

KNOWLEDGE ORGANISER – St Gregory’s RC Primary School

Topic: Design Technology

Year Group: 6 Spring

Strand: Electrical Systems - Monitoring and Control

What I should already know	Sticky knowledge	Key skills
<ul style="list-style-type: none"> • I know how to construct a simple electrical circuit and incorporate this into a product. • I know that electricity is a type of energy that is used to power lots of things. • I know the difference between push-to-break switches and push-to-make switches • I know that electricity can flow through wires and cables. It can be stored in batteries. • I know that some materials conduct electricity and others do not • I know how to create a design specification before designing a product based on its function, appearance and audience. • I know how to test and evaluate a product by highlighting their strengths and improvements. 	<ul style="list-style-type: none"> • I know how electrical sensors operate and how they work. • I know some examples of famous inventors who have changed history. • I know how to avoid making a short circuit • I know how to make a product which uses an electrical circuit and sensors. • I know the input, output and process of my electrical circuit. 	<p>Design</p> <ul style="list-style-type: none"> • I can use exploded diagrams and cross-sectional diagrams to communicate ideas • I can follow and refine original plans <p>Make:</p> <ul style="list-style-type: none"> • I can produce a detailed list of components, materials and tools needed. • I can refine my product (review and rework/improve) <p>Evaluate:</p> <ul style="list-style-type: none"> • I can discuss how well the finished product meets the design criteria, after testing and discussing the outcomes. • I can investigate key events and individuals in design technology. <p>Technical knowledge:</p> <ul style="list-style-type: none"> • I can evaluate and investigate a variety of switches and circuits to see which is more suitable for my product. • I can use electrical systems including motors and switches • I can program, monitor and control using ICT.
<p align="center">Design brief</p>		
<p>Can you make a garden light that will help brighten up our school Peace garden during the winter months? You need to consider how you are going to turn the light on and off so that we don't waste electricity.</p>		

Vocabulary		Diagrams/Pictures
Closed switch	When a switch is positioned such that electricity can flow through it.	
Computer control input	When a switch sends a signal to a computer control box to activate a sequence of events.	
Input device	Components that are used to control an electrical circuit.	
Micro-switch	A small switch that is sensitive to motion. It is used in an automatic monitoring system.	
Output device	Components that produce an outcome e.g. bulbs and buzzers	
Open switch	When a switch is positioned such that electricity cannot flow through it.	
Parallel circuit	Components are positioned on different parts of the wire therefore if a component breaks, the others will still work.	
Push-to-break switch	These switches turn the circuit off when pressed.	
Reed switch	A switch that operates with a magnet.	
Timer system	A system which follows a sequence of events within a specific time. An example of these are traffic lights.	
Tilt switch	A switch that works when held at an angle.	