Colour, Graphics & Layout

- How we see
- Colour systems
- Graphic files
- Composition
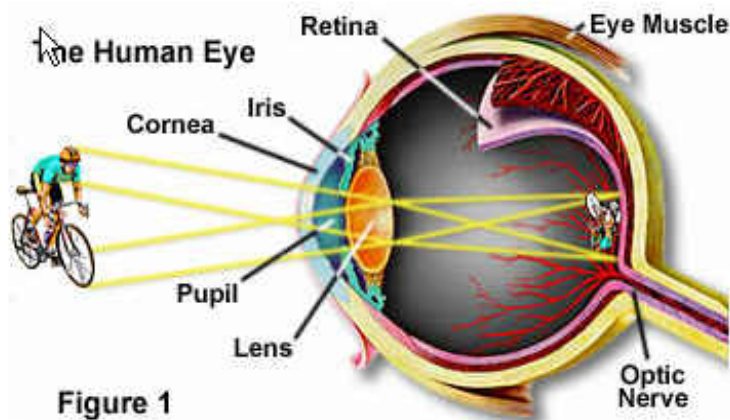
Colour, Graphics & Layout

How the Eye Sees Color

1. All the invisible colors of sunlight shine on the object.

2. The surface of the object absorbs all the coloured light rays, except for those corresponding to and reflects this color to the human eye.

3. The eye receives the reflected red light and sends a message to the brain.

Colour, Graphics & Layout

The Human Eye

Retina   Eye Muscle

Cornea   Iris

Pupil

Lens

Optic Nerve

Figure 1

human eye can see 7,000,000 colors.

Colour, Graphics & Layout

Color Systems

Additive Color
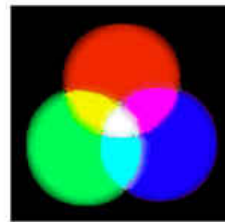The RGB Color System

![mit220]

Colour, Graphics & Layout

Subtractive Color
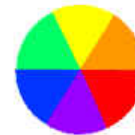
Red Yellow Blue

Color Systems

Additive or RGB

Subtractive or Red, Yellow, Bluw

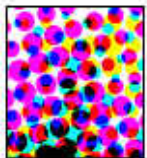Primary Color   Secondary Color   Tertiary Color

Colour, Graphics & Layout

The CMYK Color System

Cyan, Magenta, Yellow and Black

Printing or CMYK (Cyan, Magenta, Yellow and Black)

Colour, Graphics & Layout

Definitions

- ◆ Hue/Color
- ◆ Value
- ◆ Saturation
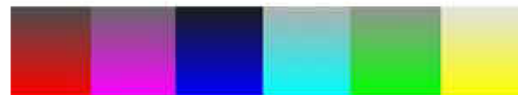- ◆ Contrast
- ◆ Brightness or Tint

Color Theory

spectrum

hue

value

saturation

Colour Themes

Colour Themes:

Complementary colors:

colors on the opposite side of the color wheel

Colour Themes

Colour Themes:

Analogous or similar

Colours next to one another on the wheel

Monochromatic

One colour, or one plus black

Colour Themes Complementary

Colour Themes Analagous

Web-Safe Colour

Many browsers use 8-bit monitors

That means they can only see 256 colours

Gets worse: of those, only 216 are "safe"

- Across platforms, browsers, etc.

Web-Safe Colour

Not using web safe: you could end up with dithering

Figure 1

The image on the left demonstrates unwanted dithering, while that on the right shows a solid, nondithered color.
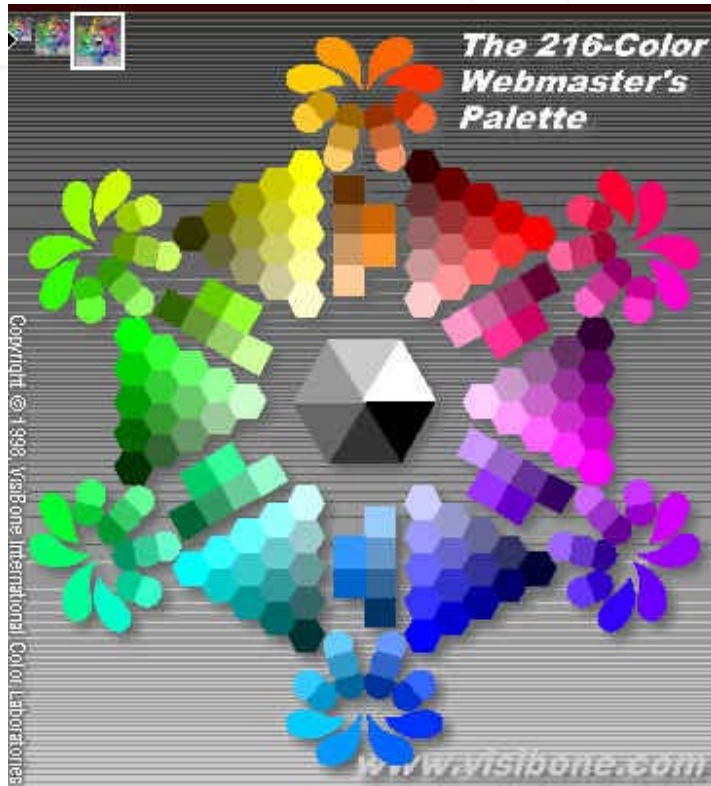
Web-Safe Colour

What kinds of artwork?

- Hex: within the code for backgrounds, text, links of all kinds. Always.

- Line art: graphics that contain solid colors. For areas of solid color

- Continuous Tone art: graphics or photos that contain blends, gradients, tones and soft focus. Never.

- Hybrid art: art that combines continuous tone and line art. Only for areas of solid color.

The Web-Safe Palette

The 216-Color Webmaster's Palette

www.visibone.com

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Graphic Types

Bitmap Vs Vector files

Familiar bitmap formats: psd, pict, bmp, or Tiff
- ◆ The artwork is stored in a series of values (pixels).

Vector: Illustrator, Quark Xpress, EPS and Postscript
- ◆ The artwork is stored as mathematical instructions. Stored as a series of lines, curves and splines. These are not used in the web.

Graphic Types

Bitmap Vs Vector files

- Vector- look good scaled.
- Bitmap - look terrible scaled.

- Vector - better for line art, type, illustrations.
- Bitmap - photos, soft edges, drop shadows, gradients, etc.

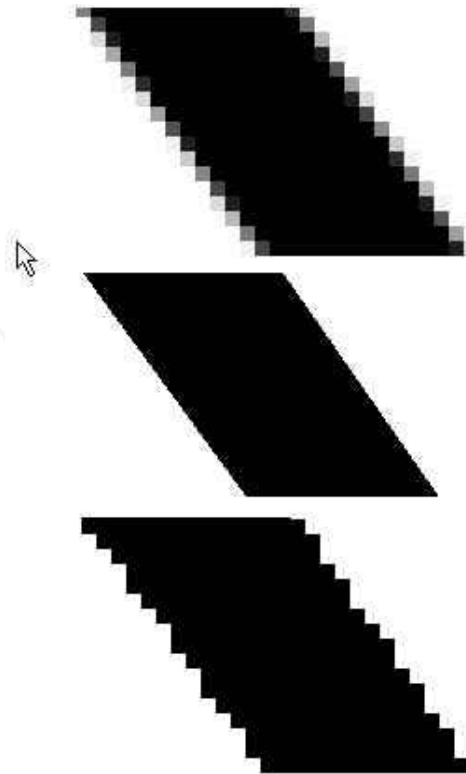- Flash is the only web-based vector format that is supported by browsers.

Graphic Types

Close-up of vector and bitmapped art

Kinds of bitmappped web files:

JPG

GIF

PNG

Web graphics

JPG – for photographs and images with continuous tone, gradients, etc.

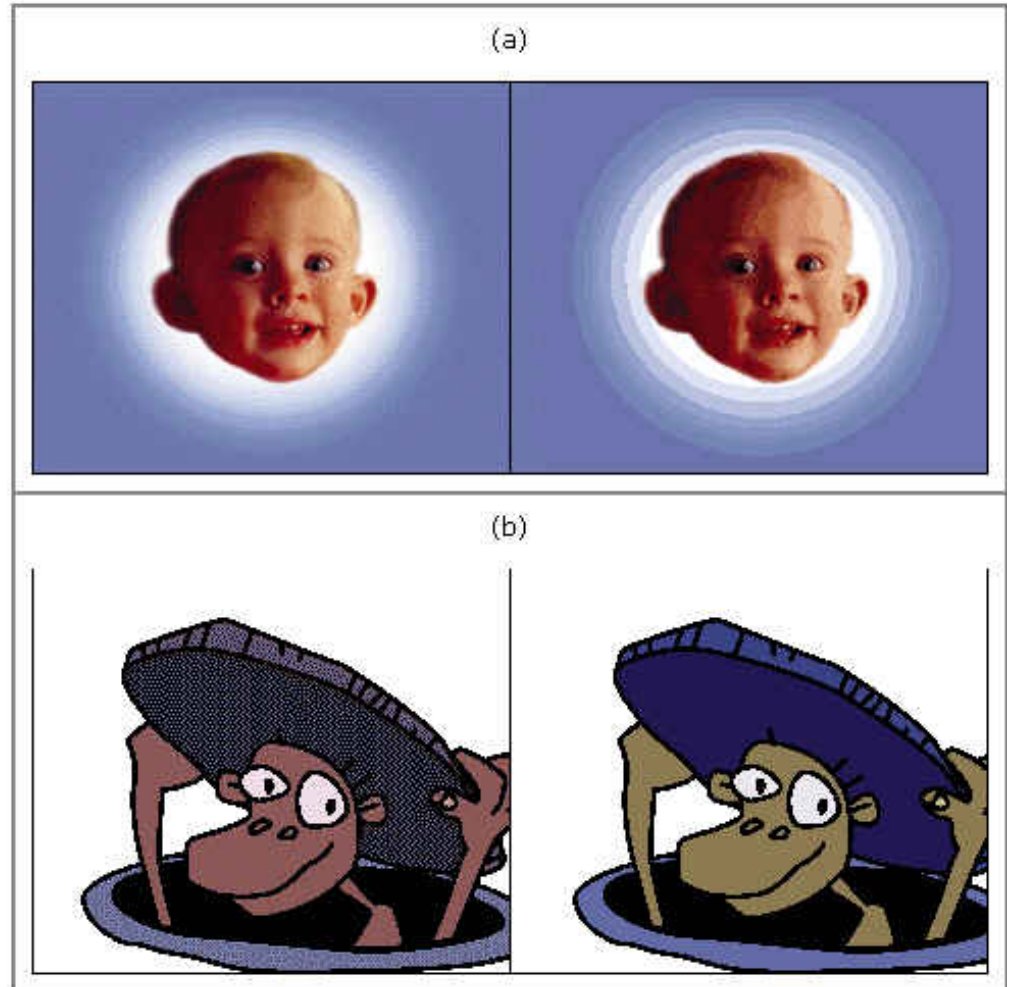GIF – for line art, cartoons, text, and any image with large chunks of solid color

If the artwork contains both photos and text, try both kinds of compressions, and see which works best!

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Graphics

Other terms:
Dithering – good & bad

(a) Image enhanced by dithering--bands are eliminated in the left-hand image; (b) image ruined by dithering--flat color images should not be dithered.

(a)

(b)

Graphic Types

Other terms:

Alias vs Anti-aliasing

Aliasing versus Anti-aliasing

no anti-aliasing

smooth anti-aliasing