



Design and Technology Topic: To design, make and evaluate an alarm box.

Year: 4 Term: Autumn 2

Key Knowledge/Content:

- I know that Antoine Redier was the inventor of the adjustable mechanical alarm clock.
- I know the key components of alarm systems are electrical circuits, buzzers, switches, batteries and light systems.
- I know switches can be turned on and off.
- I know how to assemble key parts of my circuit to create a functioning alarm system of my choice.
- I know how to use computer technology to design my alarm system, identifying key parts.

Links to:

Prior learning:

The children designed, made and evaluated a light up picture.

Future learning:

The children are going to design, make, and evaluate a submarine.

Key vocabulary with definition:

Prior vocabulary:

- Graphics - An image created by drawing or painting.
- Birds-eye view – An aerial view taken from the sky looking down.
- Input - Take a signal from the physical or 'real world' and turn it into an electronic signal that a process device.
- Output – Take the signal from the process device of a system and turn it back into a physical or 'real-world' signal, such as light or sound.

New vocabulary:

- Prototype- A test, or original, model of a product or a technology from which improvements, upgrades or fundamental changes can be made.
- Element- A substance that cannot be broken down into any other substance.
- Adjustable- A small change.

By the end of this unit

All children can: identify components that are required to make a mechanical system and **design** a product with a specific user.

Most children can: demonstrate how to create a mechanical system and **explain** the functions of each component.

Some children can: demonstrate and **explain** why they have designed their product for that specific user and **compare** it to an already existing product.

Background understanding for teachers and parents:

The children are going to design, make and evaluate an alarm box. The children will be exploring and looking at components of a simple mechanical system.

Curriculum Driver (one):

Communication

Evidence outcome:

The children will be communicating their ideas and comparing to others. When evaluating the final product, children will discuss how they could improve their product.