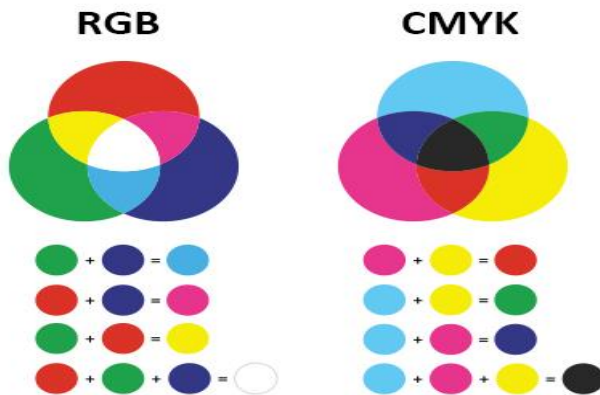


Understanding the Difference Between RGB and CMYK



Color can look vibrant on a screen but appear very different once printed. The reason often comes down to two different color systems: RGB and CMYK.

Understanding how they work helps ensure your designs look the way you expect when they move from digital display to printed page.

What Is RGB?

RGB stands for Red, Green, and Blue.

This color model is used for digital screens, including:

- Computers
- Smartphones
- Tablets
- Televisions

RGB works by mixing light. Tiny pixels on a screen combine red, green, and blue light in varying intensities to create millions of colors.

When all three colors combine at full intensity, they create white light.

Example:

- Red + Green = Yellow
- Red + Blue = Magenta
- Blue + Green = Cyan
- Red + Green + Blue = White

Because screens emit light directly, RGB can produce very bright and vivid colors, especially neon-like blues, greens, and reds.

What Is CMYK?

CMYK stands for Cyan, Magenta, Yellow, and Key (Black).

This is the color model used in printing.

Instead of mixing light, CMYK works by **layering ink on paper**. Each color is printed using tiny dots of ink that combine visually to create the final image.

Example:

- Cyan + Yellow = Green
- Magenta + Yellow = Red
- Cyan + Magenta = Blue
- Cyan + Magenta + Yellow + Black, Dark tones and shadows**

**Black ink (the “K”) is used to create deeper shadows and sharper text.

Why Colors Look Different in Print

The key difference between RGB and CMYK is **light vs ink**.

RGB creates color using light emission, while CMYK creates color by absorbing light through ink on paper.

Because of this, RGB can produce more vibrant colors where CMYK has a smaller color range. Certain bright colors visible on screens simply cannot be reproduced exactly in print.

For example:

- Neon greens/yellows
- Electric blues
- Extremely bright red/oranges
- That awesome Flame you created? Yeah, not going to translate 😞

These colors often appear slightly muted once converted to CMYK.

Why Designers Convert Files Before Printing

When artwork designed in RGB is sent directly to a printer, the system must automatically convert the colors to CMYK.

This conversion can sometimes cause unexpected shifts.

For that reason, many designers switch their files to CMYK before printing. This allows them to see a closer representation of how the colors will appear on paper.

A Helpful Tip for Better Print Results

If you're designing something that will eventually be printed, start the project in CMYK color mode whenever possible. Additional articles will be available soon on how to work within popular free design programs!

This helps avoid unexpected color changes later and ensures the final printed result closely matches the design. If you're ever not sure- just whip off a copy to your local printer and ask them how your design will translate 😊