

Lesson 2: Combining Output Devices

Computing

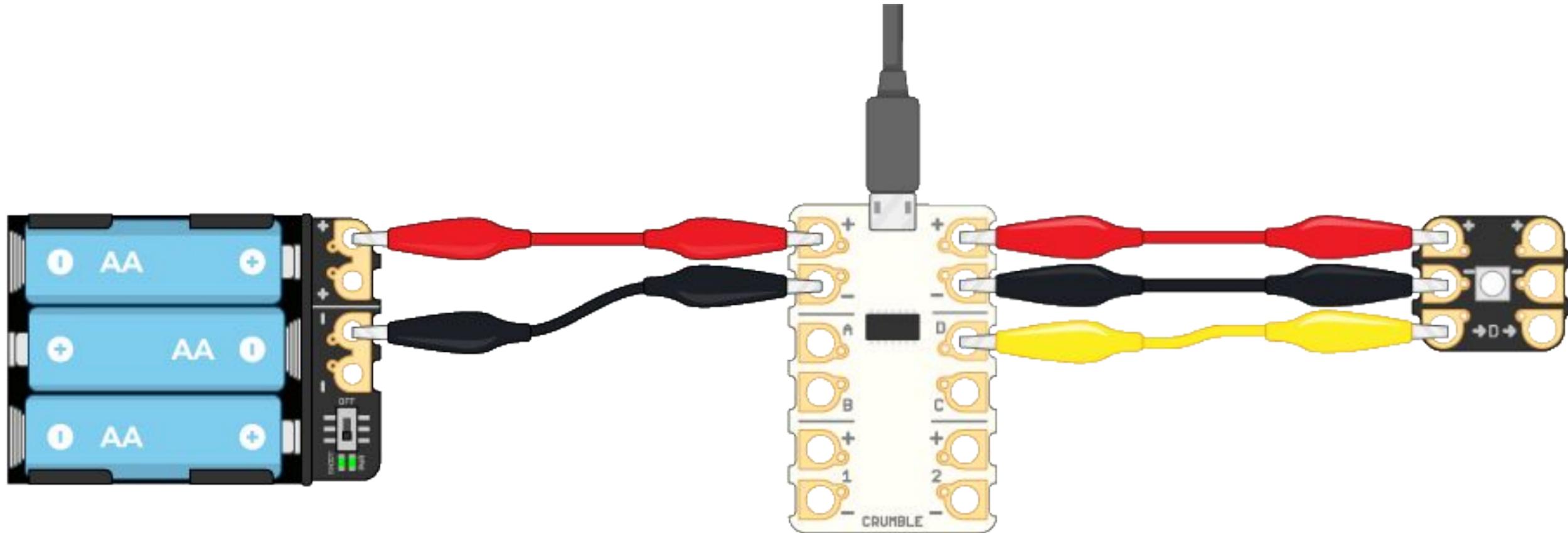
Selection In Physical Computing

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Materials from the Teach Computing Curriculum created by the National Centre for Computing Education



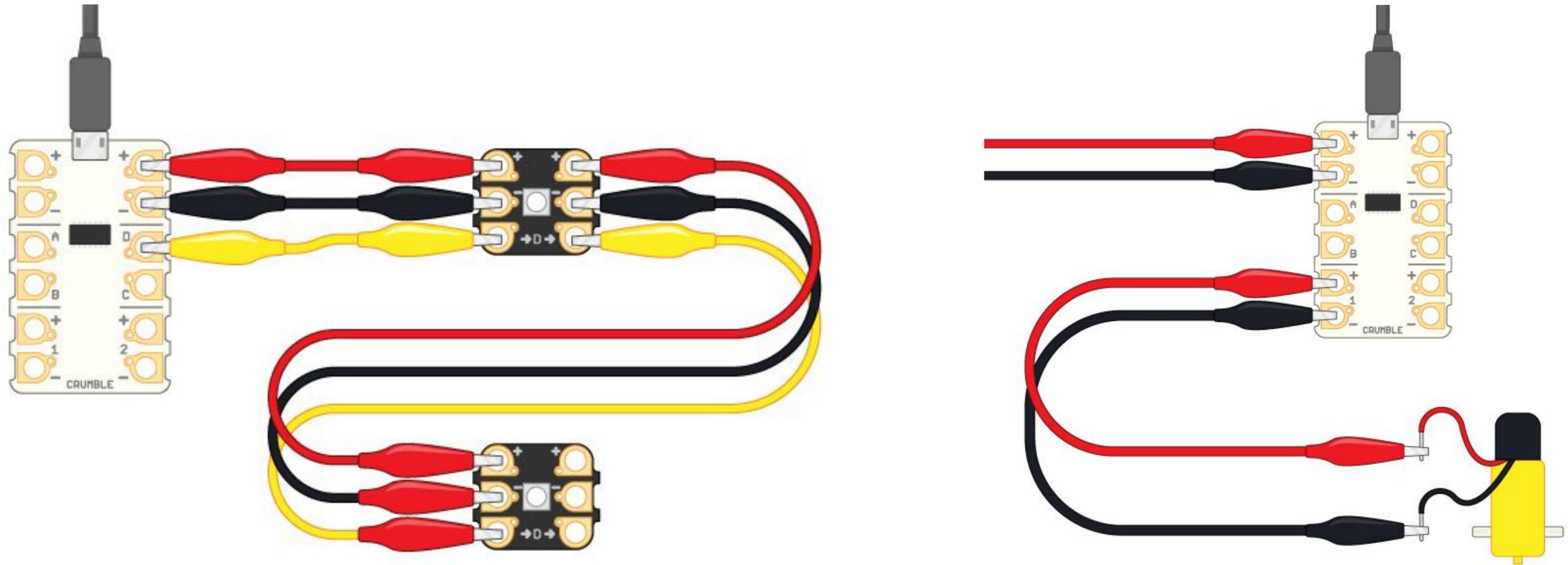
Task 1 - Connections



Ensure the Crumble and Sparkle are the same way around as the picture above.



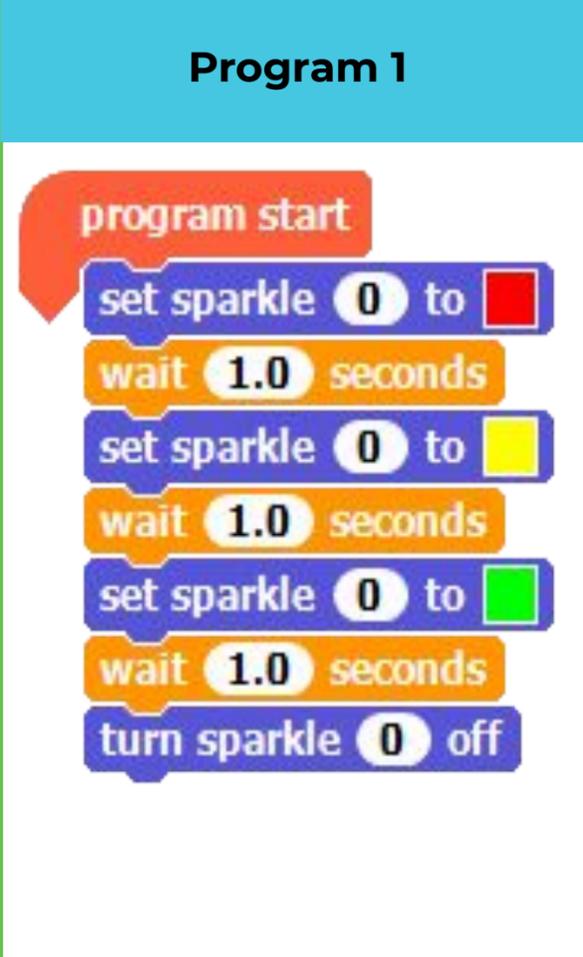
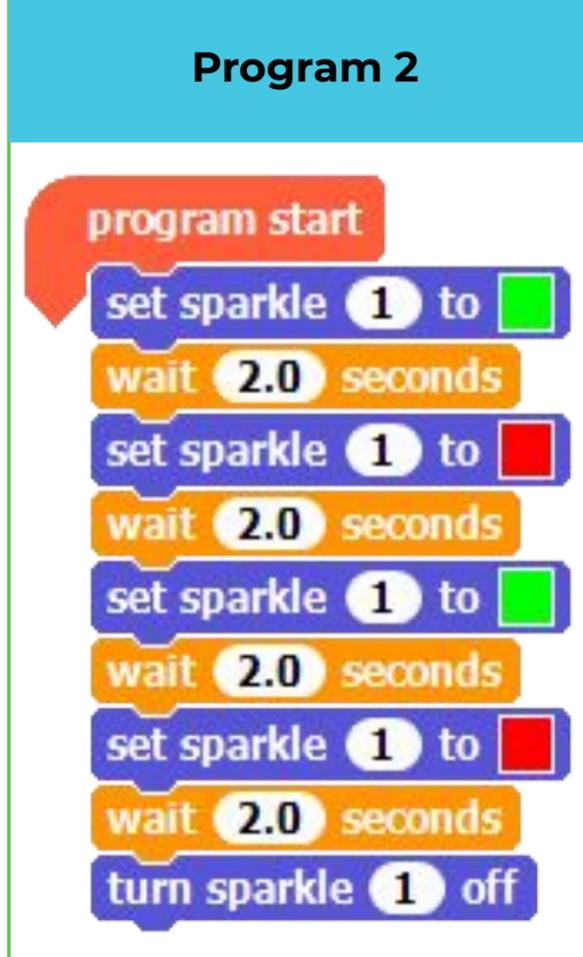
Task 1 - Connections



Connect at least two output devices to the Crumble Controller.



Task 2 - Controlling output devices

Program 1	Program 2	Program 3	Program 4
 <pre>program start set sparkle 0 to red wait 1.0 seconds set sparkle 0 to yellow wait 1.0 seconds set sparkle 0 to green wait 1.0 seconds turn sparkle 0 off</pre>	 <pre>program start set sparkle 1 to green wait 2.0 seconds set sparkle 1 to red wait 2.0 seconds set sparkle 1 to green wait 2.0 seconds set sparkle 1 to red wait 2.0 seconds turn sparkle 1 off</pre>	 <pre>program start motor 1 FORWARD at 50 % wait 1.0 seconds motor 1 FORWARD at 75 % wait 1.0 seconds motor 1 REVERSE at 75 % wait 1.0 seconds motor 1 STOP</pre>	 <pre>program start set sparkle 0 to red set sparkle 1 to blue motor 1 FORWARD at 75 % wait 5.0 seconds turn sparkle 0 off turn sparkle 1 off motor 1 STOP</pre> <p>Source: Crumble software</p>

What happened when you ran each program?



Task 3 - Sequence outputs

Task : **Use two different output devices to create a light effect for a disco.**

Design:

- Choose between two flashing lights or a flashing light that moves using a motor.
- Select the commands for each output device.
- Put the commands in sequence.



Programming output devices

Which parts of this algorithm have been implemented in this program?

Note down the sequence.

```

program start
motor 1 REVERSE at 75 %
set sparkle 0 to [green]
wait 1.0 seconds
turn sparkle 0 off
wait 1.0 seconds
  
```

Source: Crumble software

Sequence	Command
	Change sparkle 0 to green
	Change sparkle 0 off
	Pause for 1 seconds
	Pause for 1 seconds
	Change sparkle _ to _____
	Change motor 1 to clockwise. Set speed to 75%.
	Change motor _ to _____. Set speed to __%.
	Change sparkle _ to _____
	Change motor 1 off



Task 5 - Count Controlled loops

Create a program which includes at least one count controlled loop.



Source: Crumble software

