

Project: Design and make a torch

Key Learning

- How electrical systems work
- To identify the features of a torch
- How a torch works
- To discuss the positives and negatives of different torches
- What electrical conductors and insulators are
- That a battery contains stored electricity and can be used to power products
- To make a torch with a working electrical circuit and switch
- To select and use appropriate equipment to cut, assemble and attach materials
- How to create a labelled design, showing the individual design features
- To explore, test and evaluate existing torches through questioning,

Design Technology – Y4

Mechanical and Electrical Systems

Knowledge Organiser

Let Me Introduce You To...

Thomas Edison



Thomas Edison was an American inventor who transformed the world with inventions including the lightbulb. In January 1869 Edison

resigned from his job, intending to devote himself full time to inventing things. In 1879, after considerable experimentation and based on 70 years work of several other inventors, Edison invented a carbon filament that would burn for 40 hours—the first practical lightbulb.

Key vocabulary

Word	Definition
<i>electrical</i>	an item that uses electricity to work
<i>conductor</i>	a material that allows electricity to flow through it, e.g. metal
<i>insulator</i>	a material that does not allow electricity to flow through it, e.g. plastic
<i>battery</i>	a cell that provides electrical energy to power a circuit
<i>bulb</i>	part of the circuit, made from plastic or glass, that gives out light when electricity passes through it
<i>switch</i>	part of the circuit that can be opened or closed to allow electricity flow
<i>series circuit</i>	a circuit where the electricity flows along one path

Key Knowledge

How many **electrical** items do you have in your home?

Which items need to be plugged into the electricity?



Which items use **battery** power?



In the early 1900's some homes began to use household **electrical** items, such as washing machines, kettles and sewing machines. How would life be different for you today without **electrical** items in your home and at school?