



Data Sheet Froot Loops®

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Lab Section

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Table 1: Stock Dye Solution Data

Dye solution	Peak (max) wavelength	Absorbance
Red	522.2 nm	1.078
Blue	630 nm	0.118
Yellow	420.2 nm	0.935

Table 2: Beer's Law Data Table

Concentration	Wavelength from Table 1	Absorbance
0.1	523.10 nm	0.087
0.2	522.4 nm	0.169
0.4	522.2 nm	0.378
0.5	522.2 nm	0.551
Best-fit line equation	$y = 1.134x - 0.0432$	

Table 3: Concentration of Extracted Dye

Primary color	Wavelength from Table 1	Absorbance	Concentration
red	522.2 nm	0.435	0.4225 M
Secondary color	Wavelength from Table 1	Absorbance	Concentration
Orange	522.2 nm	0.196	0.2193 M
	420.2 nm	0.366	

Calculations

$$y = 0.435$$

$$0.435 = 1.134x - 0.0432$$

$$0.4782 = 1.134x$$

$$x = 0.4216931 M$$

$$0.196 = 1.134x - 0.0432$$

$$x = \frac{0.196 + 0.0432}{1.134} = 0.211 M$$