

A - Starting Lights

Learn how to use the Sparkle module by creating some starting lights for a race around the planet.

3,2,1...

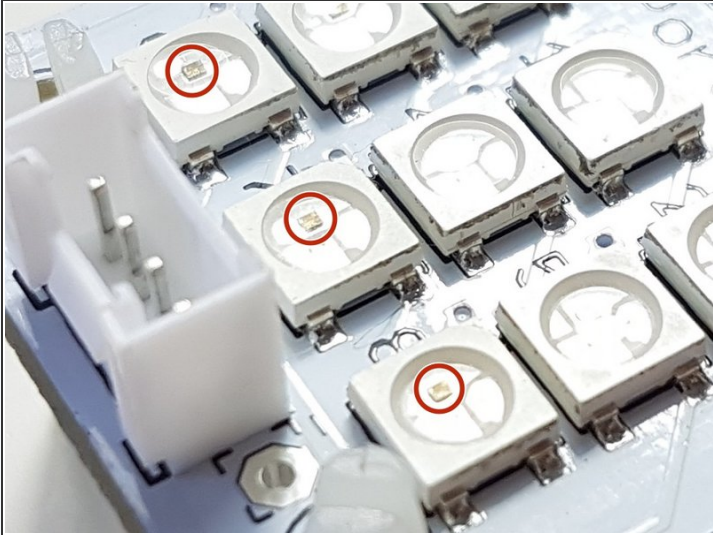
GO!

INTRODUCTION

Learn how to use the Sparkle module by creating some starting lights for a race around the planet.

Step 1

What are Sparkles?



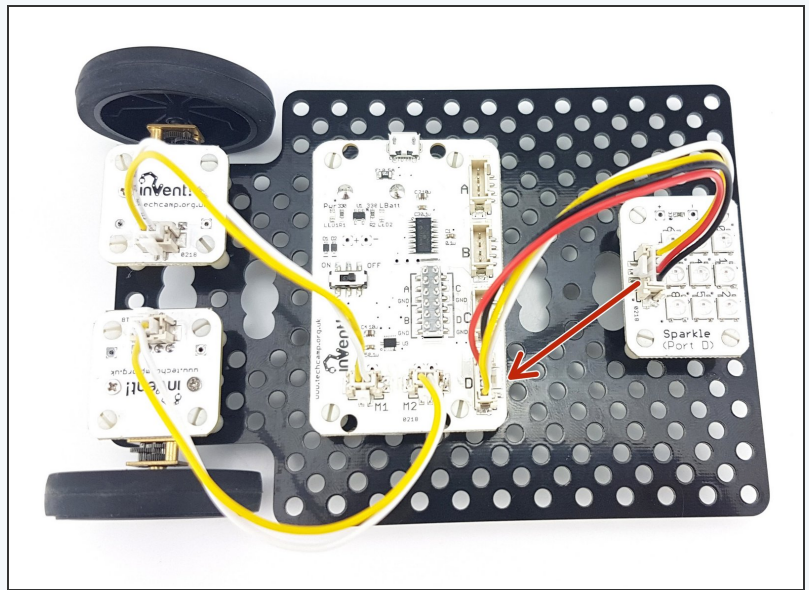
- Sparkles are very useful - they are **LEDs**, just like the red/green LED from before, but much cleverer!
- They have small chips inside them, which allow you to control many LEDs using **just one output**. If you look really closely you might be able to see them.
- They are also **three LEDs in one** - there is a **red**, **green** and **blue** LED in every sparkle.
- We can control these three internal LEDs **separately**, and mix them together to create **any colour**!

Step 2

Connect your Sparkle Module

- Build up your robot like the picture.

⚠ Sparkles must always be plugged into **output D** - this is very important as otherwise they won't work!

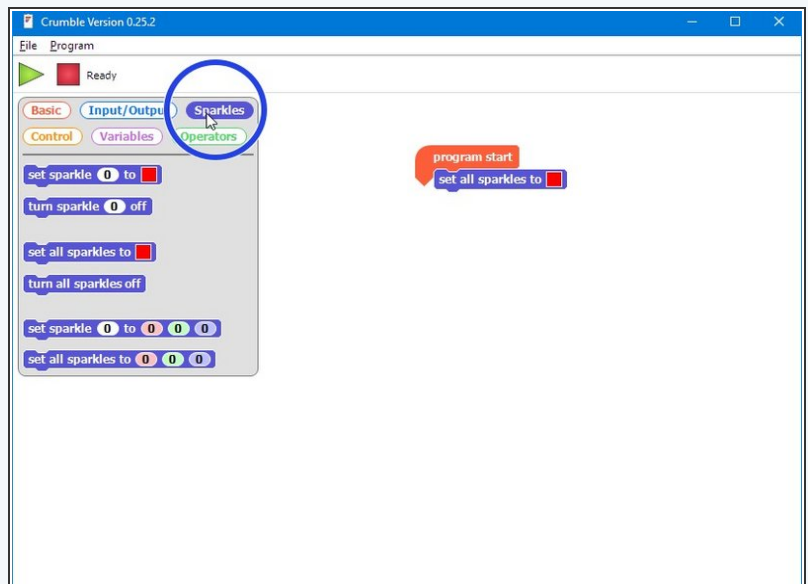


Step 3

Test Your Sparkles

- All the blocks we need for sparkles are in the **sparkles menu**. Click on it and have a look at all the **new blocks** you can use.
- For now, let's **test the sparkles** by building the simple program in the picture - hopefully they **all turn red** when you **program your robot**!

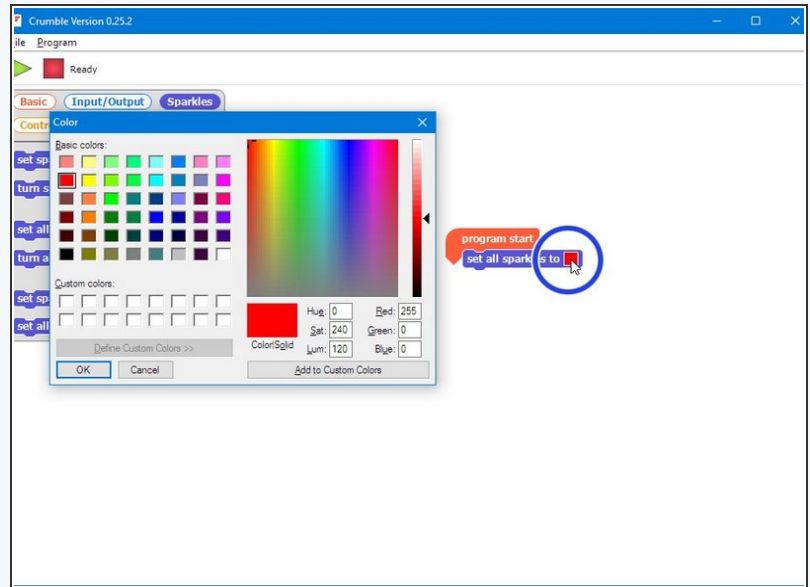
⚠ Don't stare at the sparkle board for too long - it's very bright!



Step 4

Different Colours

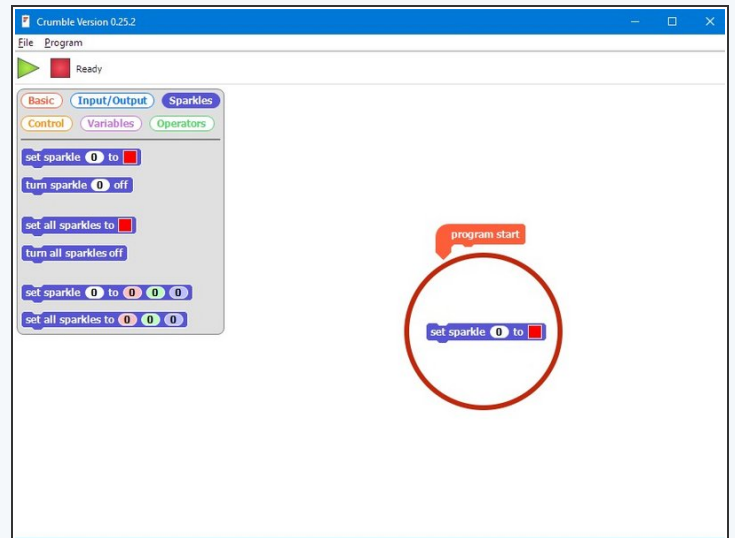
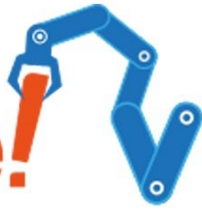
- It's really easy to control the red, green and blue LEDs **separately** to make **any colour we like**.
 - **Click** on the red square to bring up the colour picker - **try a few different ones** and see how they look!
- ⚠ Switch off your junior main board between programs to save battery life!



Step 5

Different Sparkles, Different Colours

Challenge!



- Remember, we can also control each sparkle **individually!**
- We can use the **set sparkle 0** block to change just one sparkle's colour
- **In programming numbers start from 0**, not 1 - so for three sparkles, the first is 0, the second is 1 and the third is sparkle 2.
- Use **three** of the individual sparkle set blocks to **set each of your first three sparkles to a different colour.**

Step 6

Extension Challenge - Starting Lights

- Let's make a set of **starting lights** for a race across the planet surface.
- Check out the F1 starting lights in the video - can you put together a program using **sparkle** and **wait** blocks to **make your own**?
- The lights should **turn red 3 at a time**, then **all go green** at the same time.

