

Colour Maker Investigation

Teacher's notes

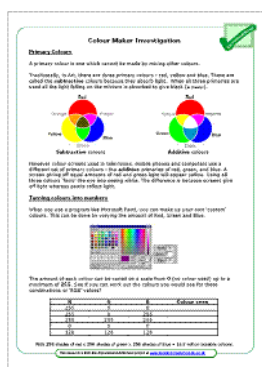
Aim

To determine an 'average' colour from a sample of results (based on numerical RGB values).

Objective

Pupils use an interactive colour maker to create colours based on names of fruit/veg. Pupils record each of their chosen colours as three integers (red, green and blue components) Pupils obtain a random sample from a database of submitted RGB values. Pupils analyse this data to determine the mean and range of each component colour.

Introducing the investigation



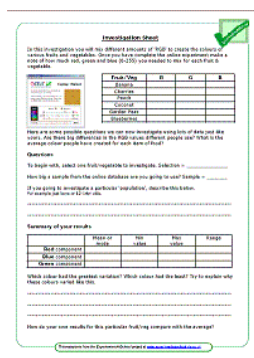
A two sided worksheet is available which first introduces the two types of primary colours; those used in paint (subtractive primaries) and those in electronic screens (additive primaries).

Electronically created colours use three components – red, green and blue – each of which can be varied on a scale of 0 (off) to 255 (fully on).

Pupils are asked to determine colours based on RGB values – see below.

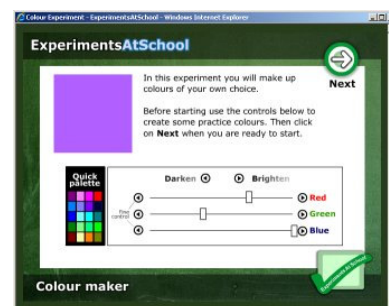
R	G	B	Colour seen
255	0	0	(Bright) Red
0	128	0	(Dark) green
255	0	255	Purple/Magenta
255	255	255	White
0	0	0	Black
128	128	128	Grey

Carrying out the investigation



Pupils should first use the online (flash) interactive experiment. You should give each class a unique project code – this will enable downloading of just the results for your class as well as random samples from our whole database.

The online experiment will ask them to create the colours they associate with particular foods (Banana, Cherries, Peach, Coconut, Garden Peas, Blueberries). At the end of the experiment they should note down the RGB values they use for each colour choice.



The second part of the worksheet focuses on one of the colours created.

From the 'Get Data' section of the ExperimentsAtSchool webpage, pupils can obtain a random sample of results for up to 100 people. From these results they are asked to calculate the mean and range of each component colour and then comment on the results they have obtained.

The ExperimentsAtSchool website will eventually contain a live 'average' of each colour.