



Design & Technology

Electricals and
Electronics

Year 4

Summer Term

Statutory Requirements

Create series and parallel circuits

- Design with purpose by identifying opportunities to design.
- Make products by working efficiently (such as by carefully selecting materials).
- Refine work and techniques as work progresses, continually evaluating the product design.
- Use software to design and represent product designs.
- Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for designs.
- Improve upon existing designs, giving reasons for choices.
- Disassemble products to understand how they work.

Prior learning

Science in year 4 summer term.

Electrical Opportunities

In DT we will be applying the skills learned in Science to design a night-light. We will look into the purpose of night lights and look at the different designs that exist and the parts that make up a night light. We will choose the resources needed and using computer programmes to aid the design. Throughout the project, we will improve our design and construct an electric circuit.

Experiences (nightlight)

- Investigate different existing ideas on the market.
- Investigate how circuits work to make something light up.
- Practice using practical skills to experience making a complete circuit.
- Create design ideas to meet needs of target market.
- Make basic product (prototype) and evaluate to decide on improvements for making final design.
- Evaluate the whole process continuously.
- Make own final product with improvements.

Vocabulary & Knowledge (Electricals)

Electrical Components



battery / cell
bulb
buzzer
circuit
motor
switch
wire

Process

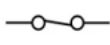


design
design brief
evaluate
functionality
investigate
label
make
plan
problems
purpose
test

Symbols



bulb



closed
switch



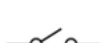
buzzer



motor



cell



open
switch

Word

Definition

electrical

an item that uses electricity to work

conductor

a material that allows electricity to flow through it, e.g. metal

insulator

a material that does not allow electricity to flow through it, e.g. plastic

battery

a cell that provides electrical energy to power a circuit

bulb

part of the circuit, made from plastic or glass, that gives out light when electricity passes through it

switch

part of the circuit that can be opened or closed to allow electricity flow

series circuit

a circuit where the electricity flows along one path