Wentworth Primary School
Key Skills & Knowledge Progression Map
'Striving for Excellence'
Design and Technology: Electrical Systems

For EYFS please see EYFS Progression of Skills Knowledge map

	Foundation	Year 1	Year 2	Year 3	Year 4 Torches	Year 5	Year 6 Steady hand game
Designing					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. Assembling a torch according to the design and success criteria.		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. Making and testing a circuit. Incorporating a circuit into a base.

Evaluating					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					understand that electrical conductors are materials which electricity can pass through. understand that electrical insulators are materials which electricity cannot pass through. know that a battery contains stored electricity that can be used to power products. know that an electrical circuit must be complete for electricity to flow. know that a switch can be used to complete and break an electrical circuit. know the features of a torch: case, contacts, batteries, switch, reflector, lamp, lens.		know that batteries contain acid, which can be dangerous if they leak. know the names of the components in a basic series circuit, including a buzzer. know that 'form' means the shape and appearance of an object. know the difference between 'form' and 'function'. understand that 'fit for purpose' means that a product works how it should and is easy to use. know that form over purpose means that a product looks good but does not work very well. know the importance of 'form follows function' when designing: the product must be designed primarily with the function in mind. understand the diagram perspectives 'top view', 'side view' and 'back'.

Key Vocabulary					• Battery • Bulb • Buzzer • Cell • Component • Conductor • Copper • Design criteria • Electrical item • Electricity • Electronic item • Function • Insulator • Series circuit • Switch • 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