notes explaining ideas.
Appealing	Something that looks nice or interesting.
Battery	A small object that stores energy to power things.
Bulb	A small light that glows when electricity passes through it.
Bulb holder	A part that holds a bulb in place and connects it to a circuit.
Circuit	A complete path that electricity travels around.
Crumble	A small computer board used to control electronic projects.
Design	A plan or idea for making something.
Design criteria	A list of things your design must do or include.
Evaluate	To think about how good something is and how it can be improved.
Fault	A problem or mistake that stops something working properly.
Function	What something is designed to do (its job).
Input	Information you give to a computer or device (like pressing keys).
Model	A simple version of something you build to test your idea.
Output	What a computer or device shows or does after it gets input (like lights or sounds).
Program	A set of instructions you give to a computer to make it do something.
Switch	Something you press or flip to turn electricity on or off.
System	Different parts working together to do a job.
User	The person who will use the product.
Wire	A thin metal strand that carries electricity.



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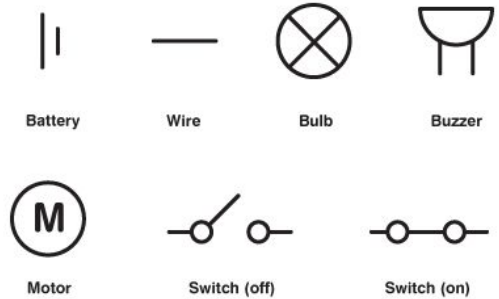
Electrical Mechanisms

What electrical components will I need to create a working circuit?

Wire Bulb Bulb Holder Cell (battery) Battery Holder Switch



What scientific symbols do I use for these components?

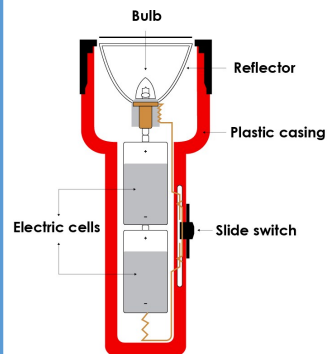


How can I show my ideas? How can I share my design?

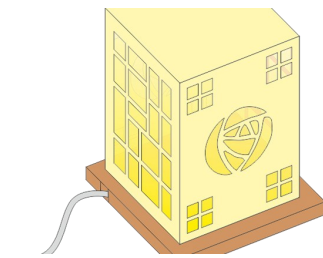
Annotated Sketch

Cross-sectional diagram

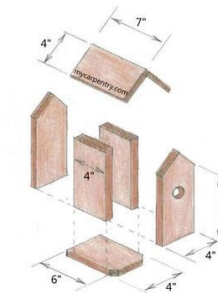
Exploded Diagram



Shows your whole design idea.

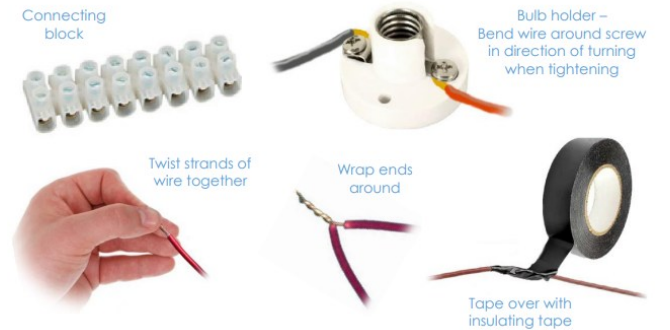


Focuses on one section of your design, in detail.

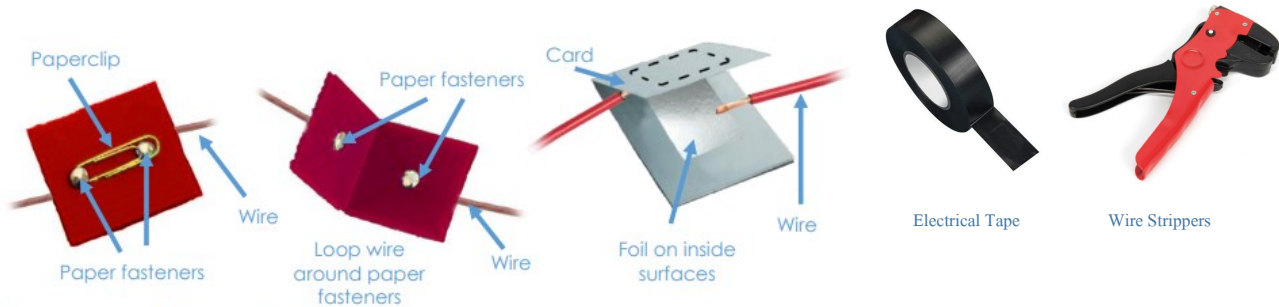


Shows how the different parts fit together.

How can I make secure connections?



How can I make a switch for my nightlight?



Series Circuit Diagrams

