



Programming A – selection in physical computing

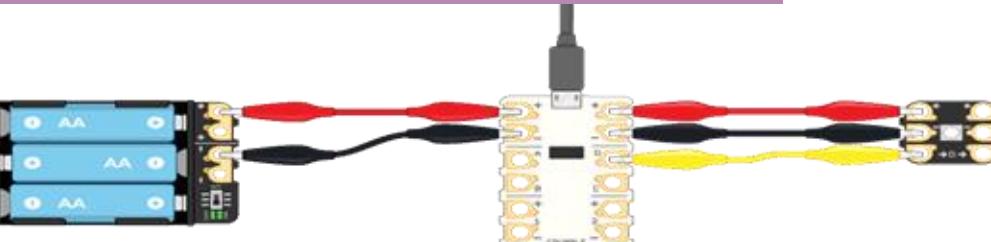
Sticky learning

Year 3/4/5

- I know how to plan a simple program by choosing the order of commands in a sequence.
- I know how to design an algorithm and can explain it.

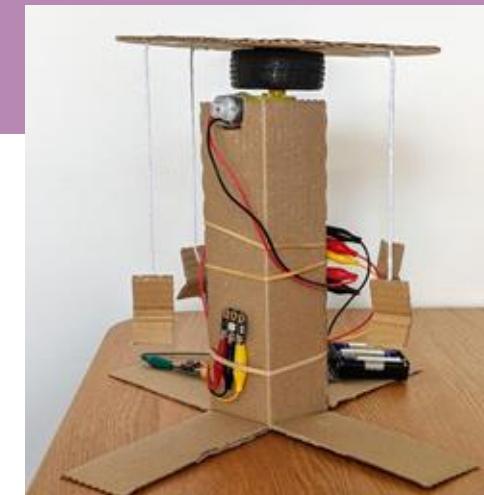
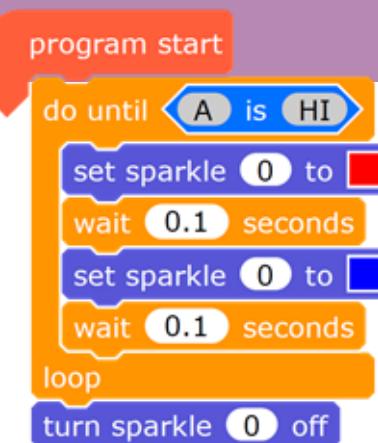
Year 6

- I know commands have an outcome
- I know sequences can be combined
- I know a program has a start



New Knowledge

- I know how to control a simple circuit connected to a computer by programming a microcontroller to make an LED switch.
- I know how to write a program that includes count-controlled loops that control an output.
- I know a loop can stop when a condition is met and how to design one.
- I know a loop can be used repeatedly to check a whether condition has been met by identifying a condition and intent action in my project.
- I know how to design and make a physical project by drawing a design and writing an algorithm.



Key Vocabulary

Microcontroller	A tiny computer that can control other parts, like lights or motors, by following a program.
Components	The parts you can connect to a microcontroller, such as lights, buttons, and motors.
Infinite Loop	A set of instructions that keeps repeating forever until you stop it.
Output Component	Something that shows what the microcontroller is doing, like a light, sound, or movement (e.g. an LED or motor).
Motor	A part that turns or moves when it gets electricity from the microcontroller.
Count-Controlled Loop	A loop that repeats a set number of times (for example, "do this 5 times").
Crumble Controller	A small microcontroller used in schools to make projects – it can control motors, lights, and sensors.
Crocodile Clips	Metal clips used to connect wires safely between components and the Crumble controller.
LED (Light Emitting Diode)	A small light that turns on when electricity flows through it – often used to show outputs.
Input	Something that sends information to the microcontroller (like a button press or a sensor).
Output	Something that shows what the microcontroller is doing (like turning on a light or spinning a motor).
Condition	A rule or test that the microcontroller checks, like "if the button is pressed".
Selection	When the program makes a choice based on a condition (for example, "if this happens, do that").
Action	What the program actually does – for example, turning on a light or playing a sound.