

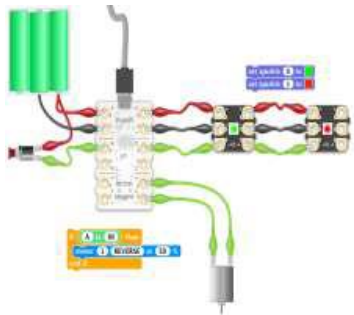
What we will learn

Selection in Physical Computing

Programming is when we make and input a set of instructions for computers to follow.

Microcontrollers are devices that can be programmed to control output devices that are connected to them.

We use algorithms which we can plan, model, trial and debug, in order to create accurate command sequences, involving multiple output devices (e.g. LEDs and motors).



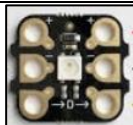
Microcontrollers, LEDs and Motors

Microcontrollers: A microcontroller is a small device that can be programmed to control devices that are connected to it.

One brand of widely used microcontroller is called a Crumble controller, which can be used to control many things, e.g. LEDs and motors.



LEDs: One type of LED light, controlled by a Crumble controller, is called a Sparkle.



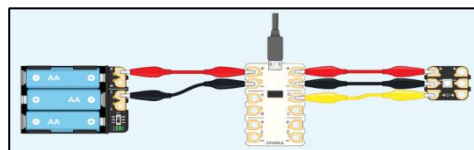
Motors:

-Motors are another output device. A motor can start, stop, spin forwards, spin backwards, and go at different speeds.



Creating Circuits:

The USB port connects the microcontroller to a computer.



E-safety

We teach our children to be SMART online

S Stay Safe: Don't give out your personal information to people / places you don't know. Illustration: A man and a woman talking.

M Don't Meet Up: Meeting someone you have only been in touch with online can be dangerous. Always check with an adult you trust. Illustration: A boy and a girl talking.

A Accepting Files: Accepting emails, files, pictures or texts from people you don't know can cause problems. Illustration: A computer monitor with a virus icon.

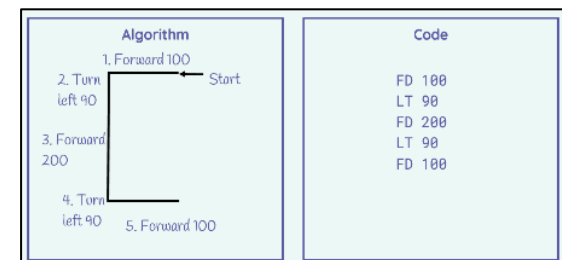
R Reliable?: Check information before you believe it. Is the person or website telling the truth? Illustration: A computer monitor with a question mark.

T Tell Someone: Tell an adult if someone or something makes you feel worried or uncomfortable. Illustration: A computer monitor with a hand pointing to a speech bubble that says 'Follow these SMART tips to keep yourself safe online!'.

Sequencing and Algorithms

A **sequence** is a pattern or process in which one thing follows another.

We design **algorithms** (sets of instructions for performing a task) to help us program the sequence that we require to achieve our desired outcomes.



Programming is the process of keying in the code recognised by the computer (using your algorithm).

