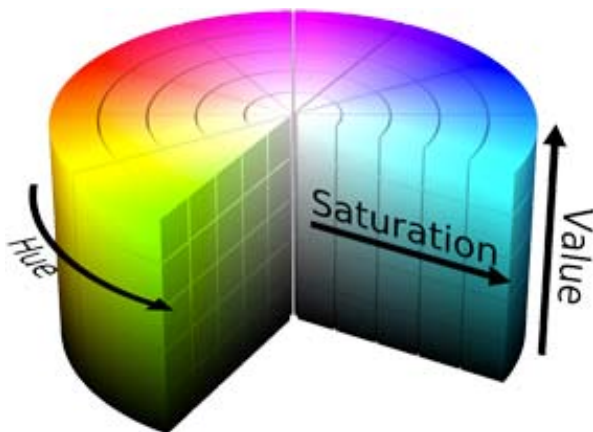# Know More About Colour.

HSB

HSB stands for Hue, Saturation and Brightness. According to this model, any color is represented by 3 numbers. The first number is the hue, and its value ranges from 0 to 360 degrees. Each degree represent a distinct color.

First there is the red color (0 or 360 degrees) and then there are all other colors (for example yellow at 120 degrees, green at 180 degrees and blue at 240 degrees), up to the violet color. All the rainbow's colors are represented here. The second number is the saturation. It represents the amount of color or, more exactly, its percentage. Its value ranges from 0 to 100, where 0 represents no color, while 100 represents the full color. Finally, the third number is the brightness. You can enhance the color brightness adding the white color, or you can reduce it adding the black color. In this case 0 represents the white color and 100 represents the black color. The more this value tends to 0, the brighter the color is. The more this value tends to 100 the darker the color is.

RGB

RGB stands for Red Green and Blue. This model represents how your computer sees colors. In fact you have to know that each pixel in your screen can be 'switched on' like a little 'light-bulb' by means of a 'light-ray' produced by an electronic gun inside your monitor.
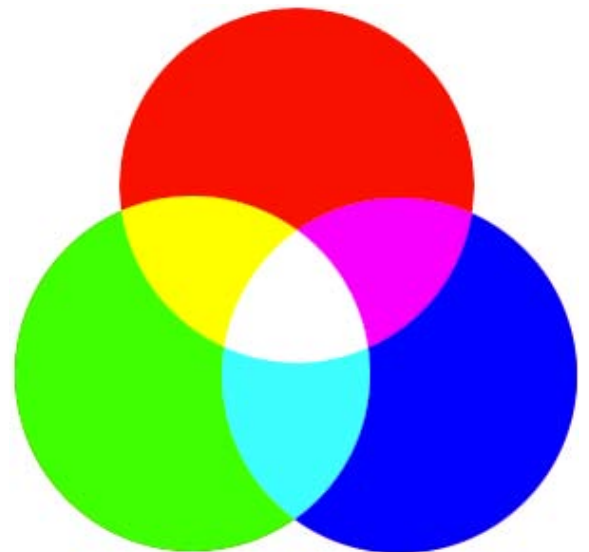
This ray can be a shade of Red, a shade of Green or a shade of Blue. For this reason the pixel shot by the ray can assume a shade of red, a shade of green or a shade of blue. According to the RGB model, each shade of each of the 3 colors (Red, Green and Blue) is represented by a number ranging from 0 to 255. For example, the black color is represented by the '0 0 0' RGB value (R=0, G=0 and B=0) while the white color is represented by the '255 255 255' RGB value (R=255 G=255 and B=255). So the RGB model can represent more than 16 millions of colors. RGB is an additive model, because Red Green and Blue are additive colors. In other words when red green and blue are comined, they create white. Red + Green + Blue = White.

CYMK

CMYK stands for Cyan Magenta Yellow and blacK. This model is used for printing. In other words these are the 4 colored inks used inside of color printers. CMYK is a subtractive model, in fact in theory, cyan, yellow and magenta should combine among themselves to absorb all colors and produce black.

But because of the small impurities found in all inks, they actually combine to form a muddy brown. This is one of the reasons for the black ink. Another reason is this: colored inks are more expensive than black ink. Besides, 3 inks means 3 ink layers during printing. And 3 ink layers cause the printed paper to become quite wet, so the paper will dry more slowly and the press can be slower. In other words more expensive. You have to care about CMYK when you have to print something.

LAB

LAB stands for Luminance (or lightness) and A and B (which are chromatic components). According to this model A ranges from green to red, and B ranges from blue to yellow.
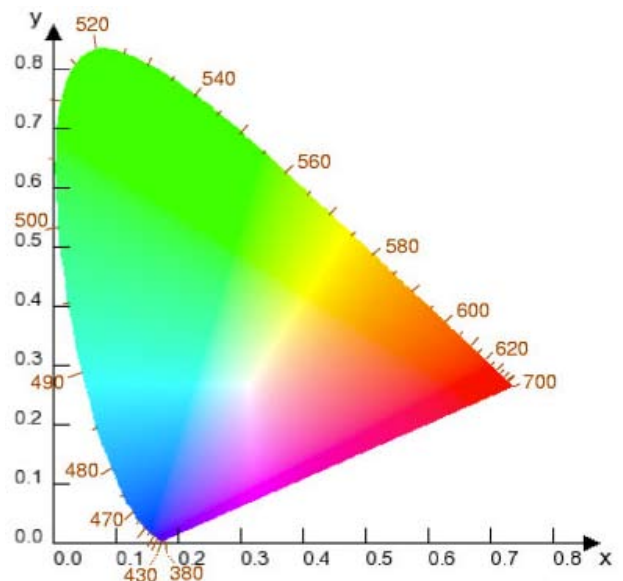
This model was designed to be device independent. In other words by means of this model you can handle colors regardless of specific devices (such as monitors, printers, or computers). The Luminance ranges from 0 to 100, the A component ranges from -120 to +120 (from green to red) and the B component ranges from -120 to +120 (from blue to yellow).