St White's Primary School – SUBJECT

UKS2	Topic: Electrical systems	Summer

What should I already know?

- How to use computer control software (Crumble).
- How to write and modify a program to make a light turn on or flash on and off.
- The essential characteristics of a series circuit and experience of creating circuits.

Design Technologists are INVENTORS!
Design Technology allows us the chance to identify problems and plan, design, make and evaluate solutions.

Technical vocabulary

Program	a sequence of instructions that can be used to control electrical components.
Microcontroller	a device that can be programmed to control how an electrical product operates.
Light emitting diode (LED)	an output device that glows when electricity is passed through it.
System	a set of related parts or components that together achieve a desired outcome.
Output devices	components that produce an outcome e.g. bulbs, motors and buzzers.
Input devices	components that are used to control an electrical circuit e.g. switches.
Process	how a computer program controls one or more output devices.

Products that use computer control

Some products respond to changes in the environment using a computer control program.
For example, garden lights turn on when the computer control programs senses that it has gotten dark.

Crumble controllers

A crumble controller follows a program. A program is simply a list of instructions that the Crumble will follow. The Crumble will 'run' a single line (i.e. a block) of a program, one at a time, starting from the top.
You can program a crumble by using a USB to connect I to a computer.

Sensors and switches

Sensor - a device which detects or measures a physical property and records, indicates, or otherwise responds to it.
e.g. a motion sensor.
Switch - a device for making and breaking the connection in an electric circuit.
e.g. a push to make switch.

Inputs and outputs

Input devices put information into the computer (e.g. microphones and keyboards).
Output devices allow information to be sent out of the computer (e.g. speakers and printers).

Hand-made switches

Push switch
Used to complete a circuit as long as the switch is pressed.
How to: a fastener is pushed through the centre of each side of a piece of folded card then stripped back wires are connected to the fastener to complete the circuit.
Toggle switch
Either on or off; ideal for using with a powered vehicle so you don't have to hold the switch on all the time.
How to: two holes are made in a piece of card, the length of a paper clip. Then fasteners are put through both holes one of which also attaches the paper clip to switch.