

Edward Peake Church of England Middle School

Design Technology

Topic: Push Together Torch

Year: 5

What should I already know?

- That all products have been designed to a set of criteria.
- That research is done into what the user likes before designs are drawn.
- How to produce design ideas working to a design brief.
- That safety rules need to be followed when working with tools.
- That there is a sequence of steps to follow to make a product.

What will know by the end of the unit?

- There are two main sources of power and examples of each.
- The electronic components that are required to make the torch.
- The circuit symbols for the electric components required to make the torch.
- The circuit symbols for the electric components needed for the torch.
- What a polarised component is and how to join two together.
- What a prototype is and why it is useful to make one before the final product.
- How to make changes to a design idea to make it fit with a set of requirements.
- How to follow a set of instructions to make the push together torch.

Vocabulary

Light Emitting Diode	A small bulb that provides the light for the torch.
Coin cell battery	A round flat battery that provides the power for the torch.
Positive	The electric current is pushed from the positive side of the component.
Negative	The electric current is pushed to the negative side of the component.
Polarised	Where components have a positive and negative side and it matters which way round they are placed in a circuit.
High impact polystyrene	A thermoplastic the push together torch is made from.
Prototype	The first version of something from which other forms are developed.
Evaluation	A review of how things have gone.

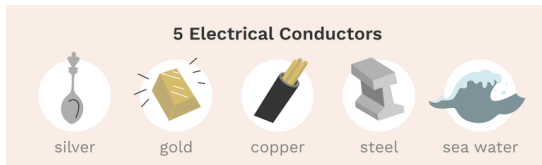
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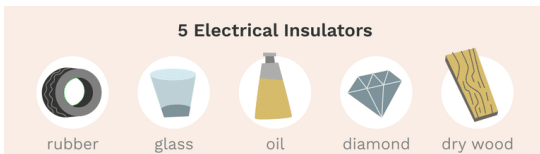
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Conductor—a material that transfers electricity



Insulator—a material that prevents electricity from passing



ThoughtCo.

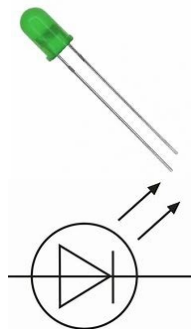
Key information

- A polarised component is one that has a positive and negative side, it matters which way round it is placed in the circuit.
- LED stands for Light Emitting Diode.
- HIPS stands for High impact polystyrene which is the plastic used for the sides of the torch.
- A conductor is a material that lets electricity pass through.
- An insulator is a material that blocks the path of electricity.

Electrical Components and Circuit Symbols

LED (Light Emitting Diode)

Has a positive leg and a negative leg. The positive leg is longer.



Switch off

The switch is usually off.



Coin cell battery

Has a positive side and a negative side, there is a + on the positive side.



Switch on

When you push the two sides of the torch together the legs of the LED connect with the battery turning the light on.



Investigation tasks

1. Find out about other products that are powered by electricity. Are they powered by batteries or a mains supply?
2. Research into different types of electronic components and what they are used for.
3. Can you find out the circuit symbol for a buzzer and put it into a circuit diagram that would turn it on and off?
4. Research into conductors and insulators and where they are used.