

## Year 4 – Electrical Systems

### What it looks in year 6:

- Investigate electrical sensors and a range of switches.
- Using construction materials to create electrical products.
- Generating innovative ideas by drawing on research.
- Use methods for making secure electrical connections e.g. using automatic wire strippers, tape electrical connections and screw connections.
- Create and follow a design specification.

### Vocabulary (definitions)

Battery – A source of energy.

Energy – The electricity that flows around the circuit.

Electricity – Energy that is used to power electrical items.

Conductor – A material that electricity can pass through.

Insulator – A material that electricity cannot pass through.

Series circuit – A circuit that has only one path for the electricity to go through.

Fault – Something that may cause a break in the circuit.

Parallel circuit – A circuit that has 2 different paths.

Circuit – A path around which electricity can flow.

Components – Parts of the circuit e.g. wires, lamp, switch

Switch – can change the flow of an electrical circuit.

### Sequence of Learning Design, Make, Evaluate

1. To discuss and investigate different examples of battery-powered products.
2. To understand and apply the skills needed to make a working simple electrical circuit.
3. Develop a 'design criteria' for a specific purpose and intended user.
4. To plan the main stages of making, producing annotated sketches to communicate ideas.
5. Make and assemble a torch following previous planning.
6. Evaluate the torch against the design criteria previously agreed.



### Cross-Curricular Links and Cultural Capital:

- Science – know how to construct simple series circuits and have a basic understanding of conductors, insulators and open and closed switches.
- Spoken language – participate in discussion and evaluation of battery-powered products. Ask relevant questions to extend knowledge and understanding. Build their technical vocabulary.
- Computing–design, write and debug programs that accomplish specific goals, including controlling physical systems.
- Art and design – using and developing drawing skills.
- Understand how electrical circuits work and being able to make one.