

The Color Wheel







Isaac Newton, and other scientists of the time around 1750 formed theories of light, saying that light can be divided into several parts. They concluded that white light is not a whole thing unto itself – it is the blending of the seven colors of the rainbow...

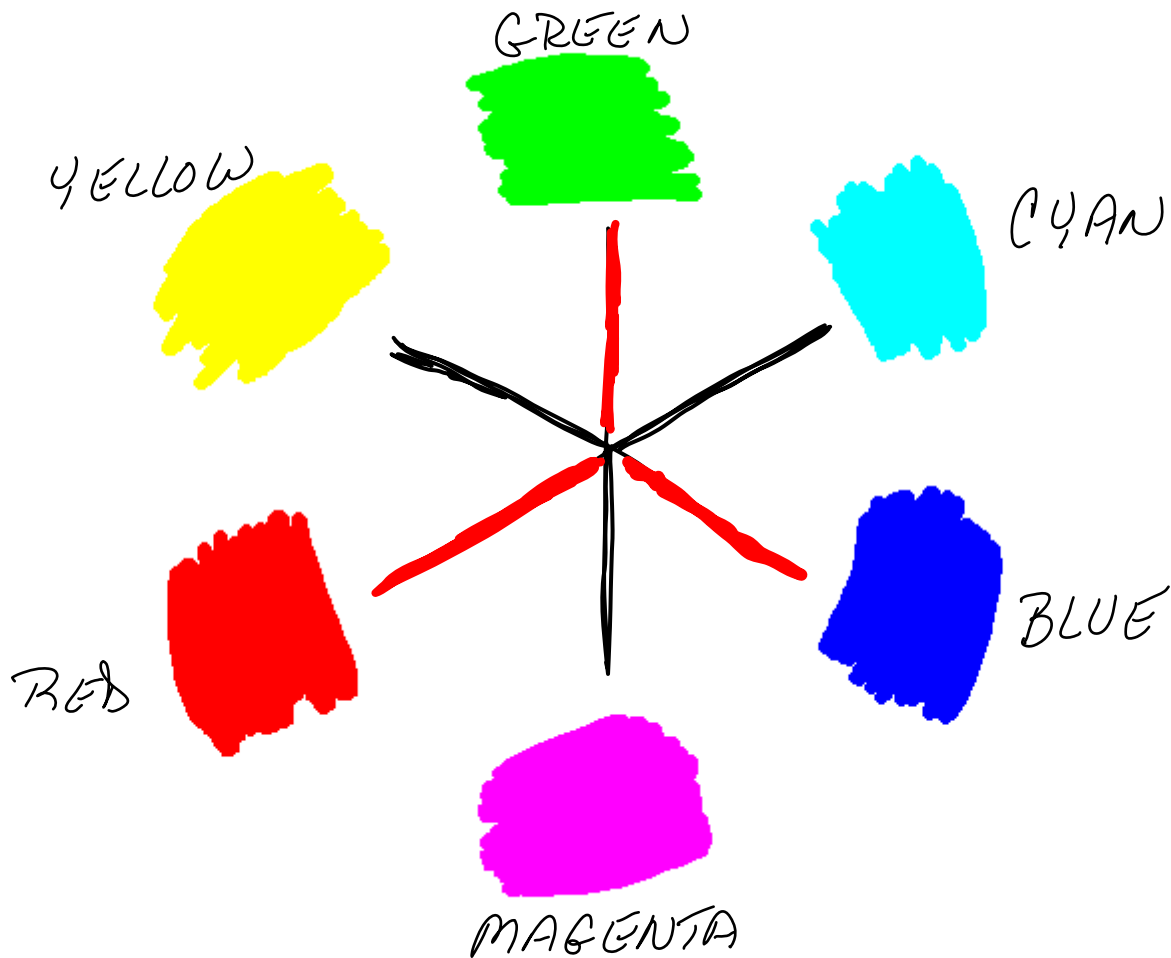
Johann Wolfgang von Goethe, around 1800 replied, *“Ever splitting the light! How often do they strive to divide that which, despite everything, would always remain single and whole.”*

Of course, the ancients had already decided that humankind would have to go through a stage where all whole things were seen as divided into parts ...


Lao Tzu, wrote in one of the world’s oldest books, The Tao Te Ching around 500 BC, *“Once the whole is divided, the parts need names. There are already enough names. One must know when to stop.”*

Maybe now we are ready to stop. Maybe we can stop seeing white light as made of colors and naming all of the colors of the rainbow as the parts of light. Maybe we can see white light as a whole thing in itself. Maybe we can see that white light can produce all of the colors by the wonderful way it interacts with the physical world.

Color Wheel



 **ADDITIVE
PRIMARIES
(LIGHT)**

 **SUBTRACTIVE
PRIMARIES
(MATERIAL)**

Color Mixing

Additive Mixing (mixing Light): { Red + Blue + Green = White }

Red + Blue = Magenta

Red + Green = Yellow

Green + Blue = Cyan

Red + Cyan = White

Green + Magenta = White

Blue + Yellow = White

Subtractive Mixing (mixing material): { Yellow + Cyan + Magenta = Black }

Yellow + Cyan = Green

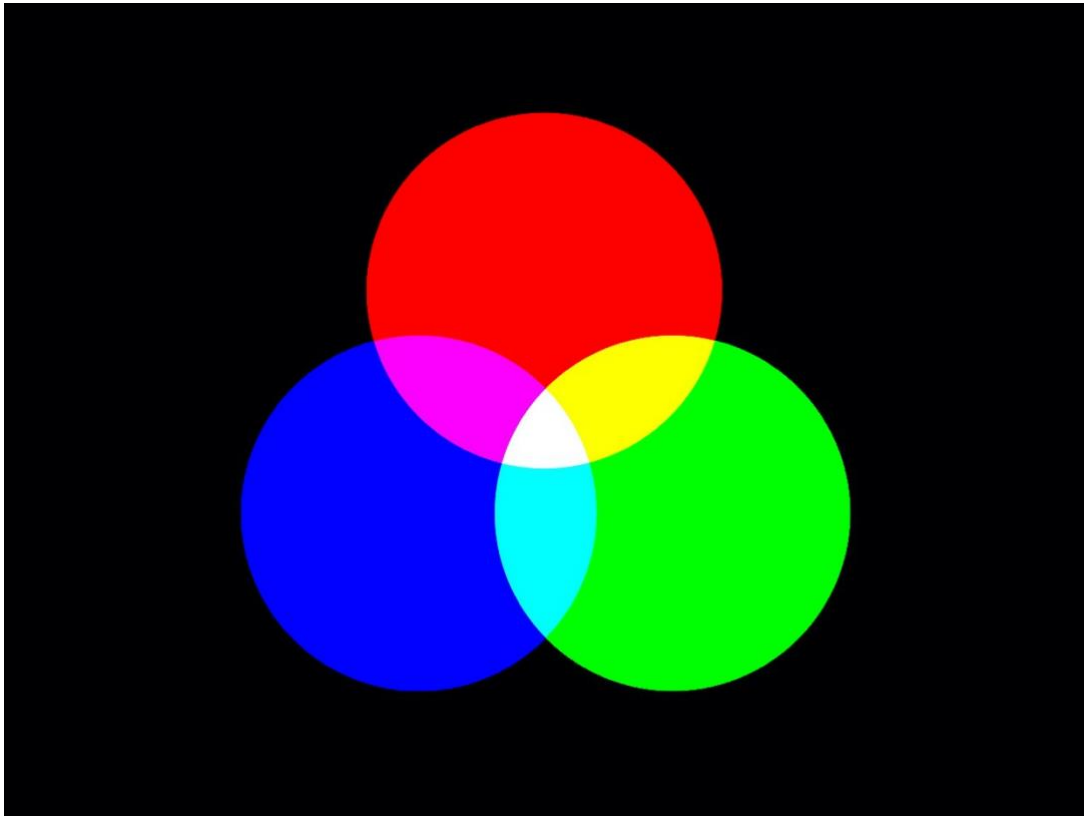
Yellow + Blue = Black

Yellow + Magenta = Red

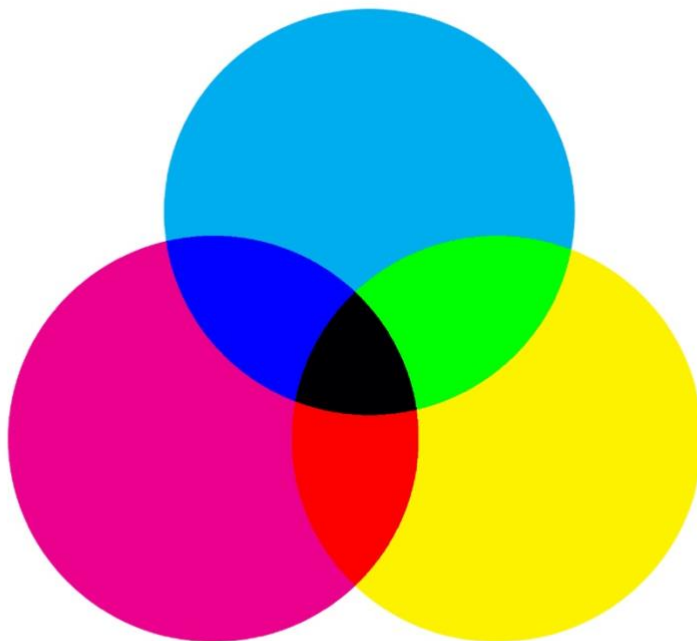
Magenta + Green = Black

Cyan + Magenta = Blue

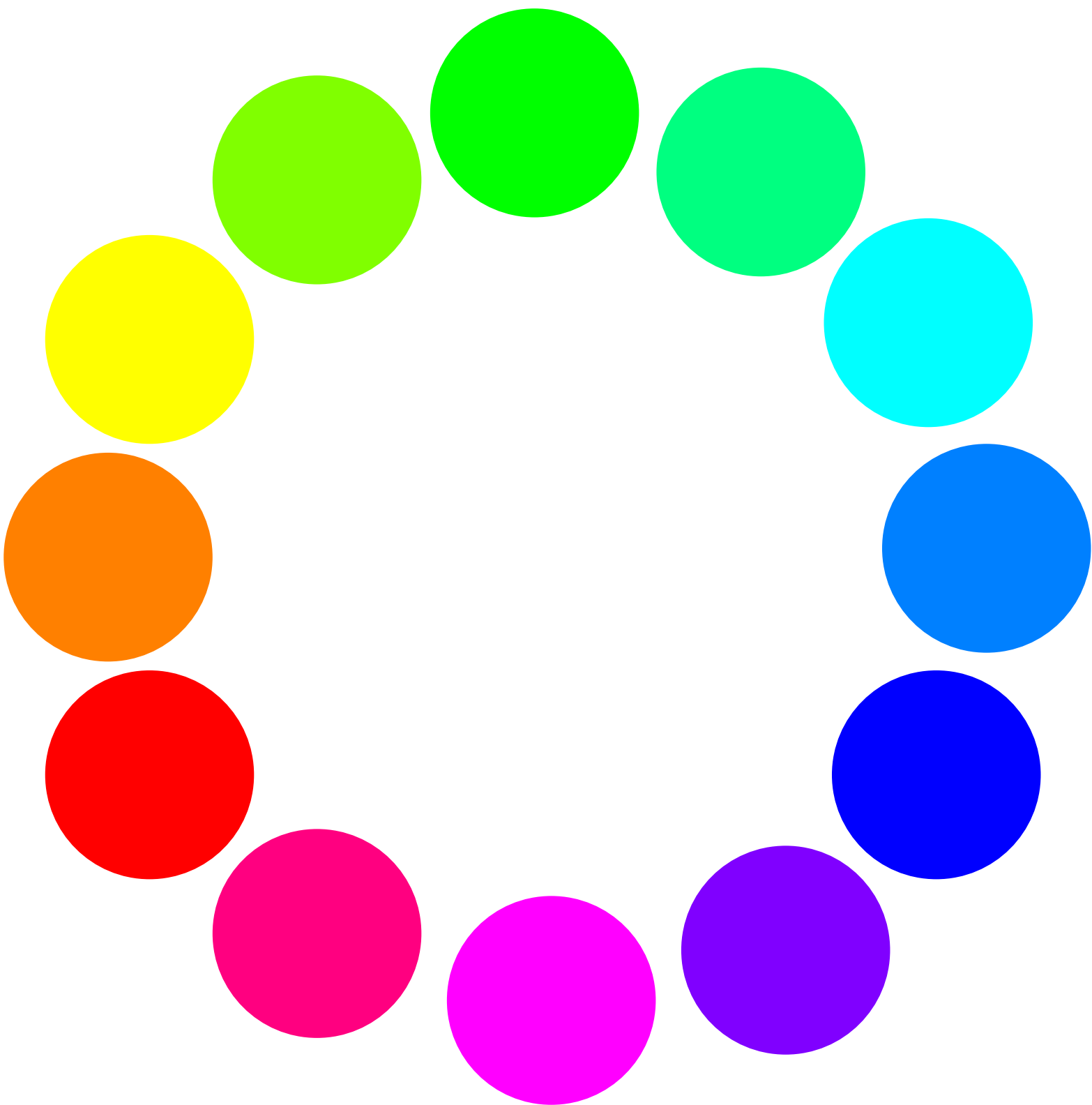
Cyan + Red = Black

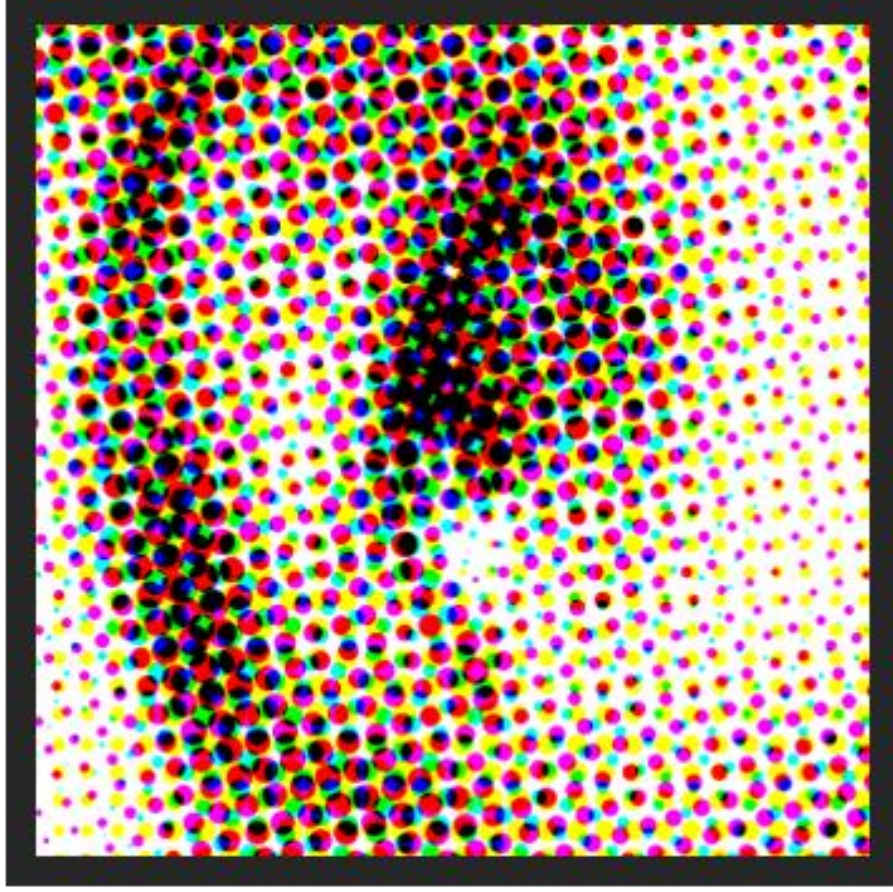


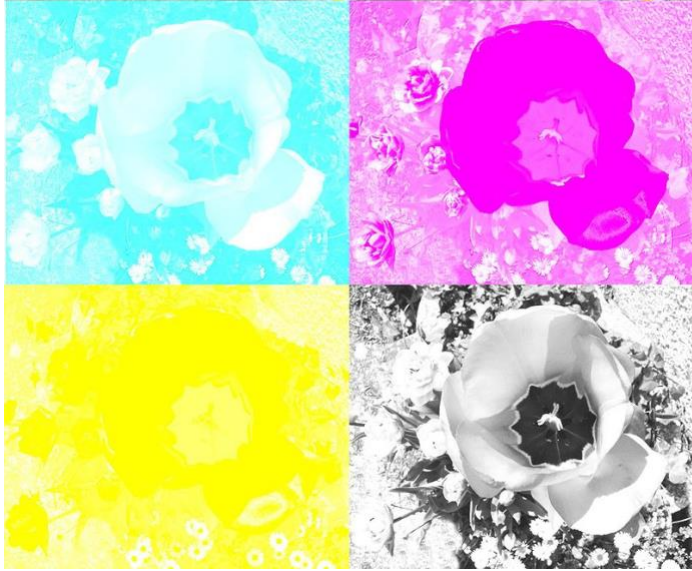
The **ADDITIVE PRIMARIES** add lights together until they make white.



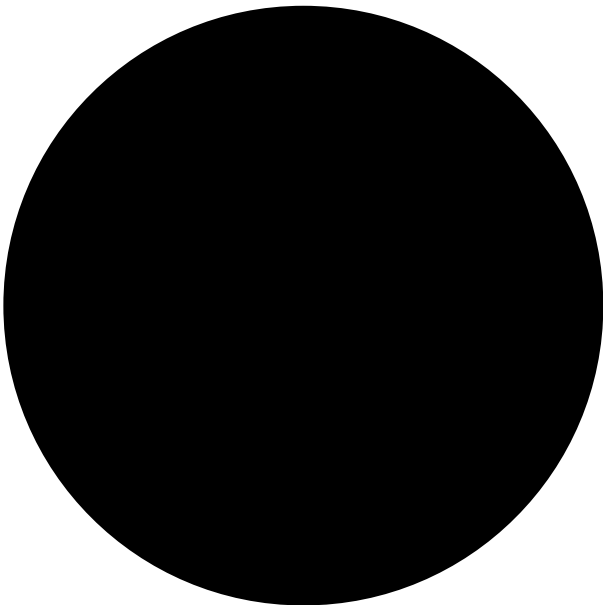
The **SUBTRACTIVE PRIMARIES** add material (and subtract light) until they make black.



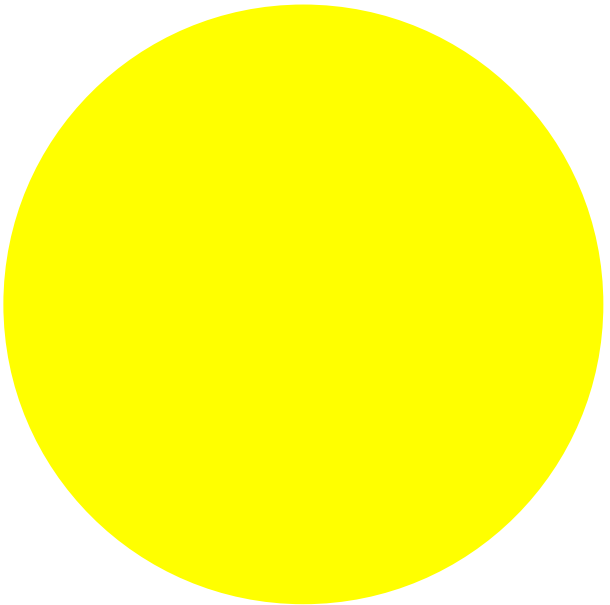




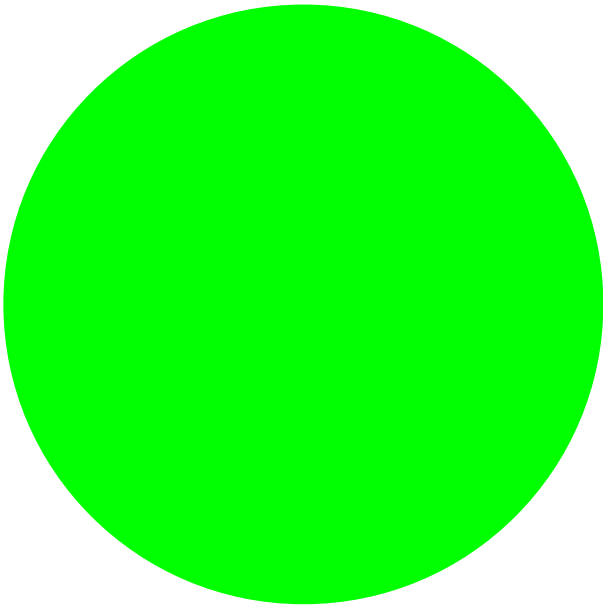
red = 0, green = 0, blue = 0



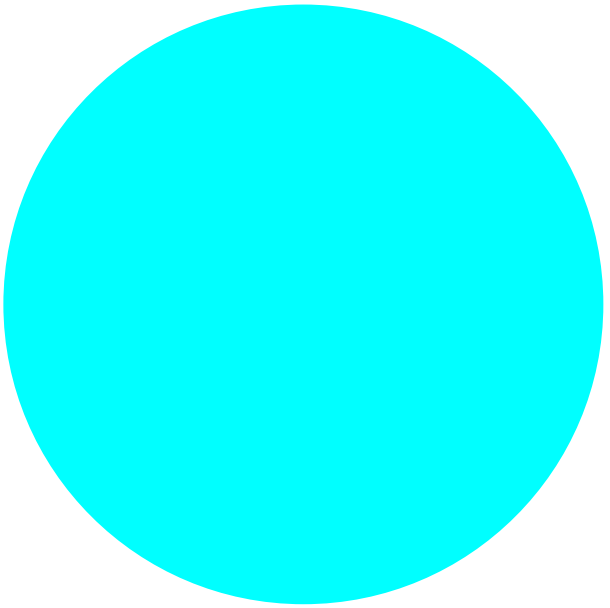
red = 255, green = 255, blue = 0



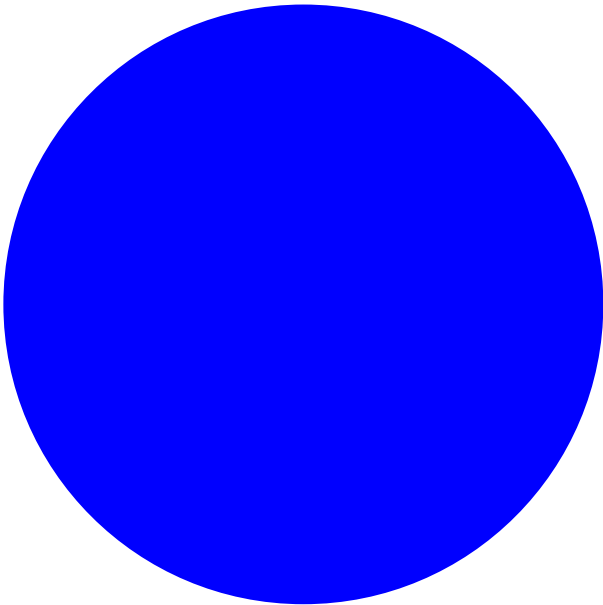
red = 0, green = 255, blue = 0



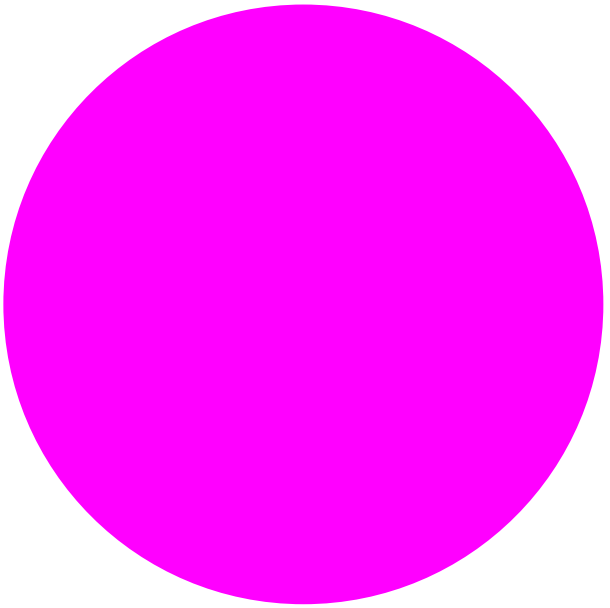
red = 0, green = 255, blue = 255



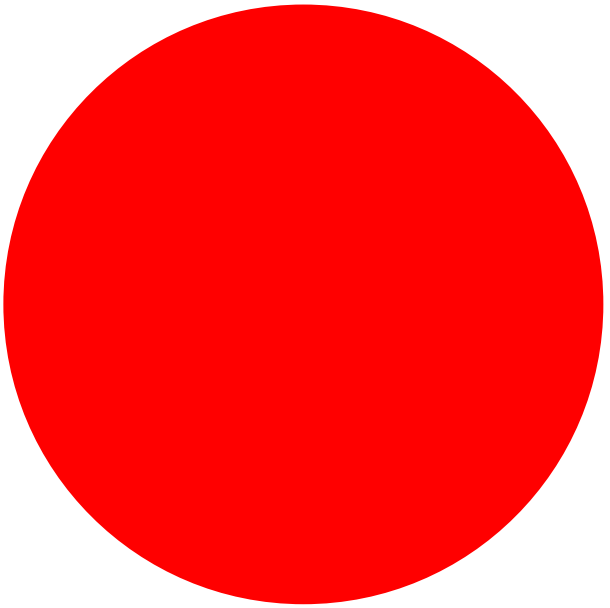
red = 0, green = 0, blue = 255



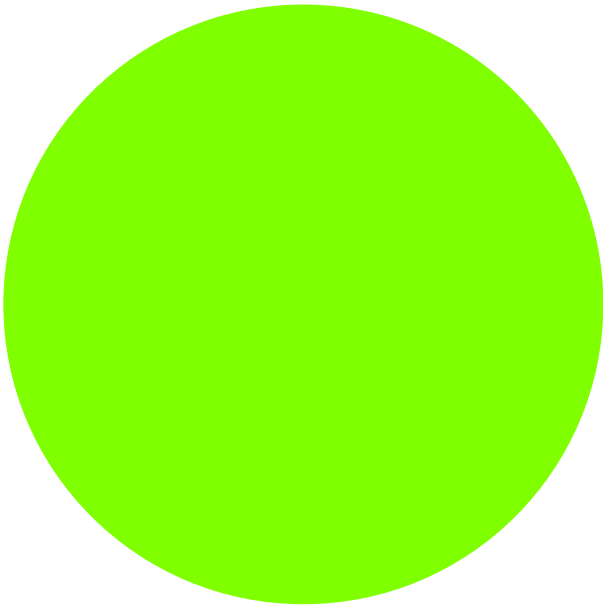
red = 255, green = 0, blue = 255



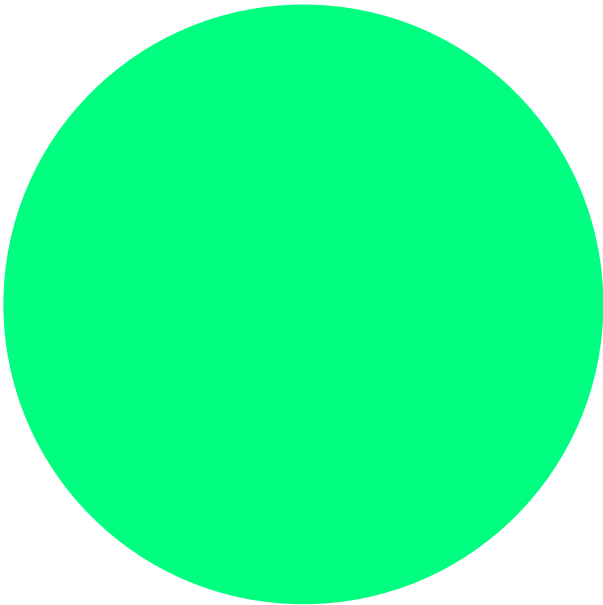
red = 255, green = 0, blue = 0



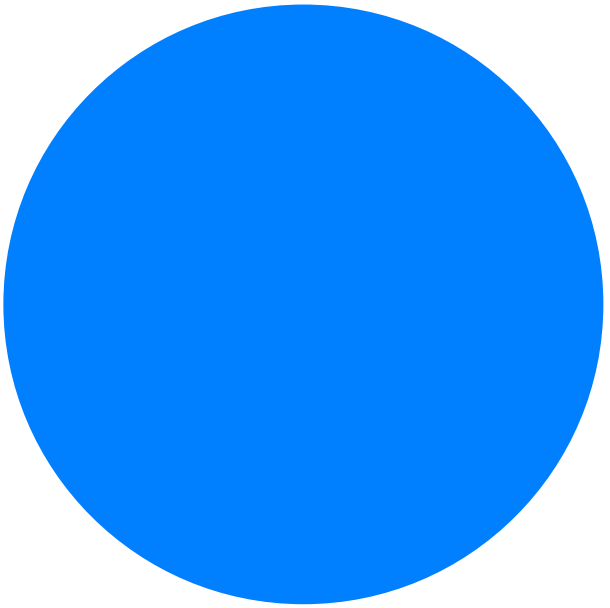
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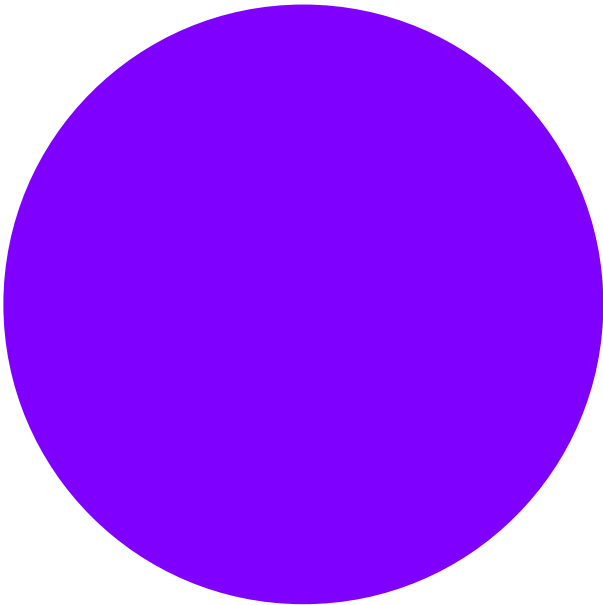
red = 0, green = 255, blue = 128



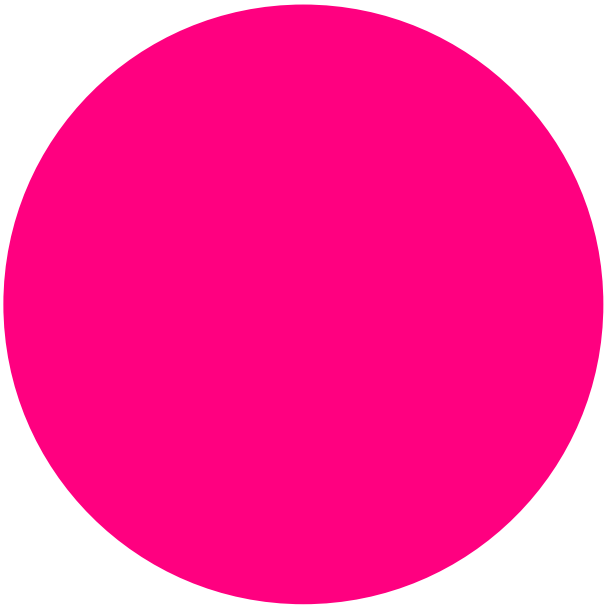
red = 0, green = 128, blue = 255



red = 128, green = 0, blue = 255



red = 255, green = 0, blue = 128



red = 255, green = 128, blue = 0

