DT – Year 5 Autumn 2
Electrical Systems-Flood Warning System

(Previous knowledge –basic electrical systems)

Vocabulary		
Tier 1	Tier 2	Tier 3
water	circuit	Series circuit
switch	sensor	conductivity
flood	current	Parallel circuit
battery	voltage	resistor
alarm	connection	Monitoring system

don't know | I know this word | I can use it in a sentence

Health and Safety

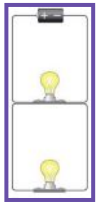
-Remove any jewellery and tie back long hair. Wear an apron.
-Do not put fingers or objects in outlets.
-Never use anything with a plug, wire or cord around water.
-Keep metal objects away from electrical heat sources – e.g. knife away from toaster.
-Never pull a plug out by its cord.
-Follow electrical signs and guidance carefully.
-Return all equipment to the correct zoned areas of the classroom/ workshop.
-Remember that electricity can cause burns, shocks, serious injury & even death.

Project: Flood Warning Systems

This half term you will learn:
• the key components used to create a functioning circuit;
• the difference between series and parallel circuits;
• why breaks in a circuit will stop it from working;
• to make a working circuit, select, and use the appropriate materials;
• to create a flood warning system referring to the design criteria;
• to map out where different components will go in the system
• design a flood warning system with a simple electrical circuit;
• to create a labelled design showing positive and negative parts in relation to the LED and the battery.

Technical Knowledge

This is a diagram of a **series circuit** – the electrical current flows through every component in the circuit – the switch, battery and bulbs.



This is a diagram of a **parallel circuit** – this has two or more paths for the electrical current to flow through. If one loop is disconnected then the other still has power.

Which type of circuit will you use in your flood warning system?

Key Knowledge

Electricity travels at the speed of light, that's 300 million metres per second! However, the electricity that flows through your home and appliances you use is much slower, about 1/100th the speed of light.

A traditional light bulb has a filament that heats up and glows when an electrical current runs through it. Up to 90% of the energy used goes towards producing the heat.

Useful Resources

Circuit construction kit:
https://phet.colorado.edu/sims/html/circuit-construction-kit-dc/latest/circuit-construction-kit-dc_en.html