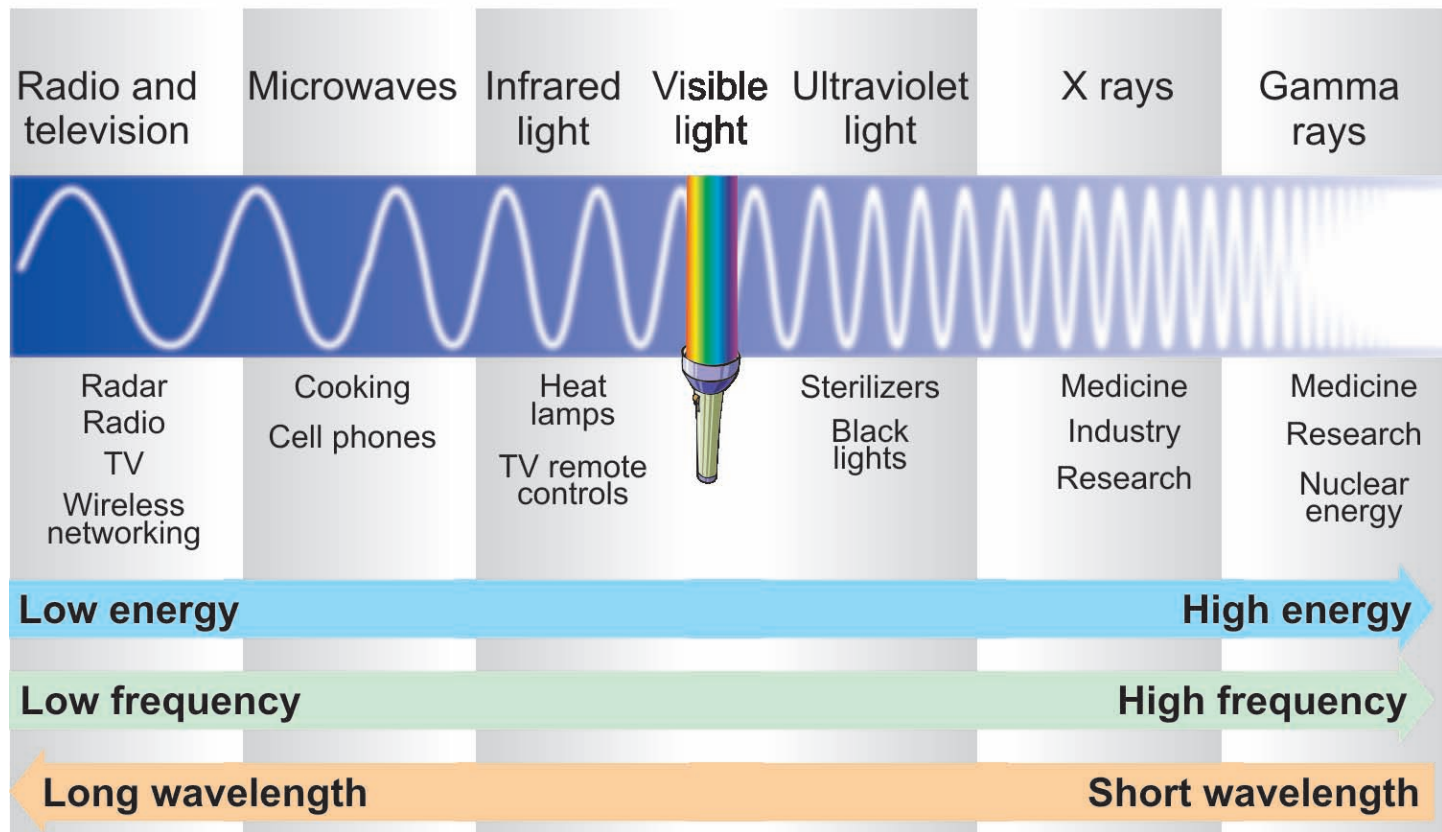



The Electromagnetic Spectrum

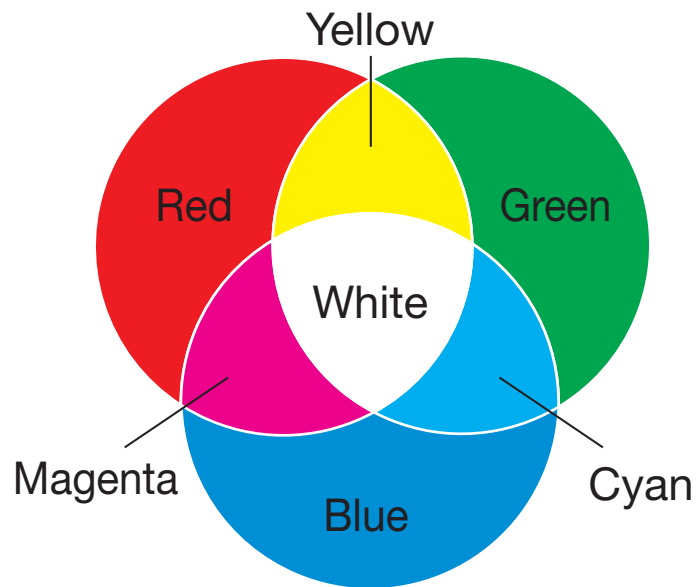


Wavelength and Frequency of Light

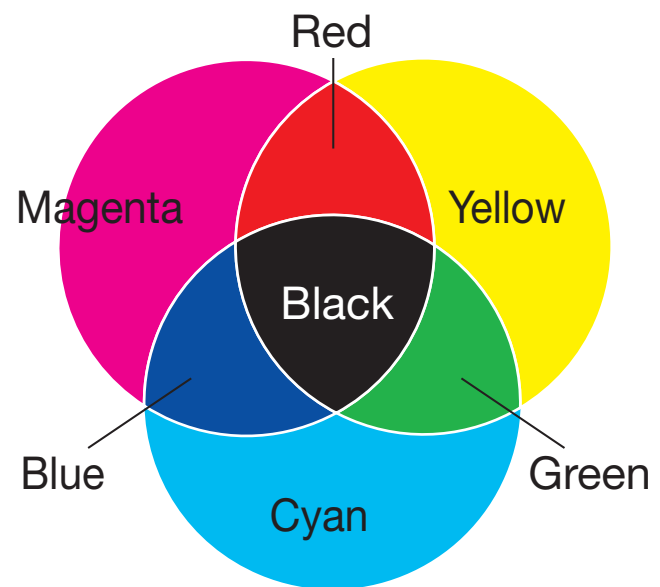
Energy	Color	Wavelength (nanometers)	Frequency (THz)
Low  High	Red	650	462
	Orange	600	500
	Yellow	580	517
	Green	530	566
	Blue	470	638
	Violet	400	750

Additive and Subtractive Color Processes

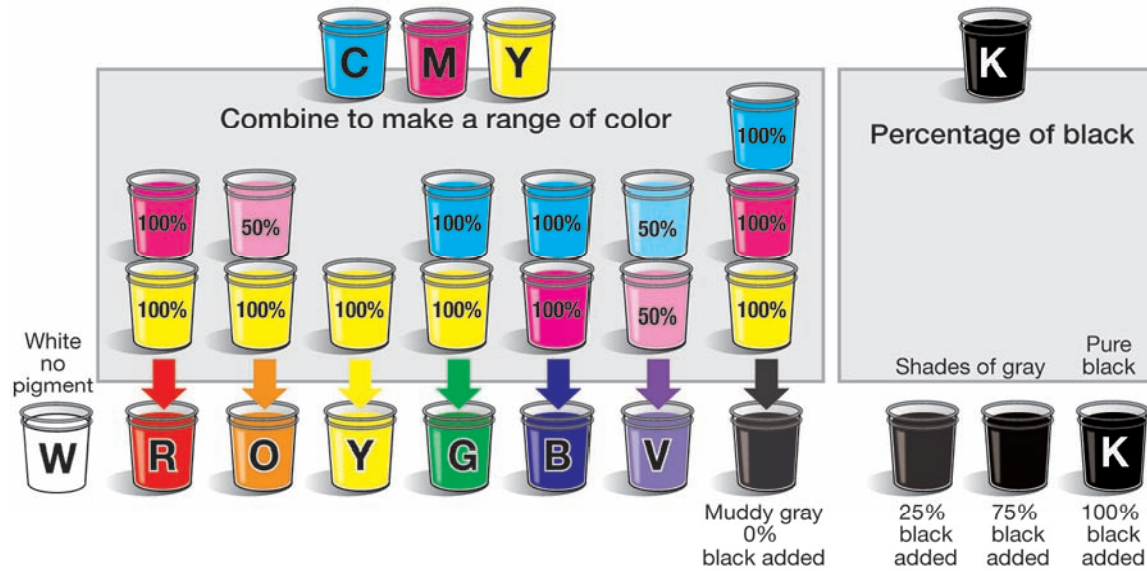
The Additive Primary Colors



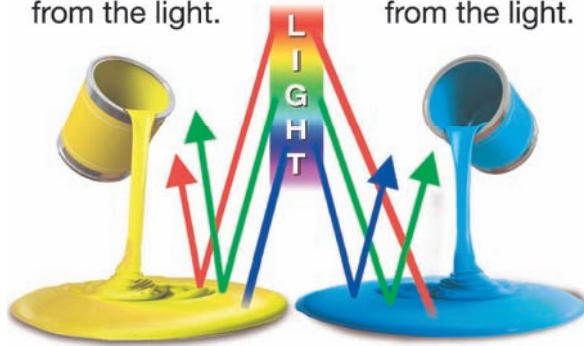
The Subtractive Primary Colors



The CMYK Color Process



Yellow absorbs (or subtracts) the **blue** from the light.

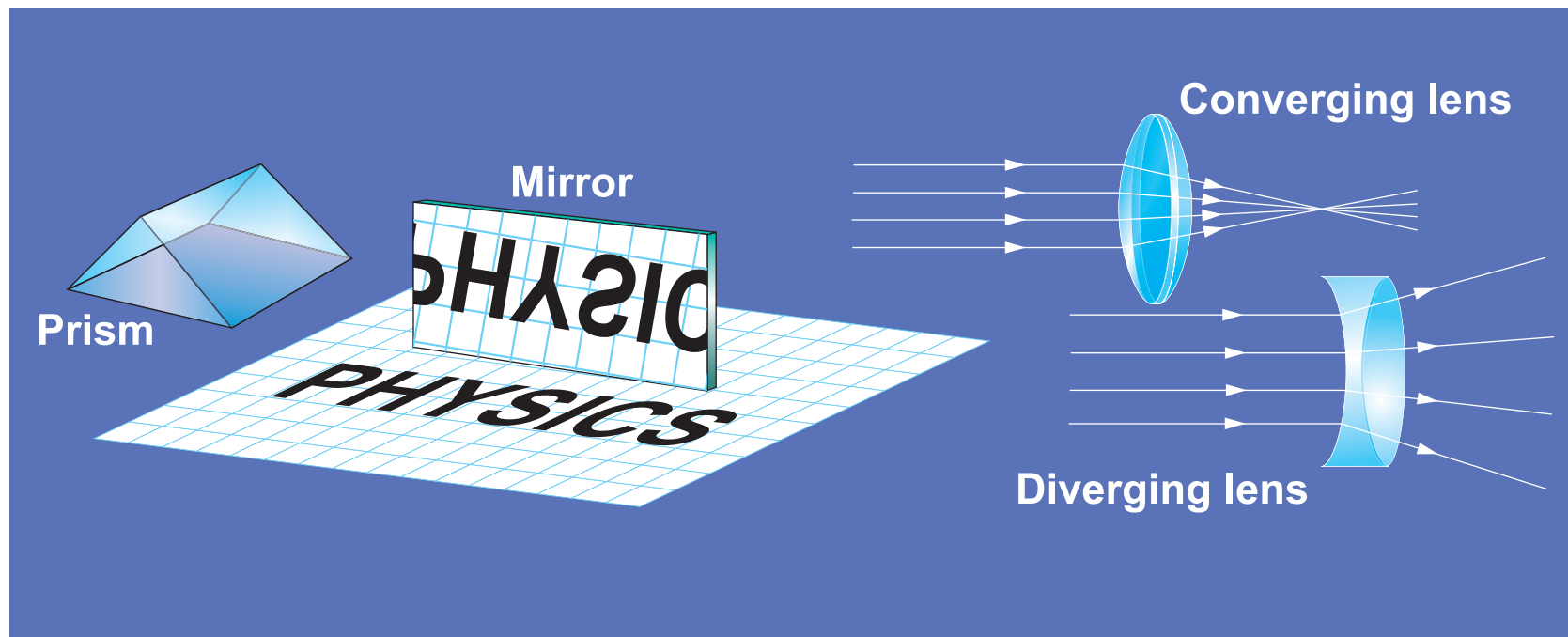


Cyan absorbs (or subtracts) the **red** from the light.

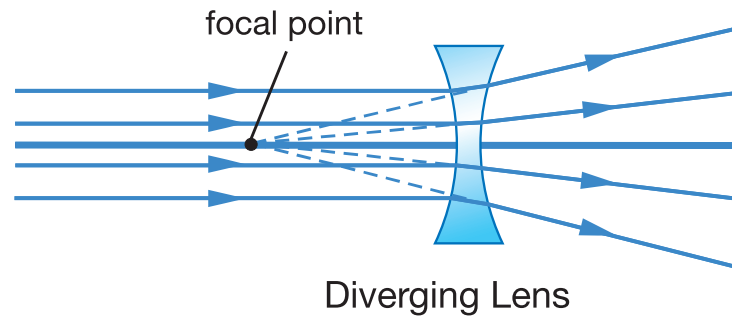
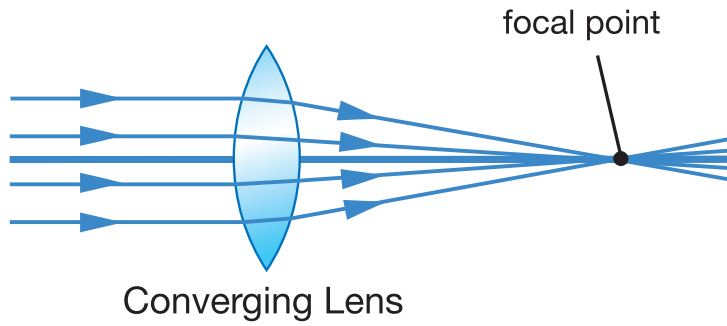
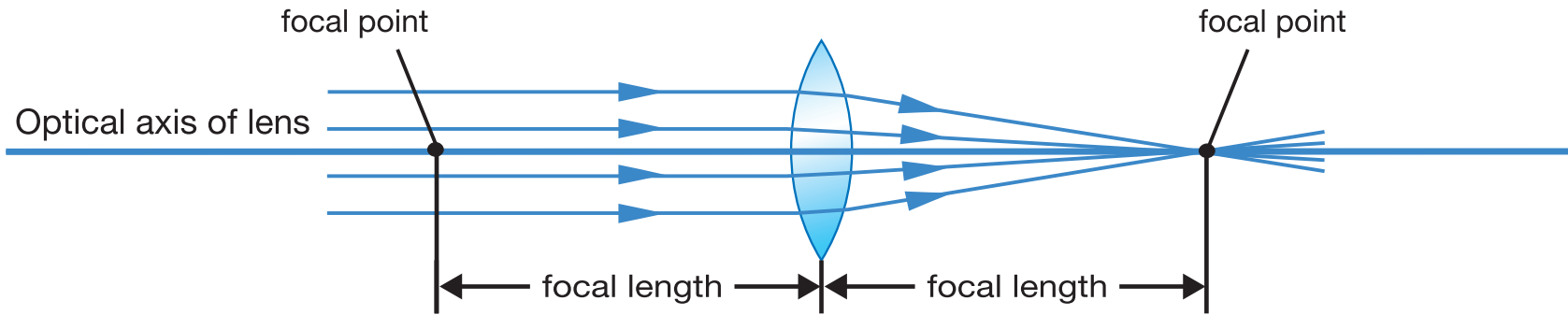
The mix of cyan and yellow subtract both red and blue, so only **green** from the light remains.



Basic Optical Devices

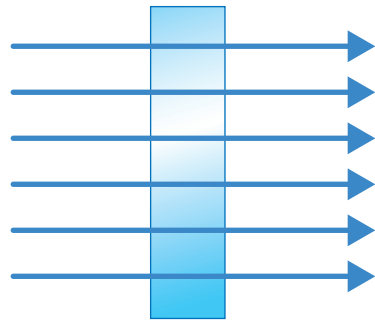


Lenses

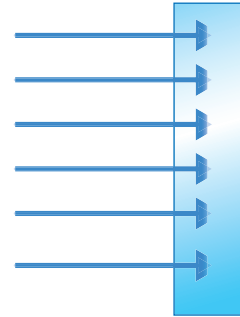


Interactions of Light with Matter

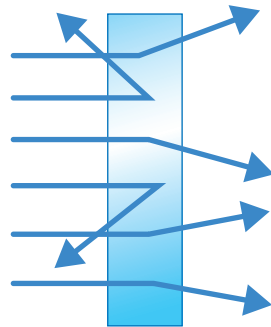
Light can . . .



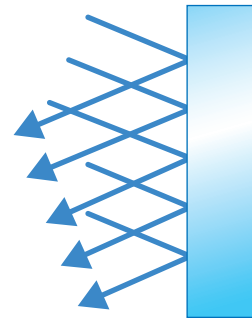
Pass through
(transparent)



Be absorbed



Be scattered
(translucent)



Bounce off
(reflection)

Refraction

