Progression of skills and knowledge 'Electrical systems/Digital world'		Year 5- Steady hand game	Year 6- Navigating the world
Skills	Design	-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'.	-Writing a design brief from information submitted by a client. -Developing design criteria to fulfil the client's request. -Considering and suggesting additional functions for my navigation tool. -Developing a product idea through annotated sketches. -Placing and manoeuvring 3D objects, using CAD. -Changing the properties of, or combining one or more 3D objects, using CAD.
	Make	-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.	-Considering materials and their functional properties, especially those that are sustainable and recyclable (for example, cork and bamboo). -Explaining material choices and why they were chosen as part of a product concept. -Programming an N, E. S, W cardinal compass.
	Evaluate	-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.	-Explaining how my program fits the design criteria and how it would be useful as part of a navigation tool. -Developing an awareness of sustainable design. -Identifying key industries that utilise 3D CAD modelling and explaining why. -Describing how the product concept fits the client's request and how it will benefit the customers.

			-Explaining the key functions in my program, including any additions. -Explaining how my program fits the design criteria and how it would be useful as part of a navigation tool. -Explaining the key functions and features of my navigation tool to the client as part of a product concept pitch. -Demonstrating a functional program as part of a product concept pitch.
Knowledge	Technical	-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 accelerometers can detect movement. -To understand that sensors can be useful in products as they mean the product can function without human input.
	Additional	-To know that 'form' means the shape and appearance of an object. -To know the difference between 'form' and 'function'. -To understand that 'fit for purpose' means that a product works how it should and is easy to use. -To know that form over purpose means that a product looks good but does not work very well. -To know the importance of 'form follows function' when designing: the product must be designed primarily with the function in mind. -To understand the diagram perspectives 'top view', 'side view' and 'back'.	-To know that designers write design briefs and develop design criteria to enable them to fulfil a client's request. -To know that 'multifunctional' means an object or product has more than one function. -To know that magnetometers are devices that measure the Earth's magnetic field to determine which direction you are facing.