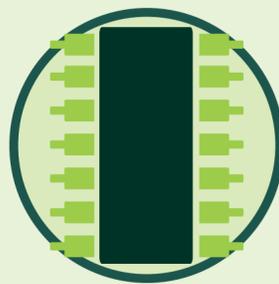


Programmable components

What are programmable components?

- Components that can be programmed to perform functions such as responding to sensors, timing and counting.
- They're used to add 'intelligence' to products.
- They have different ports to connect input and output devices.
- An example is a microcontroller – a small computer on a chip.



14 pin
microcontroller

Why are they used?

- Can be adapted to many different uses.
- Can be reprogrammed thousands of times.
- Can perform complex functions.
- Can be connected to many different input and output devices.
- Smaller circuits as one programmable microcontroller can replace several non-programmable components.

Microcontroller
circuit



Where are they used?

Used in a wide range of products such as:

- robots
- children's toys
- alarms
- home appliances, such as dishwashers and washing machines
- smart lighting

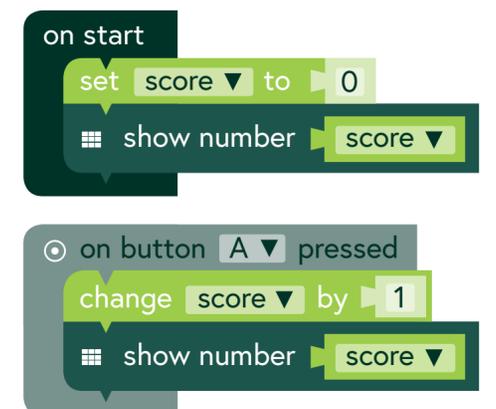


Washing machine

How are they programmed?

By using:

- flowchart software
- block based editors
- text based programming languages e.g. BASIC, Python, C++



Block based editor counter program