

Torches : DT : Year 4

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To identify the features of torches and investigate their uses	Children will look at a variety of torches, identifying features and considering their uses. They then either draw and label a diagram of a torch to show its components, or examine and compare a variety of different torches.	<ul style="list-style-type: none"> Can children identify the main features of torches? Can children explain how a torch works? Are children able to explain how a torch's design matches its purpose? 	<ul style="list-style-type: none"> Slides Worksheet 1A/1B/1C A range of different torches (FSD? activity only) Discussion Cards A and B (FSD? activity only)
Lesson 2	To investigate how to make an electrical circuit using different materials for switches	Children will consider what components are necessary in the electrical circuit for a torch, and will explore how to make a simple circuit. They will then make and test a variety of switch designs using a range of common objects and materials.	<ul style="list-style-type: none"> Can children create a simple circuit? Do children know that a variety of metal components conduct electricity? Can children create a switch to use in a torch design? 	<ul style="list-style-type: none"> Slides Bulbs, batteries, connecting wires Components for switches (e.g. paperclips, split pins, drawing pins, staples, bulldog clips, aluminium foil) and other equipment (e.g. cardboard, masking tape, sticky tape, scissors, glue, sticky tack) Challenge Sheets A/B/C Challenge Cards (FSD? activity only)
Lesson 3	To investigate casings for a torch	Children will consider what makes a good casing and what materials they may be made from. They may then either investigate using found objects to house a simple circuit, or make 3-D shapes using nets which may be used as casings.	<ul style="list-style-type: none"> Can children describe what their torch casing will need to be like? Can children create a torch casing using reclaimed materials? Can children create a torch casing using a 3D net? 	<ul style="list-style-type: none"> Slides Worksheet 3A/3B Circuit components (bulbs, batteries, wires) Materials for casings (cardboard tubes, bottles, etc) Joining materials (glue, sticky tape, masking tape, etc) Challenge Cards (FSD? activity only) 3D Shape Nets (FSD? activity only)
Lesson 4	To design a torch for a particular purpose	Children will discuss what the terms 'client', 'design brief' and 'design criteria' mean, before looking at and discussing an example of a client's design brief. In their independent activities, children will choose a client and design a torch for them, thinking about the specific design criteria.	<ul style="list-style-type: none"> Can children generate ideas for their own torch design? Can children apply what they have learnt about torches to their design? Can children design a torch that meets specific design criteria? 	<ul style="list-style-type: none"> Slides Client Cards Design Sheet 4A/4B/4C
Lesson 5	To make a torch to meet the design criteria	After looking at some hints and tips for the making process as a class, children then follow their designs to make their torch for their client, ensuring that they meet the design criteria.	<ul style="list-style-type: none"> Can children follow a design to create a torch? Can children work accurately with a range of materials and components? Can children explain how their completed torch works? 	<ul style="list-style-type: none"> Slides Design Sheets from previous lesson Circuit components (bulbs, batteries, wires etc) Materials for switches (dependent on designs) Materials for casings (dependent on designs) Materials for joins (e.g. masking tape, sticky tape, glue) Scissors, craft knives, pencils, rulers
Lesson 6	To evaluate a finished product	Children will first discuss the importance of evaluating a finished product, before assessing their client's completed torches against the design criteria and answering further evaluative questions.	<ul style="list-style-type: none"> Can children evaluate their product against the design criteria? Can children explain what has been successful, and why? Can children explain what they would do differently if they were to make their torch again, and why? 	<ul style="list-style-type: none"> Slides Finished torches and Design Sheets Evaluation Sheets 6A/6B/6C Evaluation Question Lists (FSD? activity only)