



Torches

Design, make and evaluate a torch you can use to excavate the rubble of Pompeii

Working towards ...children making their own simple circuit with light and switch, children then build the body of a torch, paying attention to how they can conceal the circuit and add features such as a reflector and handle

Links to Pompeii topic, building torch to excavate the ruins

Prior Learning (skills and knowledge)

Previously, Chn have ...

- Experience of making 3D shapes using card and shaping and joining to build features.

They have learnt about...

- Basic understanding of electricity and electrical products including lights, switches and torches

Essential skills

This time Chn will ...

- Understand how circuits work, identify components and describe what their function in the circuit is.
- Strip wire and connect components together
- Make a working circuit
- Make a range of switches
- Shape paper materials to create a 3D body for the torch
- Shape paper to make a reflector and handle
- Conceal their circuit in their 3D torch
- Decorate torch shape

Links to other curriculum areas

- Maths—knowledge of 2D and 3D shapes, and how to make 3D shapes using 2D shapes.
- Science—circuits, how electricity works in a circuit, conductors and insulators
- Links to Pompeii topic, building a torch to excavate ruins

Key content

- Understand circuits—Show children demonstration circuit, explain what the components are, how they work and what they do. Children draw example of circuit. Introduce different symbols and how these can be used to plan a circuit. Children draw circuit using symbols (including the key) Discussions around different materials, insulators and conductors as well as the voltage on the battery affecting the circuit.
- Make circuits— Demonstrate how to use wire strippers and expose metal wire for circuit, can also use scissors if wire stripper is difficult – Children complete practical work exposing wire. Demonstrate how to join components – adding bulb holder and push-to-make switch. Children complete practical work adding components. Demonstrate adding batteries and bulb and testing circuit to ensure bulb lights up. Children complete practical work adding components.
- Prototype switch—Demonstrate how to make a push switch and toggle switch, children make these and add them (one at a time) to their circuits. Discuss function of a switch and how different types of switches be useful in different types of products.
- Design torch—using images of different torches discuss – *What shapes are these? What are the features of these torches? How does the switch work? What materials have been use? Why? What materials could you use to make your torch? Why? How will you incorporate your switch?* Demonstrate how to draw ideas for torches, include labelling and adding features such as handle, reflector, where circuit will go, how to access and change batteries, what type of switch being used and how it can be secured. Children draw ideas for their torch design
- Make torch—Demonstrate making a cuboid and cylinder shape for the body and attaching circuit so that it's hidden. Demonstrate adding some decoration and features such as a handle and reflector. Children make body of torch and add circuits to it.
- Evaluation—children comment on what they have learned this unit, what skill they were very good at and why and also what they would want to do better. Children also comment on how they feel about their final outcome and discuss their thoughts with others

Key vocabulary to be taught/embedded

Torch, light, wire, bulb, battery, switch, bulb holder, metal, circuit, conduct, travel, electricity, energy, push, current, push to make, push to break, toggle, conductor, insulator, symbols, input, output, battery pack, battery snap, strip, components, features, body, hidden, handle, reflector, decoration

Linked texts

- Electronics for Kids: A Light-hearted Introduction: Play with Simple Circuits and Experiment with Electricity!
- Escape from Pompeii
- Cambridge Brain Box, Primary Plus 2 Electronics