

Progression of skills – Design and Technology (Electrical Systems)

KS2 Only

	Reception	Year 1	Year 2	Year 3	Year 4 Torches	Year 5	Year 6
Design		The Condensed Long-term plan does not include an Electrical systems unit for Year 3 (nor include KS1)			Designing a torch, giving consideration to the target audience and creating both design and success criteria focusing on features of individual design ideas.		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. Understanding the purpose of products (toys), including what is meant by 'fit for purpose' and 'form over function'.
Making					Making a torch with a working electrical circuit and switch. Using appropriate equipment to cut and attach materials.		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.

			Assembling a torch according to the design and success criteria.		Making and testing a circuit. Incorporating a circuit into a base.
Evaluate			Evaluating electrical products. Testing and evaluating the success of a final product.	.	Testing own and others finished games, identifying what went well and making suggestions for improvement. Gathering images and information about existing children's toys. Analysing a selection of existing children's toys.
Technical knowledge			To understand that electrical conductors are materials which electricity can pass through. To understand that electrical insulators are materials which electricity cannot pass through. To know that a battery contains stored electricity that can be used to power products.		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.

			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.		
Vocabulary			Battery bulb buzzer circuit diagram component conductor electrical item electricity electronic item insulator series circuit switch target audience test torch wire		assemble battery battery pack benefit bulb bulb holder buzzer circuit circuit symbol component conductor copper design design criteria evaluation fine motor skills fit for purpose form function gross motor skills insulator LED user