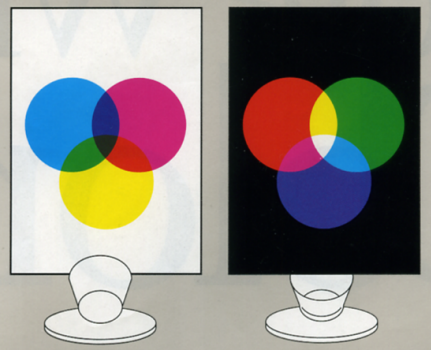
Color Concepts

Understanding a few basic theories can aid in the application of color desktop-publishing and presentation tools. **By Stuart Silverstone**

Printed vs. Projected Color

Printing somewhat transparent inks onto opaque paper creates reflective artwork based on subtractive color (subtracting wavelengths from white light). The primaries **cyan** (C), **magenta** (M) and **yellow** (Y) can be combined to produce any other color and, with black (K), for producing improved contrast and printing options on white paper.



Projecting light through colors on slide film creates transparent artwork based on additive color (adding color lights from darkness). The primaries **red** (R), **blue** (B) and **green** (G) can be combined to produce any other color on an otherwise black background—where the secondary combinations are the subtractive primaries.

A Color Wheel

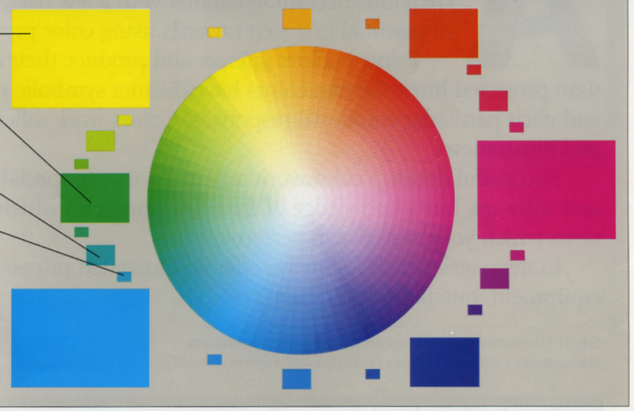
The three additive printing **primaries**

can be combined, in equal parts, to produce three **secondaries**

—or, in unequal parts, to produce in-between **tertiaries**

quartenaries

or other mid-color tints.



Color Separations

This continuous-tone color photo can be broken down into its four color components...

then screened into black-and-white separations...

and combined, using color inks, on a printing press...

to produce a faithful halftone reproduction

Process Color Tints

Using either desktop or conventional means, a variety of colors can be printed by overlaying tints of the four process colors. Some examples follow...

	Turquoise	Purple	Steel Blue	Rose	Peach	Warm Grey	Forest Green
Cyan	100%	60%	20%	10%	0%	0%	100%
Magenta	0%	80%	0%	50%	40%	7.5%	20%
Yellow	60%	0%	0%	0%	60%	10%	100%
Black	0%	30%	10%	0%	0%	70%	0%

Illustrations by Chris Krueger