

Section A
Unit #11
colour



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Unit #11 colours

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Unit #11 colours

So far I have introduced colour as an RGB red, green and blue components. There are, however, more options that I want to introduce should you prefer to use these. Including

- a) Named colours
- b) Hex numbers for colours
- c) Hue Saturation Brightness colours
- d) ColourBlend



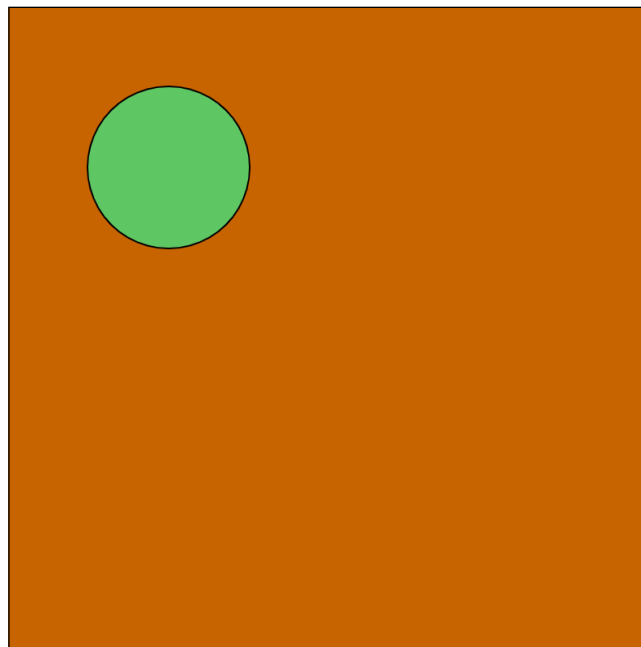
Sketch A11.1 using RGB

RGB as a reminder, green circle on an orange background

```
function setup()
{
  createCanvas(400, 400)
}

function draw()
{
  background(200, 100, 0)
  fill(100, 200, 100)
  circle(100, 100, 100)
}
```

RGB as before



Notes

By default it assumes values (arguments) are for RGB, three for red, blue and green, the fourth is the amount of transparency.



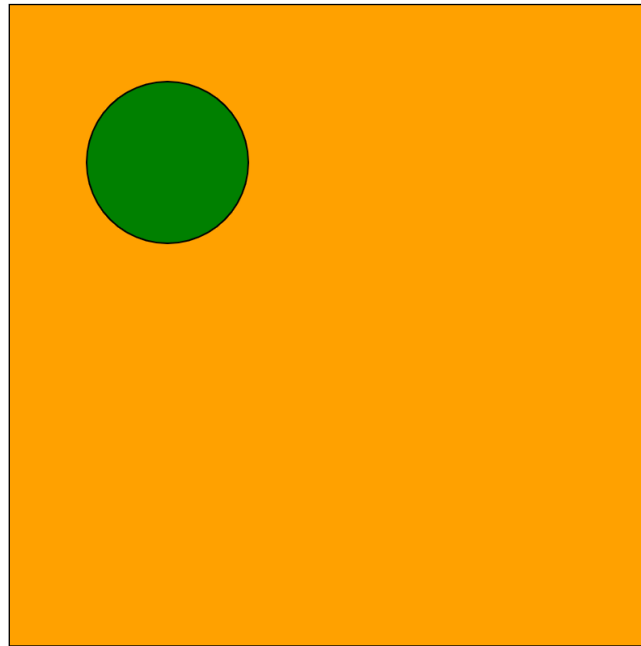
Sketch A11.2 using a 'name' for the colour in p5.js

Now with colour name

```
function setup()
{
  createCanvas(400, 400)
}

function draw()
{
  background('orange')
  fill('green')
  circle(100, 100, 100)
}
```

Using the name of the colour



Notes

Because you put the name of the colour in speech marks it gives you a little indicator to the colour. There are quite a few colour names. If you use 'lightgreen' with no gap you get light green. Some colour will take the word dark e.g. 'darkred'. Other names are ones like teal, magenta and so on. Just experiment. It is useful if you just want a simple colour rather than trying to remember the values especially if you want more than three colours



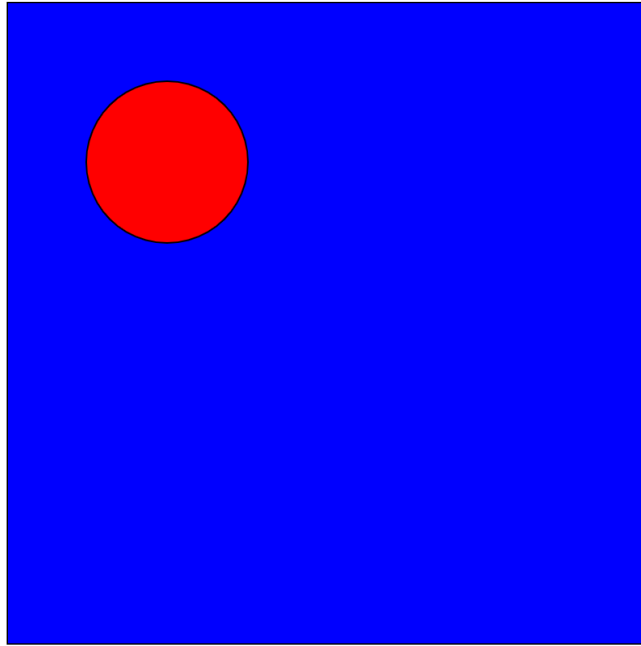
Sketch A11.3 Using a hex value for colour

Hex, this is one often used in website design and it is hexadecimal number to indicate a particular colour. To explore these colours I recommend that you simply google hex colour picker and there are. A lot of websites that let you chose the colour and get the hex value, or go to https://www.w3schools.com/colors/colors_picker.asp

```
function setup()
{
  createCanvas(400, 400)
}

function draw()
{
  background('#0000FF')
  fill('#FF0000')
  circle(100, 100, 100)
}
```

Using hex values



Notes

Here are some basic colours, notice that it gives the colour icon as well

Red	<code>#FF0000</code>
Green	<code>#00FF00</code>
Blue	<code>#0000FF</code>
Black	<code>#000000</code>
White	<code>#FFFFFF</code>



Sketch A11.4 HSB colour mode

HSB (or HSL) stands for Hue, Saturation and Brightness (or Lightness). For this we have to change the `colorMode()` to HSB. Here we get a green background and a blue circle

The first argument is the hue which is on a colour circle from 0 to 360, where 0 is red, 120 is green, 240 is blue.

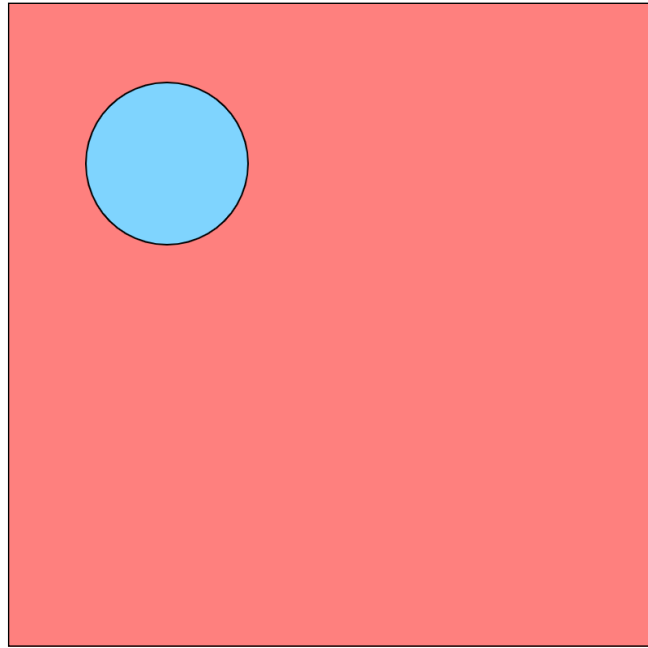
Saturation is a percentage from 0 to 100. It is the amount of colour so 0 is white to 100 being full colour.

Brightness is from 0 to 100 also, where 0 is dark, and 100 full brightness

```
function setup()
{
  createCanvas(400, 400)
  colorMode(HSB)
}

function draw()
{
  background(0, 50, 200)
  fill(200, 50, 100)
  circle(100, 100, 100)
}
```

HSB colours



Notes

HSB produces some very nice colours



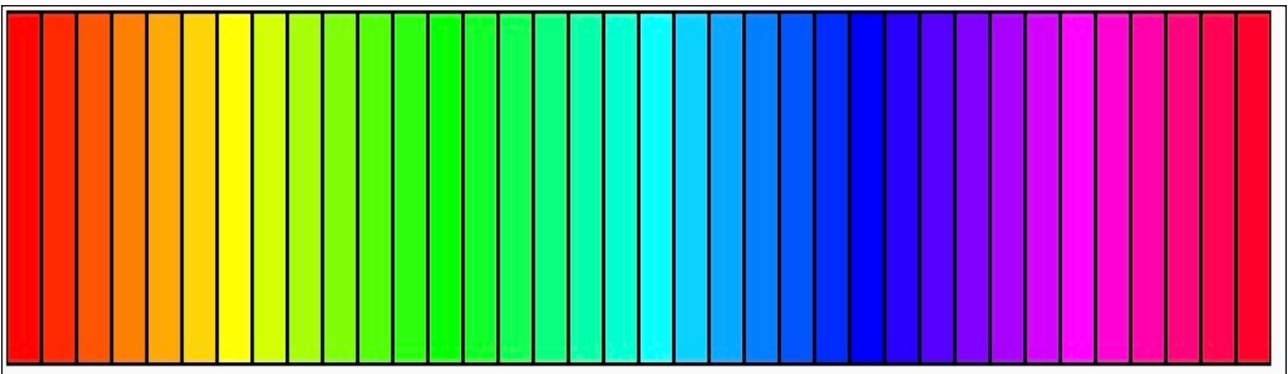
Sketch A11.5 HSB colour chart

We iterate through the colours 10 steps at a time from 0 to 360.

```
function setup()
{
  createCanvas(360, 400)
  colorMode(HSB)
}

function draw()
{
  for (let i = 0; i < 370; i += 10)
  {
    fill(i, 100, 100)
    rect(i, 1, 10, 100)
  }
}
```

Cycling through colours from 0 to 360



Notes

We start with red at 0 and end with red at 360



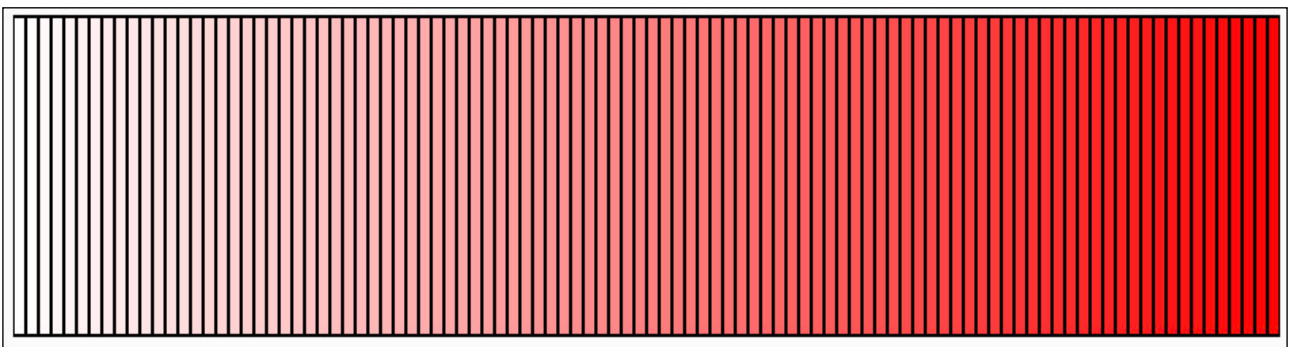
Sketch A11.6 HSB saturation

We will iterate red from 0 saturation to 100.

```
function setup()
{
  createCanvas(400, 400)
  colorMode(HSB)
}

function draw()
{
  for (let i = 0; i < 101; i++)
  {
    fill(0, i, 100)
    rect(i * 4, 1, 4, 100)
  }
}
```

Saturation from 0 to 100





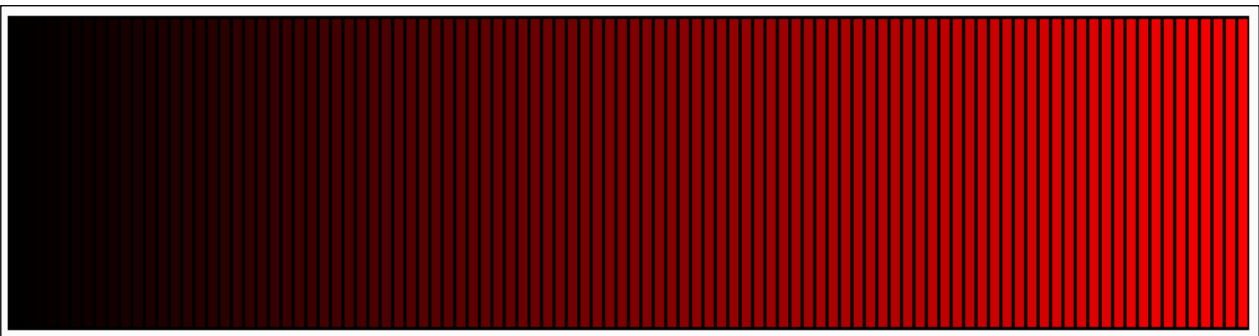
Sketch A11.7 HSB brightness

Now for the brightness

```
function setup()
{
  createCanvas(400, 400)
  colorMode(HSB)
}

function draw()
{
  for (let i = 0; i < 100; i++)
  {
    fill(0, 100, i)
    rect(i * 4, 1, 4, 100)
  }
}
```

Brightness from 0 through to 100





Sketch A11.8 using blendMode()

There are quite a number of arguments that can be used in `blendMode()` suggest you look at them and experiment to get a full understand of what they can do. You could create some very interesting effects. In this case we will just add the colours with three overlapping circles of red, green and blue

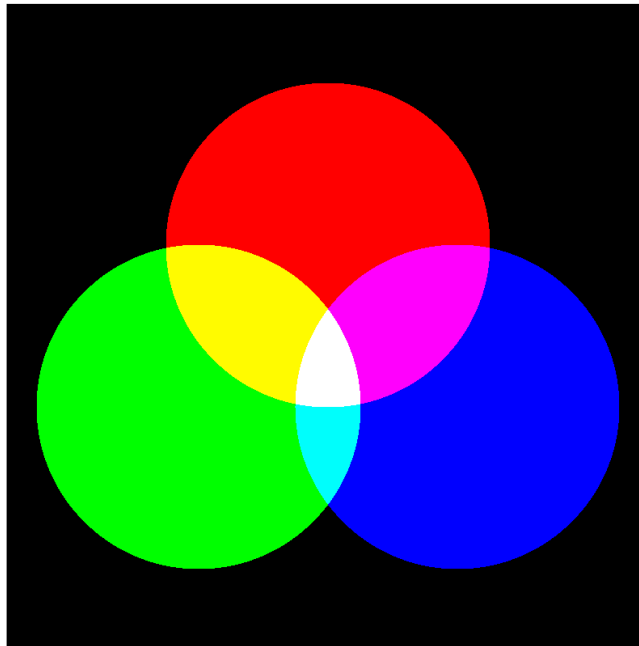
```
function setup()
{
  createCanvas(400, 400)
  blendMode(ADD)
}

function draw()
{
  background(0)
  fill(200, 0, 0)
  circle(200, 150, 200)

  fill(0, 200, 0)
  circle(120, 250, 200)

  fill(0, 0, 200)
  circle(280, 250, 200)
}
```

Blending colours



Notes

If you put the background at 255 it continues to add the colours until everything is white, if you want a white or non-black background then you need to put it in setup()