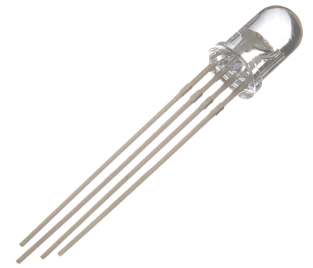# Adding RGB LEDs

RGB LEDs look like normal LEDs, but have inside a red, green and blue LED inside. We can control each individually to create nearly any colour we want!

Step 1: Wiring it up!

You will need a few components to get started.

- A half size breadboard
- An RGB LED (it has 4 legs)
- x3 220 ohm (or 330 ohm) resistors
- x4 male to female jumper cables

The longest leg goes in the (black) line connected without a resistor (GND)

Wire it up as in the diagram to the right and when you are ready, get a mentor to check it Wire colour does not matter!
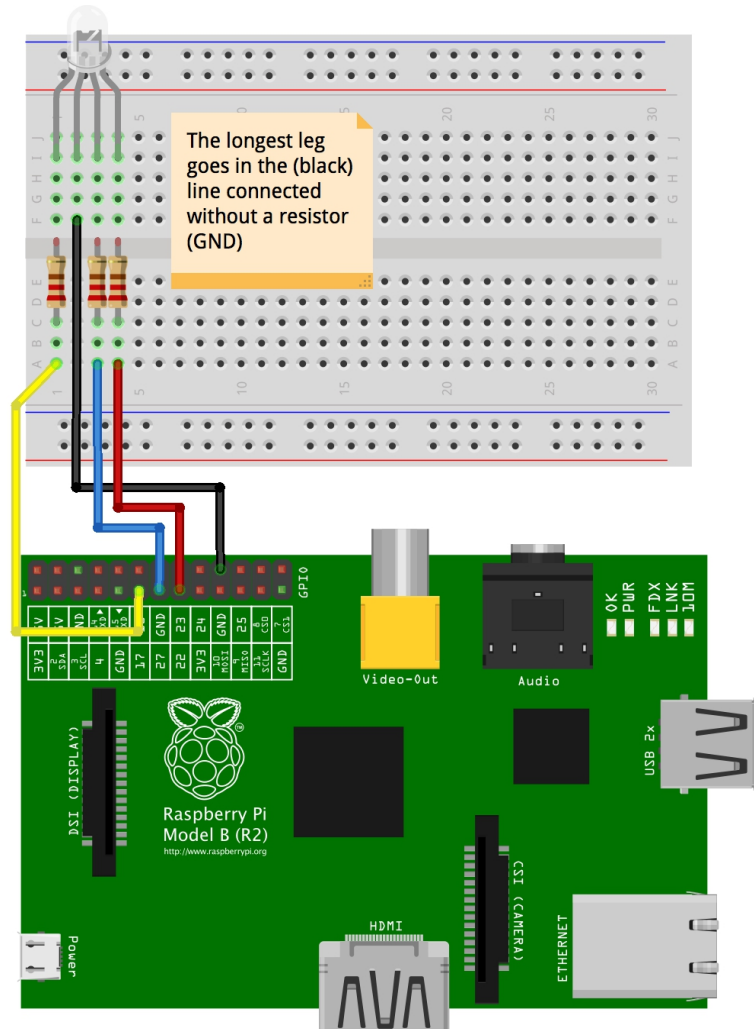
Step 2: Code it

Because we are using the GPIO pins, we need to run a special version of Scratch called **Scratch GPIO 5**.

The RGB LED is connected to pins 11, 13 and 15. Everything beyond this point is exactly the same as in the LEDBorg activity. For help with the code, check the LEDBorg activity.

Now Try!

1. Can you work out which pin number corresponds to which LED colour?
2. Can you bring on the primary colours one after each other with a 1 second pause/wait between each colour change?
3. **Create a light show!** Make a script that brings on different colours in different sequences. Combine as many colours as you want and make it at least 10 blocks long.
4. **Extension** – Can you use the RGB LED to react to changing conditions using a sensor (like a PIR sensor, an ultrasonic sensor or maybe a button)?

By Andrew Mulholland.
Northern Ireland Raspberry Jam