# Y7 DTE HT1

# KNOWLEDGE ORGANISER

## HT2 Y7 – CODING PROJECT

This Project introduces you to the beginnings of coding and how it can be applied to projects and achieve physical outcomes. This is useful in DTE as it teaches us how we can solve problems that we may encounter and is used at an industry level in the design world today.

**micro:bit**

## WHAT IS "CODING"

Coding is **a list of step-by-step instructions that get computers to do what you want them to do**. Coding makes it possible for us to create computer software, games, apps and websites. Coders, or programmers, are people who write the programmes behind everything we see and do on a computer

# PYTHON

## WHAT IS PYTHON ?

Python is **a computer programming language often used to build websites and software, automate tasks, and conduct data analysis**. Python is a general-purpose language, meaning it can be used to create a variety of different programs and isn't specialized for any specific problems.

# WHAT ARE MICROBITS

The micro:bit helps you understand how computers work. When you type on your laptop or touch the screen on your phone, you're using an **input** device. Inputs allow computers to sense things happening in the real world, so they can act on this and make something happen, usually on an **output** like a screen or headphones. In between the input and the output, there is the **processor**. This takes information from inputs like buttons, and makes something happen on outputs, like playing a song in your headphones.

## INPUTS AND OUTPUTS

All programs need data to be added to or removed from code. Data entered into a program, either by the programmer or digitally, are referred to as **inputs**. These inputs are stored in variables and used to run the program.

In order to keep the user informed about what is happening inside the program, a programmer may choose to include **outputs**. This is where the data from the program is shown to the user, either on screen or in the form of a physical output such as printouts or signals.

## PROCESSORS

A processor (CPU) is **the logic circuitry that responds to and processes the basic instructions that drive a computer**. The CPU is seen as the main and most crucial integrated circuitry (IC) chip in a computer, as it is responsible for interpreting most of computers commands.

## HOW CODING CAN HELP YOU

The ability to code gives a new perspective to problem-solving. From beginners to professionals, anyone will tell you that writing codes can get quite challenging. Through coding, you learn to quickly fix and try again in different ways when something doesn't work out. Coding also equips you with the ability to stick with a problem and work on finding a solution. This problem-solving technique is transferable to a lot of other fields.

## ORACY OPPURTUITIES

How is coding important in design ?

What is the future of coding ?

What areas of design use coding ?

How is coding useful is design & technology ?