Reprogramming

With a Gemma micro-controller you can use different programs to change the effect of your circuit. For example you could change the colour of the LEDs or make the lights flash and fade between different colours.

Opening the program:

1. Plug in your GEMMA using the Micro USB cable.
2. Open the Arduino program by clicking the icon on the taskbar. It's the one that is turquoise blue.
3. Open the "workshop_sketch" sketch, by clicking "file -> sketchbook -> workshop_sketch".
4. Save the sketch as "workshop_" followed by your name.

Changing the colour:

1. Put `//` before the line ending in "//girlguiding blue".
2. Remove the `//` before any of the lines below it.
3. You can do the same for brightness, speed and pattern!

Transferring the program to the board:

1. Save your program.
2. Press the button on your GEMMA and then the "->" button in the Arduino program.
3. Wow, pretty lights!

Alert: If the red light on the GEMMA stops when transferring, press the button again. When it's working this light should flash very rapidly.

Creating your own colours

In the program each colour is made up of three pairs of values. These values represent how much Red, Green and Blue light are mixed together:

FF FF FF

Values are between 0-9, A, B, C, D, E and F. F being the largest value and 0 being the smallest. The first position of the value for each colour makes a huge change, the second position makes a little change.

Here are some examples:

Red FF0000	Purple 673574	Pink FC94EC
Green 00FF00	Orange FFA516	Lime CCFF00
Blue 0000FF	Fuchsia F70586	Redish FF404B
White FFFFFF	Turquoise 29E8E0	Lt Blue 8ED6E8

In your program the `0x` at the start of the colour tells the program that you are providing a value of a colour.

To add your colour find the line that ends in `//your colour!`. Change the bit in the curly brackets to any colour you want and make sure you leave `0x` before your colour. Try experimenting and playing with different values for colours!

When you're done transfer the code to the GEMMA using the instructions opposite.