

Electrical Systems

Vocabulary

battery	bulb
buzzer	conductor
circuit	circuit diagram
electricity	insulator
series circuit	switch

Vocabulary

benefit	fine motor skills
fit for purpose	form
function	gross motor skills
research	user

Specific key **vocabulary** for each unit as well as individual lessons, are outlined and referred to on Kapow.

Specific **tools and resources** for each unit and individual lessons, are outlined and referred to on Kapow.

- ✓ Electric circuit component sets: batteries, battery holders, wires, bulb, buzzer and motor (one set per table).
- ✓ Card/cardboard rectangle (one per table).
- ✓ Split pins (two per table).
- ✓ Paper clips (one per table).
- ✓ Link: ['Switched on Kids - Electrical safety in your home'](#) – this is an external website and we do not have control over their content – please check before showing them to the children.
- ✓ Link: [Kapow Primary, Computing, Year 2 What is a computer?.](#)
- ✓ Link: [Kapow Primary, Computing, Year 3, Journey inside a computer.](#)

- ✓ *Presentation: Form follows function.*
- ✓ *Presentation: Developing through play.*
- ✓ *Presentation: Steady hand game.*
- ✓ Devices with internet access (one each or one between two).
- ✓ A range of children's toys to support product analysis (optional – see Main event).
- ✓ Clipboard (optional – one per group, see the extension activity in Main event).

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YEAR 4- Torches		
Skills	Design	<ul style="list-style-type: none"> • Designing a torch, giving consideration to the target audience and creating both design and success criteria focusing on features of individual design ideas.
	Make	<ul style="list-style-type: none"> • 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.
	Evaluate	<ul style="list-style-type: none"> • Evaluating electrical products. • Testing and evaluating the success of a final product.
Knowledge	Technical	<ul style="list-style-type: none"> • To know that an electrical circuit must be complete for electricity to flow. • To know that a switch can be used to complete and break an electrical circuit.
	Additional	<ul style="list-style-type: none"> • To know the features of a torch: case, contacts, batteries, switch, reflector, lamp, lens. • To know facts from the history and invention of the electric light bulb(s) - by Sir Joseph Swan and Thomas Edison.
Vocabulary	See each lesson for key vocabulary to be taught	

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YEAR 6- Steady Hand Game		
Skills	Design	<ul style="list-style-type: none"> • Designing a steady hand game - identifying and naming the components required. • Drawing a design from three different perspectives. • Generating ideas through sketching and discussion. • Modelling ideas through prototypes.
	Make	<ul style="list-style-type: none"> • Constructing a stable base for a game. • Accurately cutting, folding and assembling a net. • Decorating the base of the game to a high quality finish. • Making and testing a circuit. • Incorporating a circuit into a base.
	Evaluate	<ul style="list-style-type: none"> • Testing own and others finished games, identifying what went well and making suggestions for improvement.
Knowledge	Technical	<ul style="list-style-type: none"> • To know that batteries contain acid, which can be dangerous if they leak. • To know the names of the components in a basic series circuit, including a buzzer.
	Additional	<ul style="list-style-type: none"> • To understand the diagram perspectives 'top view', 'side view' and 'back'.
Vocabulary	See each lesson for key vocabulary to be taught	