

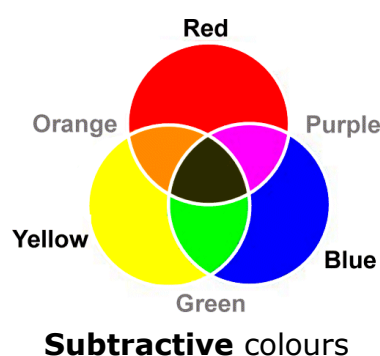
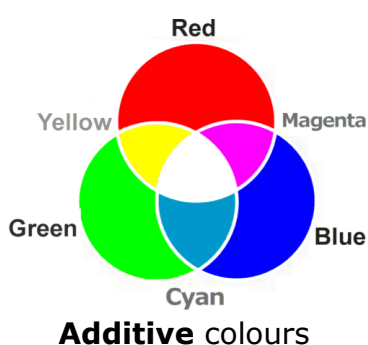
Colour Maker Investigation

Primary Colours

A primary colour is one which cannot be made by mixing other colours.

The primary colours used in painting are different to the primary colours used in electronic screens. The colour screens used in televisions, mobile phones and computers use the **additive** primaries of **red**, **green**, and **blue**. Screens work by combining the primary colours to make new colours.

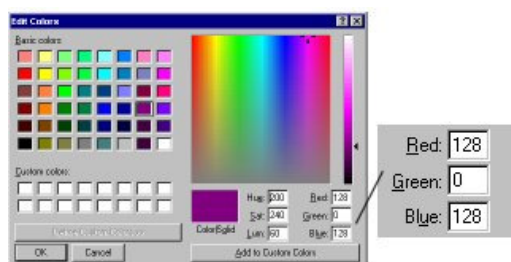
A screen giving off equal amounts of **red** and **green** light will appear **yellow**. Using all three colours 'fools' the eye into seeing white.



In Art, there are three different primary colours - **red**, **yellow** and **blue**. These are called the **subtractive** colours. They work by absorbing light. When all three primaries are used, the light falling on the mixture is completely absorbed to give black (in theory!).

Turning colours into numbers

When you use a program like Microsoft Paint, you can make up your own 'custom' colours. This can be done by varying the amount of Red, Green and Blue.



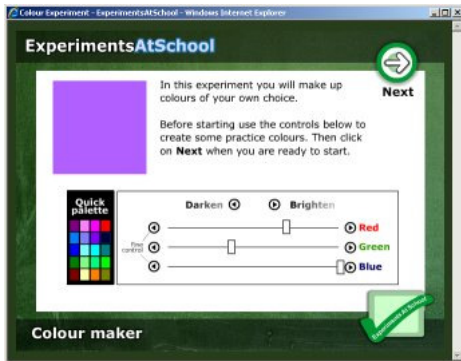
The amount of each colour can be varied on a scale from **0** (no colour used) up to a maximum of **255**. See if you can work out the colours you would see for these combinations or 'RGB' values?

R	G	B	Colour seen
255	0	0	
0	128	0	
255	0	255	
255	255	255	
0	0	0	
128	128	128	

With **256** shades of red x **256** shades of green x **256** shades of blue = 16.8 million possible colours.

Investigation Sheet

In this investigation you will mix different amounts of 'RGB' to create the colours of various fruits and vegetables. Once you have complete the online experiment make a note of how much red, green and blue (0-255) you needed to mix for each fruit & vegetable.



Fruit/Veg	R	G	B
Banana			
Cherries			
Peach			
Coconut			
Garden Peas			
Blueberries			

Here are some possible questions we can now investigate using lots of data just like yours. Are there big differences in the RGB values different people use? What is the average colour people have created for each item of food?

Questions

To begin with, select one fruit/vegetable to investigate. Selection = _____

How big a sample from the online database are you going to use? Sample = _____

If you going to investigate a particular 'population', describe this below.
For example just boys or 12-14yr olds.

Summary of your results

	Mean or mode	Min value	Max value	Range
Red component				
Blue component				
Green component				

Which colour had the greatest variation? Which colour had the least? Try to explain why these colours varied like this.

How do your own results for this particular fruit/veg compare with the average?