LKS2 Design and Technology Knowledge and Skills Organiser

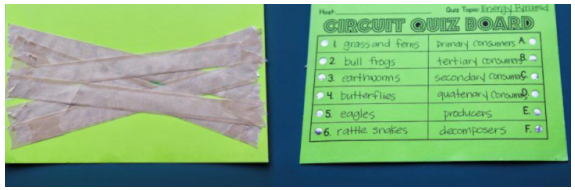
Incredible Inventions

Key Knowledge and Skills

Examples of games using electrical components:

Wire loop game-in this example of a game, the aim is to move the loop around without touching bend wire. If you touch it, the circuit is completed and the buzzer buzzes.

Quiz-in this game, a selection of possible circuits are made, with gaps in between. When the correct answer is made, the circuit is completed, and the buzzer buzzes.



Moving clown-in this activity, the clown's nose is the switch, when it is turned, the switch is activated and the tie moves around on a motor.

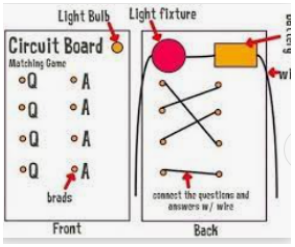
Knowledge:

To understand how individuals in design and technology have helped shaped the world (L.O.7)

To look at examples of manufactured toys and evaluate

Design, construction and evaluation process

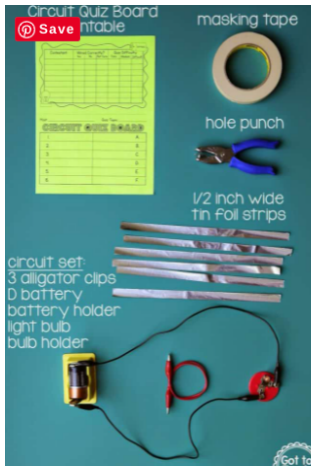
To research and develop designs of imaginative and appealing products that have a purpose, aimed at particular audience (L.O.1)



To develop and communicate my ideas through discussion, annotated sketches and computer-aided design (L.O. 2)

To select from and use a wider range of tools and equipment to use for cutting, joining and finishing, with developing accuracy. (L.O. 3)

To be able to select from and use a wider range of materials and components, including construction materials thinking about which would be suitable and most attractive. (L.O. 4)



Key Vocabulary

Word	Definition
circuit	Where electric components are joined together, using wires, allowing for electric current to flow through.
current	The flow of electricity around the circuit
components	Different parts of the whole circuit, for instance bulb, battery, buzzer, switch
switch	A device for making and breaking the connection in an electric circuit.
motor	An electric component that changes chemical (battery energy) into movement. It rotates around when current flows through.
design	The part of the process where ideas are mapped out, thinking about purpose and appearance, using ideas from research. The drawing may have annotations to add extra detail.
construct	The process of using selected tools and equipment to make the product in a more accurate way.
modify	To make changes to improve, based on observation
evaluate	To consider the success of the product against the design and purpose, thinking about audience, appearance and function. This can also mean thinking about where improvements could be made in making the product.

their appeal and function.  To begin to understand and use electrical systems in my product (L.O. !0) <u>Problem solving:</u> Check the common errors listed below: •Check batteries are correct way round in the cage. •Ensure the wire is secure in terminal block. •Check that the batteries are working (try in circuit that is working). Check additional components are functioning by replacing them one at a time, e.g. buzzer and battery cage.	To evaluate my ideas and products against their own design criteria and begin to consider the views of others to improve my work.(L.O. 11) To begin to apply their understanding of computing to program, monitor and control their products. (L.O. 12)		