Design and Technology Knowledge Organiser

Year 6: Summer Term – Computer Design | Computer Control

Design, make and evaluate a robot with a unique USP (unique selling point) if the design was put on the market.

Key Knowledge

Learn this information

Output

Something that is controlled by the program such as sounds, lights, display, and turning motors on and off.

- Light Block
- Play Sound
- Display Background
- Display Block
- Display Calculations
- Display Size

Input

Information that a computer or device receives.

- Sound Sensor Change
- Number Input
- Text Input
- Display Input
- Random Input

Events (Wait for)

A program can be told to wait for something to happen before continuing. They can wait for a specific amount of time, or wait for something to be detected by a sensor.

Loop

Students can program actions to be repeated either forever, or for a specific length of time.

Functions

Functions are a group of actions that are to be used together in specific situations. For example, the group of blocks that could be used to make a light blink would together be called, "the blink function"

Key Skills

Practise and perform these skills

Use the range of inputs on Lego We Do 2.0 to program your own robot.

Start Block
When used, always placed at the beginning of a program string. Press on it to start the program string you have written.

Wait For
Use this block to tell the program to wait for something to happen. It can wait for a set amount of time or for input from a sensor. This block always requires input in order to work properly.

Repeat Block
Use this block to repeat actions. Blocks placed inside the Repeat Block will be looped. This can also be called the "loop block." The loop can be repeated forever, for a certain amount of time, or until something happens.

Play Sound
Plays a sound. The sound is chosen from a list available within the software. You can choose a sound using a numeric input. Choose sound number 0 to play a sound that you have recorded yourself.

Light Block
Lights up the LED on the Smarthub in a specific color. The color can be changed with a numeric input between 0 and 10.

Key Vocabulary

Understand these key words

Vocabulary	Definition
Algorithm	A set of instructions to complete a specific task.
Conditions	Conditions program actions that are to be executed only under certain circumstances.
Debug	Identify and remove errors from computer programs.
Decomposition	Breaking down a problem into a number of smaller problems which can be more easily addressed.
Evaluate	Think reflectively and make changes to improve.
Generalise	Detect patterns in computer code
Input	An input is information that a computer or device receives.
Modify	Make alterations to the design throughout the design and production process.
Output	Output is something that is controlled by the computer program which has been written.