

CodeBug™ ColourStar

<http://www.codebug.org.uk>

Express your mood in lights, with the CodeBug™ ColourStar, a fun and colourful addon for CodeBug™.

Twinkle these 9 dazzlingly colourful lights in more colours than you can imagine and create mind bending patterns in just a couple of simple blocks.

Quick Start Guide

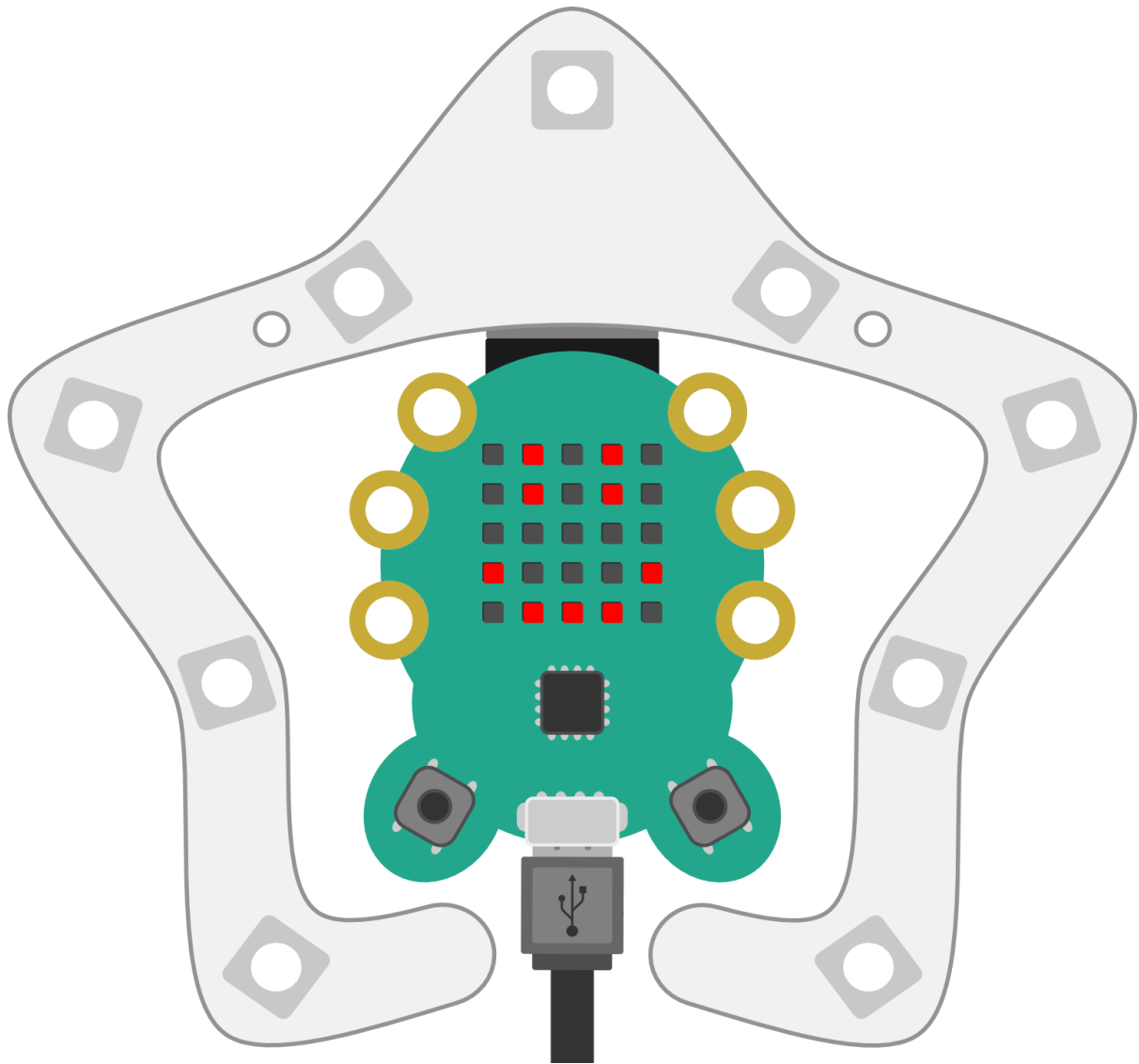
Learn to create simple programs for CodeBug™ to make ColourStar's clever lights shine any colour of the rainbow.



Connecting your ColourStar

*It is recommended that you connect your ColourStar **after** plugging the Micro USB cable into CodeBug™. Disconnect your ColourStar **before** unplugging the Micro USB from your CodeBug™. Always disconnect the power and take care when plugging in or unplugging devices from CodeBug™.*

To fit your ColourStar to CodeBug™, place the ColourStar on a table with the LEDs facing you. With CodeBug™ LED side up, gently slide CodeBug™'s expansion socket onto the 6 pin connector on the ColourStar.



ColourStar connected to CodeBug™

Programming CodeBug™ ColourStar

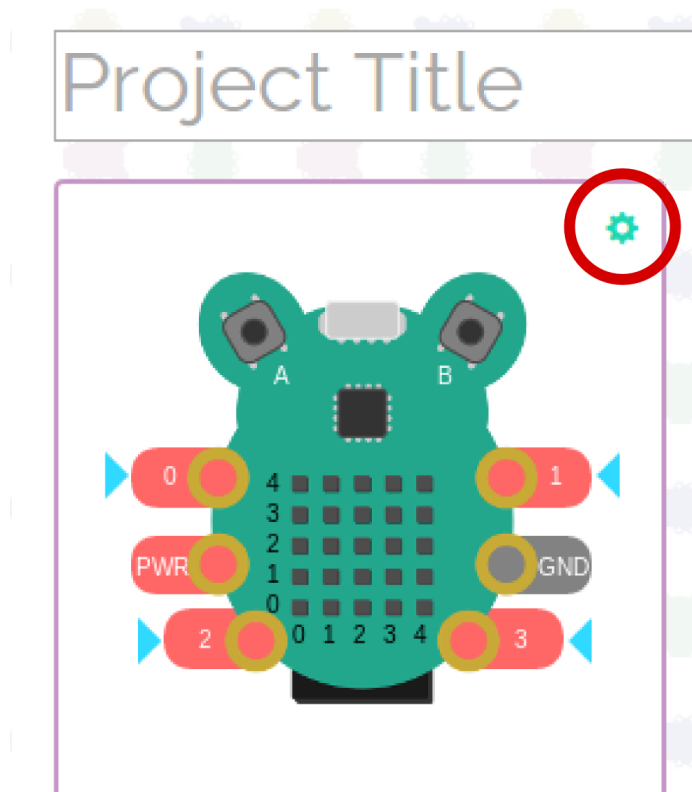
ColourStar is controlled using CodeBug™, which means to turn a light on ColourStar, you need to create a program for CodeBug™. It's easy to program CodeBug™ through the website <http://www.codebug.org.uk/create>. If you've never programmed CodeBug™ before, visit the getting started tutorial on the website to learn more.

On the 'create page', you'll also find an emulator, which shows on screen what will happen before you run your program on the physical CodeBug™.

Show the ColourStar emulator

To show the emulated ColourStar:

- Create a new program <http://www.codebug.org.uk/create/codebug/new/>
- Click the Green cog in the top right corner of the CodeBug™ emulator box



Show the CodeBug™ emulator setting by clicking the cog (circled in red)

- On the pop up that appears, tick the **Colour Tail** check box and then click the **Star** radio button
- Click the Apply button

Emulator Settings

✕

CONNECTED HARDWARE PER PROJECT

Colour Tail

[Order Colour Star and GlowBugs here](#)

Star GlowBugs × 5 GlowBugs × 10

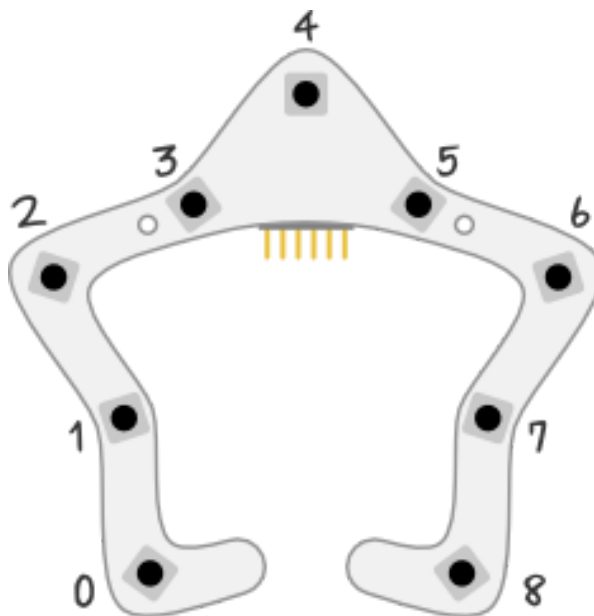
EMULATOR OPTIONS PER USER

Show leg controls

CLOSE

APPLY

Enable ColourStar hardware

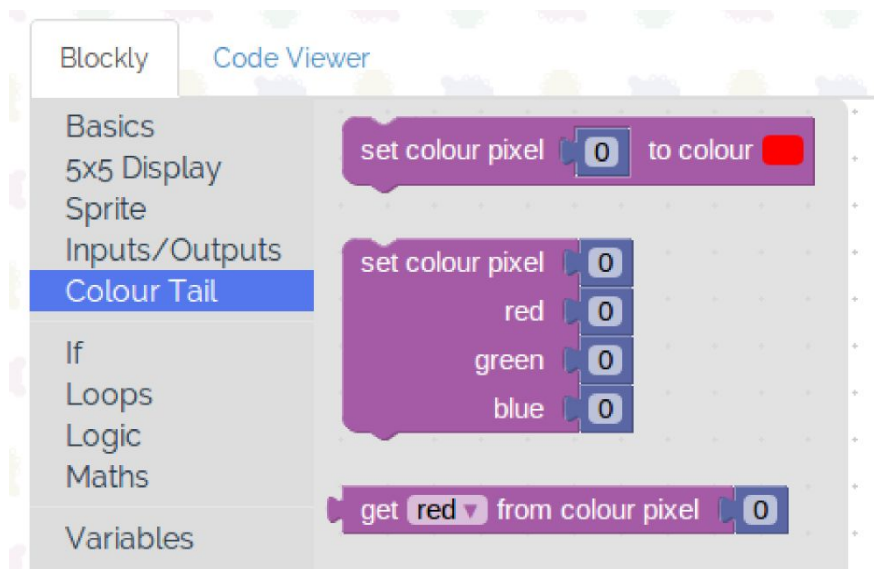


ColourStar emulator; shows the colour each of the 9 lights will shine

Creating your first program

Now you have an emulated ColourStar displayed you are ready to create your CodeBug™ program to control the lights.

To turn a light on you need to add a block from the Colour Tail menu. These blocks need to know the number of the light (or pixel) you want to control and the colour you want to set it. On the ColourStar, the pixels are numbered clockwise, starting from zero¹.



Colour Tail block menu opened

To set the colour of one of the ColourStar's pixels, you can use one of two blocks:

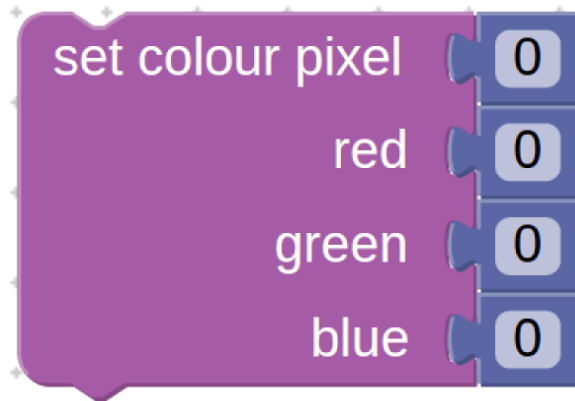
The **set colour pixel to colour** block allows you to specify the colour of a pixel on the star, from a palette of common colours.



set colour pixel to colour block with palette open

¹<http://www.howtogeek.com/149225/why-do-computers-count-from-zero/> or https://en.wikipedia.org/wiki/Zero-based_numbering

The **set colour pixel block** allows you to specify how red, green and blue are mixed together. You can get more colours than those shown in the palette and it also makes it easy for you to use **number** or **variable** blocks for each of the 3 component colours.



set colour pixel block

Sample Program

Here's a sample program that turns lights around the star red then lime green in sequence.

```
start
direction down
sleep after 3 minutes
enable ColourStar (as tail)
repeat while true
do
count with i from 0 to 8 by 1
do
set colour pixel i to colour red
pause for time (ms) 200
count with i from 0 to 8 by 1
do
set colour pixel
red 100
green 255
blue 0
pause for time (ms) 200
```

Sample ColourStar program with the emulator showing what will happen

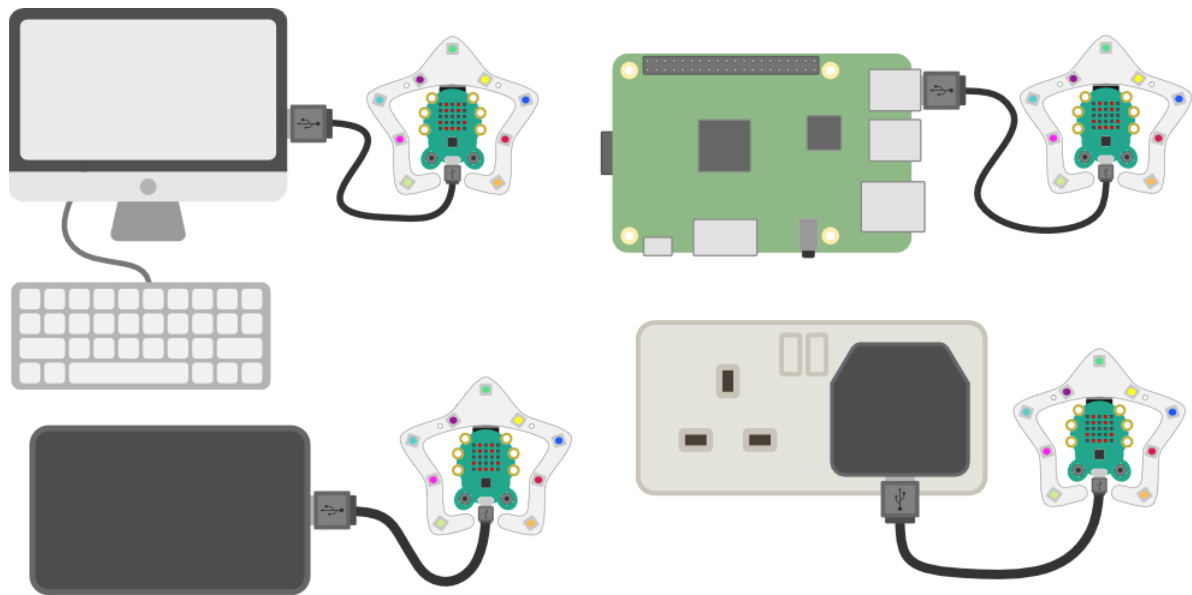
Transfer your program for controlling ColourStar onto your CodeBug™ just as you would any other onto your CodeBug™ program. Refer to the Download instructions.

When reloading programs, to avoid having to unplug the Micro USB from CodeBug™, unplug the end of the Micro USB cable that plugs into your computer.

Powering ColourStar by USB

CodeBug™ and ColourStar can be powered from most 5V USB power supplies, e.g. computer USB ports, phone chargers, USB battery packs etc.

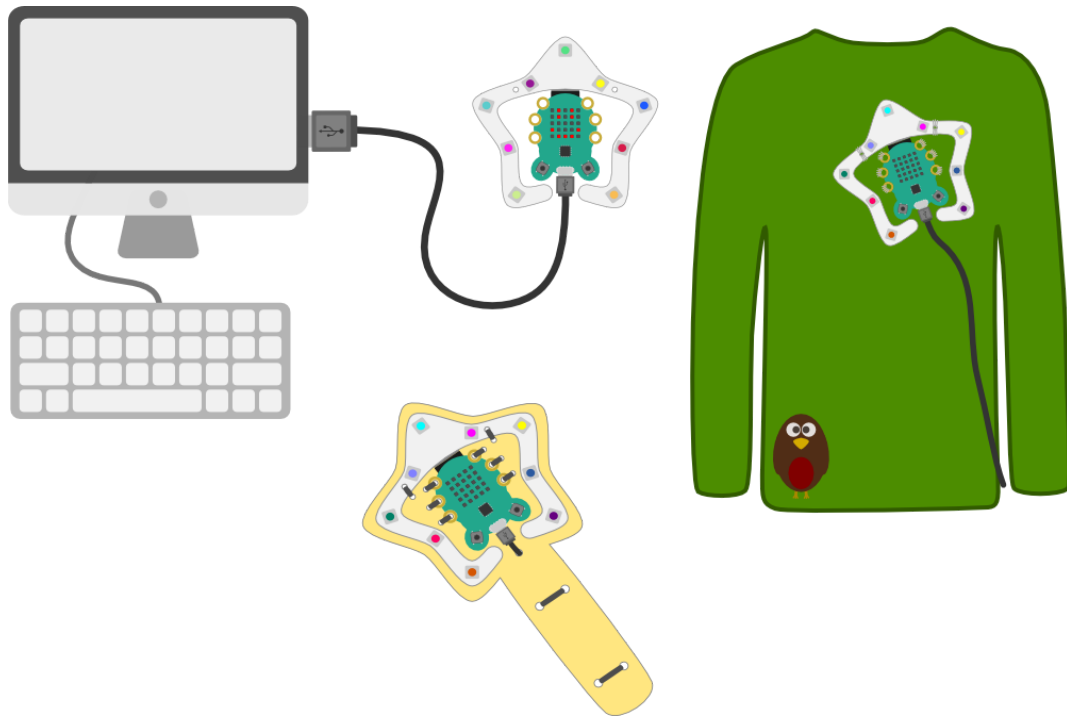
The bright full-colour LEDs on ColourStar require more power than CodeBug™ (up to 540mA on full white brightness). Always make sure you are delivering enough power to CodeBug™ for the ColourStar. Coin batteries will not work with ColourStar; instead we recommend USB charger packs for portable use.



Different ways of powering CodeBug™ and ColourStar

Activities

For fun things to make and do for all skill levels, check out the vast number of engaging CodeBug™ ColourStar activities and walkthrough guides on the CodeBug™ website. Visit <http://codebug.co.uk/learn/> for ideas and easy to follow step by step instructions.



Examples of ColourStar activities available from <http://www.codebug.org.uk>