Chapter 4

Graphic

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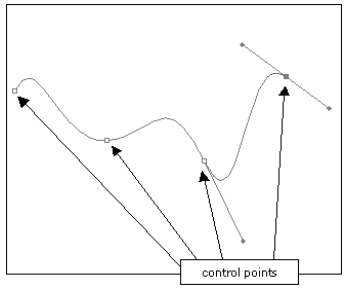
.: Preparation for Creating Image

- Before commencing the creation of images in Multimedia, you should:
  - Plan your approach using flow charts and storyboards.
  - Organize the available tools.
  - Have multiple monitors, if possible, for lots of screen real estate.

- Still images may be the most important element of a multimedia project. Depend on display resolution, h/w and s/w

- Either bitmap/raster or vector



.: Making Still Images

- Bitmaps are an image format suited for creation of:
  - Photo-realistic images
  - Complex drawings
  - Images that require fine detail

Bit Depth	Number of Colors Possible	Available Binary Combinations for Describing a Color
1-bit	2	0, 1
2-bit	4	00, 01, 10, 11
4-bit	16	0000, 0001, 0011, 0111, 1111, 0010, 0100, 1000, 0110, 1100, 1010, 0101, 1110, 1101, 1001, 1011

24 bits depth.
Millions of colors.

Dithered to 8 bits.
Adaptive palette
of 256 colors.

Dithered to 8 bits.
Macintosh palette
of 256 colors.

Dithered to 4 bits.
16 colors.

Dithered to 8-bit
gray-scale.
256 shades of gray.

Dithered to 4-bit
gray-scale.
16 shades of gray.

Dithered to 1-bit.
Two colors, black
and white.

- Bitmaps can be inserted by:
  - Using clip art galleries
  - Using bitmap software
  - Capturing and editing images
  - Scanning images

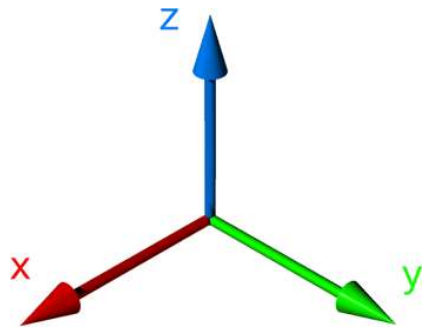
V48
Eat, Drink, Dine

V12
Food & Dining

- Image editing programs enable the user to:
  - Enhance and make composite images.
  - Alter and distort images.
  - Add and delete elements.
  - Morph (manipulate still images to create animated transformations).

- Panoramas - created by stitching together

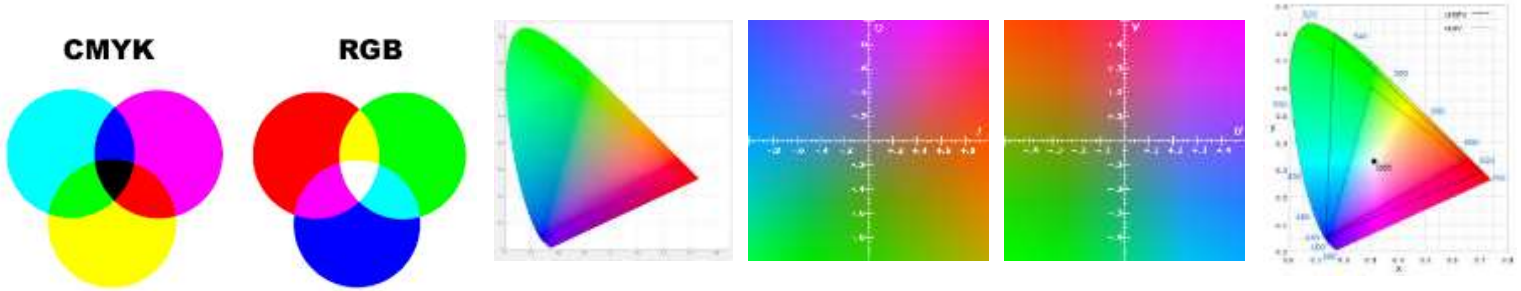
- Vector-drawn images are used in the following areas:
  - Computer-aided design (CAD) programs
  - Graphic artists designing for the print media
  - 3-D animation programs
  - Applications requiring drawing of graphic shapes



- How vector-drawn images work
  - A vector is a line that is described by the location of its two endpoints.
  - Vector drawing makes use of Cartesian coordinates.
  - Cartesian coordinates are numbers that describe a point in two- or three-dimensional space as the intersection of the X, Y, and Z axes.

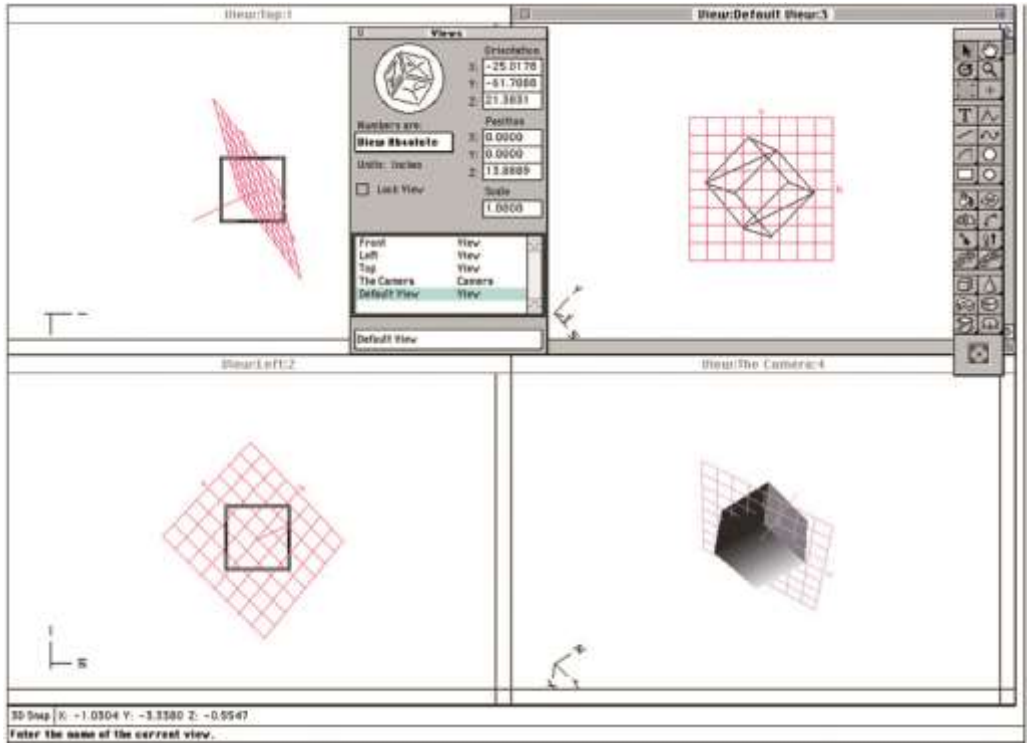
- Vector-drawn images versus bitmaps
  - Vector images use less memory space and have a smaller file size as compared to bitmaps.
  - For the Web, pages that use vector graphics in plug-ins download faster and, when used for animation, draw faster than bitmaps.
  - Vector images cannot be used for photorealistic images.
  - Vector images require a plug-in for Web-based display.
  - Bitmaps are not easily scalable and resizable.
  - Bitmaps can be converted to vector images using autotracing

- Models used to specify color in computer terms are:
- RGB model – A 24-bit methodology: color is specified in terms of red, green, and blue values ranging from 0 to 255.
- HSB and HSL models – Color is specified as an angle from 0 to 360 degrees on a color wheel.
- Other models include CMYK, CIE, YIQ, YUV, and YCC.



.: 3D Drawing and Rendering

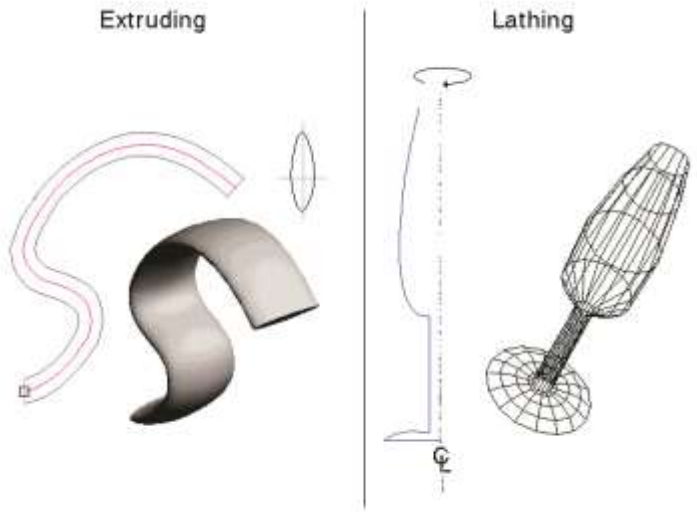
- 3-D animation, drawing, and rendering tools include:
  - Daz3D
  - Form*Z
  - NewTek's Lightwave
  - Autodesk's Maya
  - Google's SketchUp

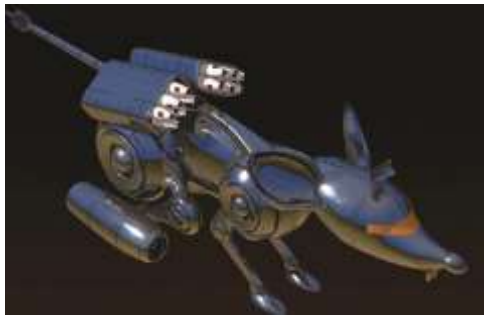


3-D applications provide x, y, and z axes and adjustable perspective views.

- Features of a 3-D application
  - Modeling - Placing all the elements into 3-D space.
  - Extrusion - The shape of a plane surface extends some distance.
  - Lathing - A profile of the shape is rotated around a defined axis.

- Rendering - Use of intricate algorithms to apply user-specified effects



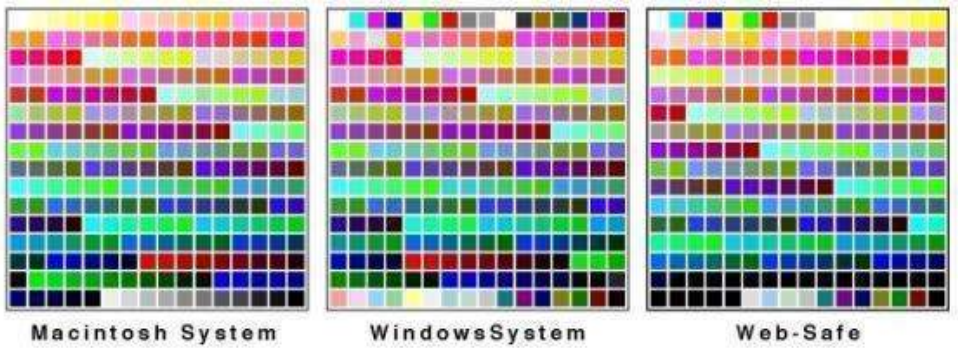


.: Colors

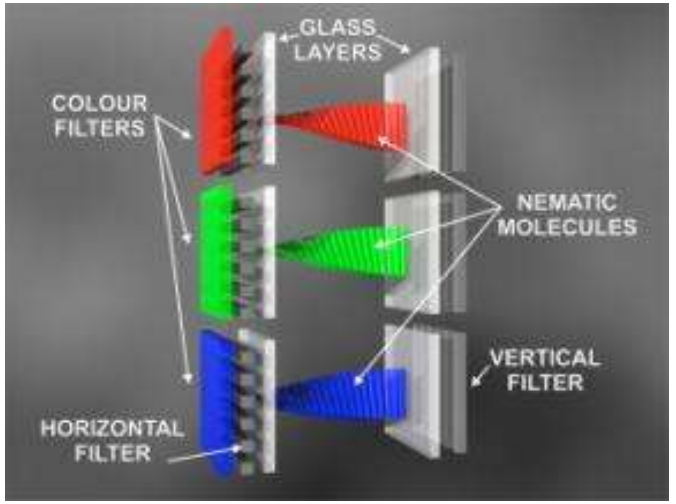
Understanding natural light and color

- Additive color – combine RGB eg. TV, monitor
- Subtractive color – for printing, CMYK
- Monitor-specific color
- Color models

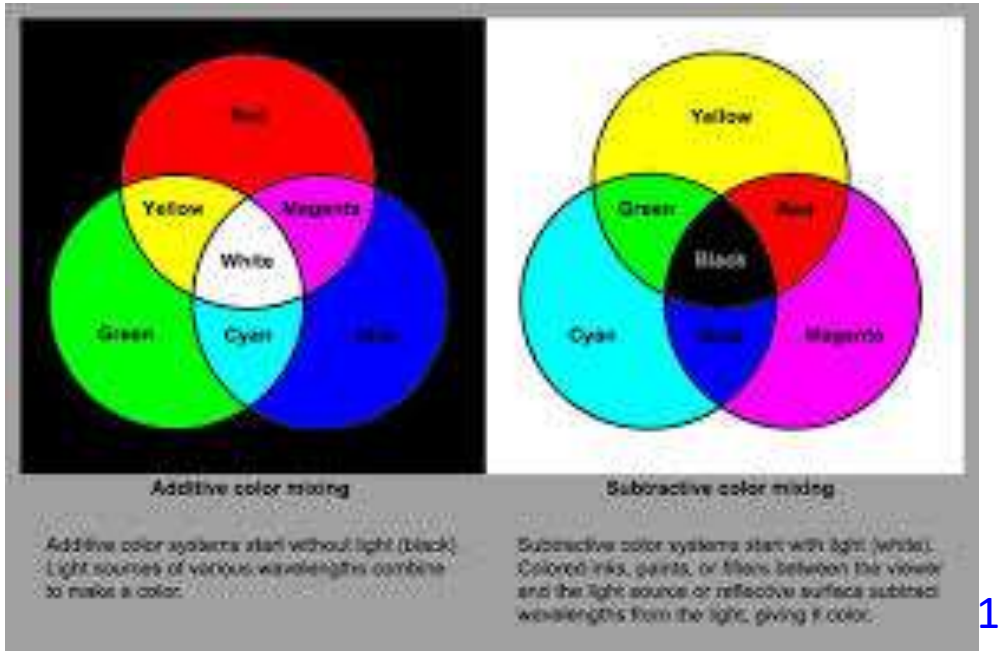
- Color palettes
  - Palettes are mathematical tables that define the color of pixels displayed on the screen.
  - Palettes are called “color lookup tables,” or CLUTs, on the Macintosh.



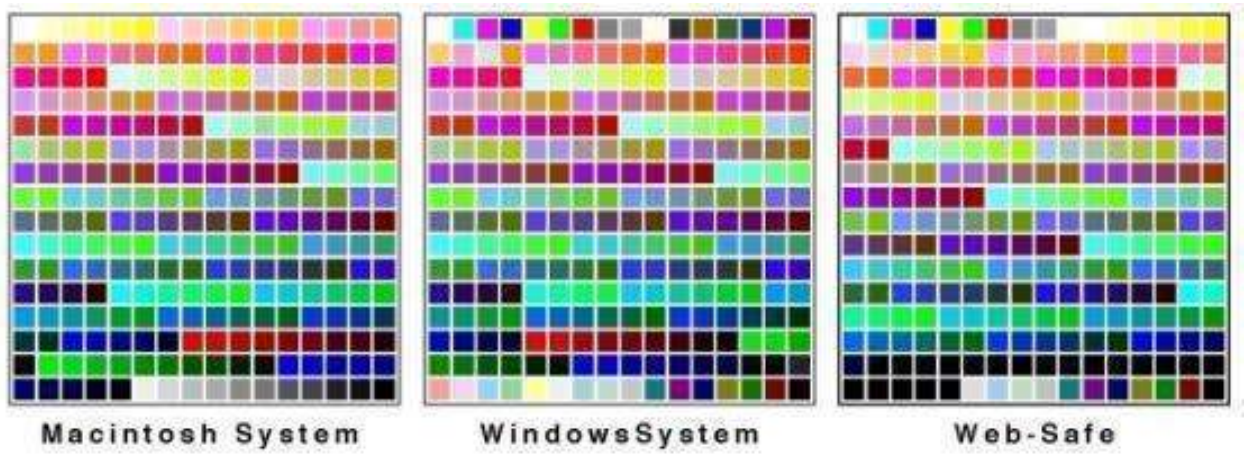
- Additive color
  - In the additive color method, a color is created by combining colored light sources in three primary colors - red, green, and blue (RGB).
  - TV and computer monitors use this method



- Subtractive color
  - In the subtractive color method, color is created by combining colored media such as paints or ink.
  - The colored media absorb (or subtract) some parts of the color spectrum of light and reflect the others back to the eye.



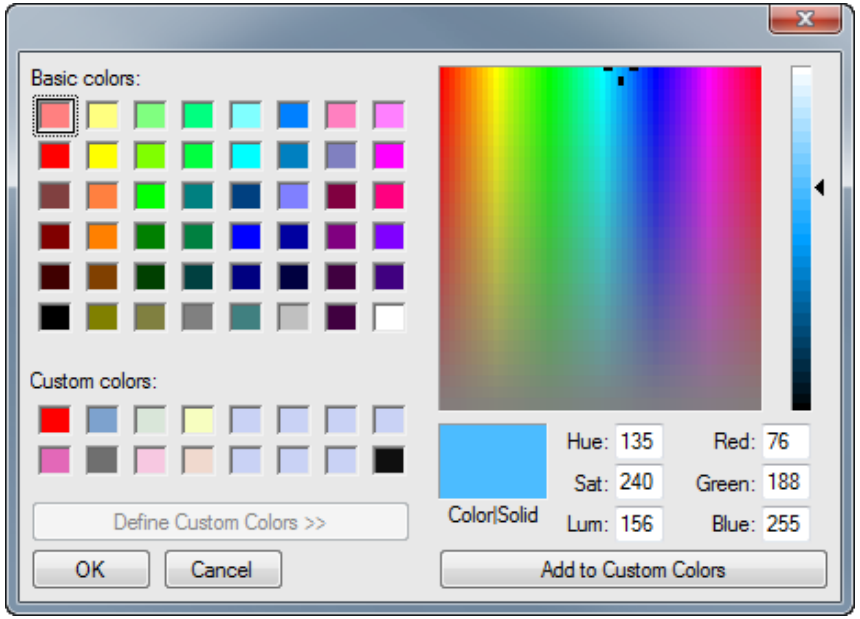
- Monitor-specific colors
  - Colors should be used according to the target audience’s monitor specifications.
  - The preferred monitor resolution is 800 x 600 pixels.
  - The preferred color depth is 32 bits.



- Subtractive color is the process used to create color in printing.
- The printed page consists of tiny halftone dots of three primary colors: cyan, magenta, and yellow (CMY).

- Dithering – is a process whereby the color value of each pixel is changed to the closest matching color value in the target palette.
- This is done using a mathematical algorithm.

- Color palettes
  - Palettes are mathematical tables that define the color of pixels displayed on the screen.
  - Palettes are called “color lookup tables,” or CLUTs, on the Macintosh.
  - The most common palettes are 1, 4, 8, 16, and 24-bit deep.



.: Image File Formats

- Macintosh formats – the most commonly used format is PICT.

- Windows formats – the most commonly used format is DIB, also known as BMP.
- Cross-platform formats – JPEG, GIF, and PNG
  - Adobe PDF (Portable Document Format)
  - PSD, AI, CDR, DXF – Proprietary formats used by applications
  - Initial Graphics Exchange Standard (IGS or IGES) – Standard for transferring CAD drawings

.: Image Editing and Design Tools

- Canva – is an online design tool that is widely praised and used by non-designers as well as professional graphic artists.
- Adobe Photoshop.
- Pixlr.
- Fotor
- GIMP
- Snappa
- PicMonkey
- CyberLink PhotoDirector.

.: Graphic Designing

- Seven Tips to Take Better Photos
  - Crop your images and clean them up.
  - Adjust white balance.
  - Adjust exposure and contrast.
  - Adjust color vibrancy and saturation.
  - Sharpen images.
  - Finalize and share

.: Graphic Designing (cont.)

- Research before you start designing
- Don’t be scared of scale
- Respect the space of other elements
- Use a small color scheme
- Use fonts to help inform the mood of your design
- Limit your typefaces and keep your font in the same family
- Use hierarchy to order your content
- Play with symmetry
- Be original
- Create Clean, crisp and clear imagery
- Create order with alignment
- Imitate and create


Thank
you!


Q&A