Introduction to Adobe Photoshop 4.0

This is part I of two workshops designed to introduce you to Adobe Photoshop, a powerful graphics creation and manipulation tool. You don't need to be an artistic genius or have previous experience with Photoshop.

Photoshop 4.0 for Macintosh and Photoshop 4.0 for Windows are almost identical programs. Keyboard commands are the same except that Mac uses the command (Apple) key whereas Windows uses the Control key, and Windows calls the Option key Alt.

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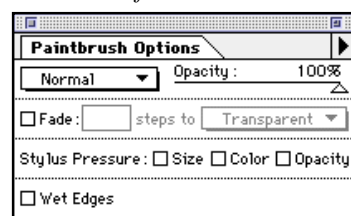
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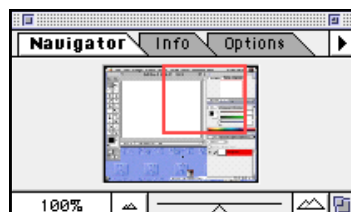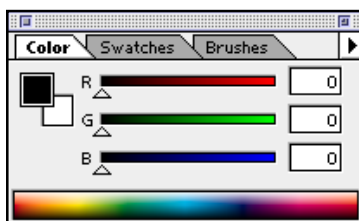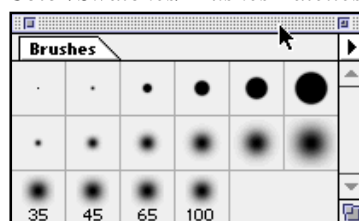

Navigator Palette
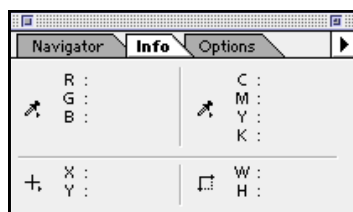
Info Palette

Options Palette

Color/Swatches/Brushes Palettes

Brushes Palette

Photoshop Basics

Palettes

Navigator: This palette presents a thumbnail view of the image and a highlighted box that indicated the size of the image window. Across the bottom of the palette are the image magnification and the zoom buttons and slider.

Info: This palette gives you information about the coordinates of the cursor and color information for the pixel directly under the pointer.

Options: The Options palette changes names depending on which tool is selected. It allows you to choose the attributes, appearance, or behavior of most tools.

Color/Swatches: These are color selection palettes used to set colors that will be used by your tools. Colors that you sample (click) will change the foreground or background (Option (Alt) - click) color on the toolbox. You can set special color palettes or add your own custom colors to the Swatches palette.

Brushes: This palette contains the currently defined brushes and works with all eight painting tools, allowing you to select the shape and size of the tool.

Actions: This palette makes it easy to reproduce frequently used multistep processes and techniques. You use the palette both to execute actions and to create or edit them.

*Layers:* The Layers Palette allows you to create new layers, delete layers, move layers within a file, duplicate layers, view a single or selected layer(s), and set options for each layer in an image.

Channels: Channels are the color information of an image, similar to layers. They are also used to save selections (alpha channels).

Paths: The Paths palette is for drawing vector paths just like
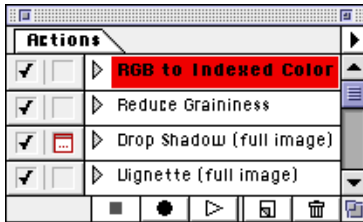
Actions Palette
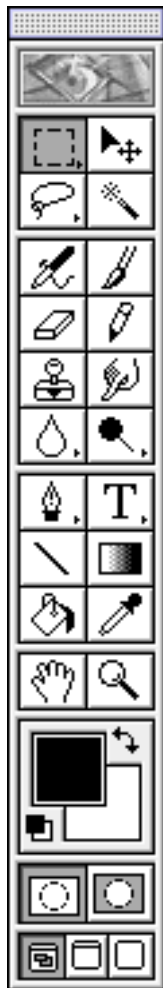
Photoshop's Toolbox. Tools are listed left to right, top to bottom.

in Illustrator. A pen path is a Bezier curve path created with the pen tool.

Contents of the Toolbox

Marquee: Rectangular, elliptical, or single column or row selection tool; includes Crop Tool

Move: Moves a selection, layer, or guide

Lasso: Freeform or freeform polygon selection tool

Magic Wand: Makes selections by contiguous color range

Airbrush: Paints a soft-edged (spray-painted) stroke

Paintbrush: Paints a soft-edged stroke

Eraser: Reverts pixels to the background color or a saved image, or removes pixels on a layer

Pencil: Paints with hard-edged stroke

Rubber Stamp: Clones (duplicates) an area: picks up an area of color/pattern and repeats it elsewhere

Smudge Tool: Smudges an image like a finger dragging through chalk, pastel or wet paint

Sharpen/Blur: Sharpens or blurs a part of an image

Dodge/Burn/Sponge: Lightens, darkens or increases/ decreases color saturation

Pen: Used with the Paths palette to create vector paths

Type: Creates text; select font, size, alignment, style; includes Type Mask tool for text-shaped selection borders

Paint Bucket: Fills single color area with foreground color

Gradient Tool: Fills selection with a blended color

Line Tool: Draw straight lines of varying width with optional arrowheads

Eyedropper: Samples a color from your image

Grabber Hand: Moves viewpoint of image in window, without changing the image itself

Zoom: Magnify or zoom out from an image; 1/16 to 16 times normal size

Foreground/Background color: Buttons that allow you to change, swap, or revert to default color settings

Standard/Quick Mask Mode: Buttons that turn the quick mask on and off

Screen Mode Buttons: Allow swapping among normal display, full-screen image with menu bar, or full-screen image without menu bar.

Using Selection Tools

☆ The Marquee selects oval, round, square, or rectangular areas. Option (Alt)-clicking on the tool toggles between the rectangle and the ellipse. Holding the Shift key while selecting constrains you to perfect squares or circles. The Option (Alt) key draws the rectangle or ellipse around a central point. If you select an area that includes transparency with this tool, the selection boundary will

shrink to include only areas of active pixels.

☆ The Lasso tool lets you draw a selection boundary. For complex, detailed selections, hold down the Option (Alt) key while clicking from point to point on the outline of your selection. This method draws straight lines and allows for much greater control over what is selected. When you release the mouse button, the selection will close with a straight line from the ending point to the starting point.

☆ The tolerance of the Magic Wand can be changed so that more or fewer adjacent color areas are selected. The lower the tolerance, the fewer the color areas selected. To fill out a selection use **Select... Grow.** To select everything noncontiguous in the color tolerance, use **Select... Similar.**

☆ To add to a selection with any selection tool, hold down the Shift key while making additional selections.

☆ To subtract from a selection with any selection tool, hold down the Command (Control) key while selecting what you wish to remove.

☆ Change a selection to the foreground color with **Edit... Fill** or by pressing Option-Delete. Press Delete to fill with the background color.
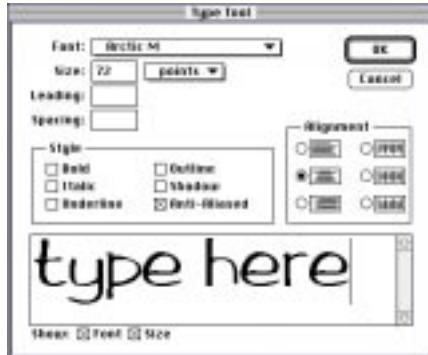
Using the Type Tool

☆ To use the type tool, first select the color that you wish your letters to be. Then click on the type tool and click in your document. If you do not click exactly where you would like the type to appear, don't worry. You can change the location later.

☆ The Type Dialog Box will appear. Type the point size you would like in the appropriate box. Click any style options you would like, such as bold, italics, or anti-aliased (smooth edges). Select the alignment: right, centered, left, or the various top-to-bottom choices. Choose your font from the pop-up list. Then type your text in the box at the bottom exactly as you want it to appear. If you want some text to be on a second line, you must press the Return key. The type will appear in the box in the font, style and size you have chosen. Click OK when you are done.

☆ Your type will appear in your document in the active color. It will also be selected. To move it, move the mouse over the text until the pointer becomes an arrow. Click and drag the text to the desired position and release the mouse button. Click anywhere else in the document, or type Command-D to drop the selection and see your text.

The Type Tool Dialog Box
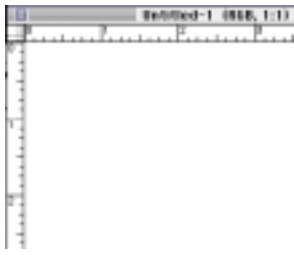
with Rulers and Zero Point showing

Layers Palette

Photoshop's representation of Transparency

☆ **Note:** For complex text images, using Adobe Illustrator or Macromedia FreeHand is recommended. Images created in Illustrator may be easily imported into Photoshop. Use of Illustrator or FreeHand are not covered in this workshop.

Rulers

☆ To show rulers on the top and left sides of a document window, choose Show Rulers from the View menu. When the rulers appear, the units will be the same as those you last selected in the Info palette. Reset the units in the Info palette or through the Units submenu of the Preferences command off the File menu. The cross-hair in the upper left hand corner of the rulers is used to set the Zero Point.

Using the Layers Palette

Layers are like clear sheets of acetate laid over your background layer. They allow you to add to and change your image without losing the paint underneath.

Create a new layer. Click on the New Layer icon at the bottom left of the palette.

Delete a layer. Drag the layer to the trash can at the bottom right of the palette.

*Move a layer within a file.* Drag the layer name or thumbnail to the desired location and drop it.

Duplicate a layer. Drag the thumbnail of the layer you wish to copy to the New Layer icon.

*Hide a layer.* Click on the eye icon in that layer bar.

View a single layer. Option (Alt)-click on the eye icon of the layer you'd like to isolate. Note that this does not automatically make the layer active. Option-clicking again will make all layers visible again.

Opacity refers to how much of the image that is beneath a given layer is visible through that layer. 100% opacity means the layer is totally opaque (solid) wherever there are colored pixels.

Preserve transparency is layer-specific. It masks out any transparent pixels on a layer, so only pixels that already have paint can be altered. This is similar to how a selection does not allow you to paint outside the marching ants, without the bother of making a selection.
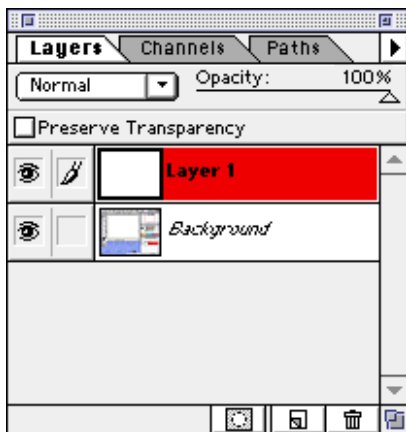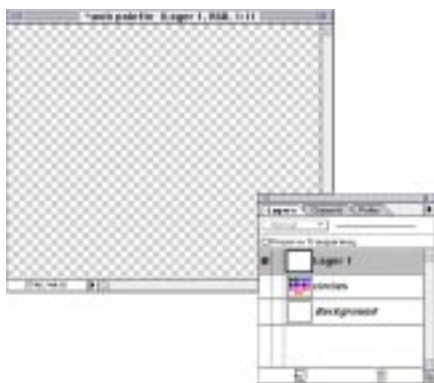
Transparency

☆ The gray and white checkerboard you sometimes see in Photoshop represents transparency. It is like painting on a clear sheet of acetate. When you draw on the transparency, only the pixels that you have altered contain color information (these are the active pixels). If you select part of an image on a layer, the background will not be part of the selection.

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Creating a New Image

Notice that when Photoshop is launched, it does not automatically open a blank file for you. You will see only the palettes that you left open the last time you quit Photoshop. All of the lab machines at SSU should open with the default palettes and settings. The palettes can be reset to their original locations through the File... General Preferences dialog box.

Open a new document. Choose the size you desire. You can easily make it smaller later, so overestimate, if necessary. We could also add to the size later. You can choose a name for your document now, but remember, *this does not save a copy on your disk!* You must use the **File... Save** or **File... Save As...** command to do this.

Choose 72 dpi and leave white as the background color for our practice files. Your saved file size will increase exponentially as you increase the dpi. Therefore the saved file size on a 150 dpi file is *four times* that of a 72 dpi file, not just twice as large.

Undo

☆ Photoshop only allows one level of Undo — so be careful! Always Save before attempting anything tricky. And remember, just about *everything* is Undo-able in Photoshop, including things like deselecting. So if you move part of your image and then deselect it, it's too late to Undo the move!
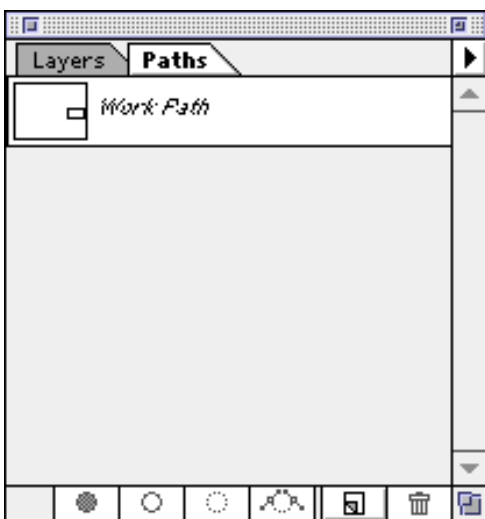
Paths

Paths can be frustrating to learn, but powerful to use.

The Pen Tool is the only tool that does not reside in the toolbox. It is a Bezier curve drawing device. You can create lines and shapes that can be fine-tuned, saved as paths, filled or stroked, and converted to selections. Anchor points are joined by segments, which link to make a subpath. Subpaths combine to form paths.

Drawing a straight line: Click in the image window with the pen tool to create an anchor point. Click again elsewhere to create a second point. A line segment will be drawn between the two.

Drawing a curved line: Create an anchor point. Click and hold the mouse button down elsewhere. A slightly curved line will form between the two.

The arrow tool (in the Pen tool pull-out box) is used to move anchor points. The corner tool can be used to change the anchor points from curves to corners to straight lines.

The General Preferences Dialog Box
Click on the bottom button to return all palettes to their default positions

The New File Dialog Box

The Paths palette, used with the Pen tool

Color Modes

(in the **Image... Mode** sub-menu)

Greyscale: mode This is not black & white! A greyscale image has 256 shades of grey, from solid black (0) to pure white (255), used to make up a picture.

RGB mode: Red, Green, & Blue are additive colors of light displayed on your monitor. The more saturated (dense) the colors become, the closer the value gets to white.

CMYK mode: Cyan, Magenta, Yellow, & blacK are subtractive pigment inks used in the four-color printing process; therefore they are called process colors. Translating an image from the computer screen (RGB) to the printed page requires color separation, so RGB must be converted into CMYK files before color separations can be created for truly accurate high-end printing. Low-end printers (StyleWriters, DeskWriters or Deskjets, or Epson Stylus) will do an adequate interpretation of RGB for home printing.

Bitmapped mode: In contrast to greyscale mode, bitmapped mode offers only black and white pixels — no colors and no shades of gray. These images cannot be scaled, distorted or treated with filters. To convert a file to bitmapped mode, it must first be converted to grayscale.

Indexed color mode: Indexed color is a custom palette of colors that is particular to an image. GIF files must be converted to an indexed color mode before saving to reduce the saved file size.

☆ A *palette* can either refer to a set of tools in Photoshop, or to a set of colors that makes up an image. When you save a GIF image for the web, you need to use a palette of no more than 256 colors. (Note that if you save a JPEG image, you may use a palette of millions of colors.)

☆ The palette that you select will depend on your image and on the platform (Mac, PC, etc.) on which you expect to display your image. If you do not know which platform will be used, as is often the case with the web, you may wish to use a more limited palette of 216 colors.

☆ The reason to use this more limited palette is that Windows, a common PC operating system, limits the number of "free" colors in a browser window to 216 when the monitor can only display 256 colors. 40 colors are reserved for use by the Windows system itself, to draw the screen. If an image in a browser window takes more than 216 colors, Windows will substitute "close" colors for the extra ones. The result is that your image will not look as you expected if someone views it on a Windows machine. Note that if the monitor allows more than 256 colors, this problem does not occur.

Using the Painting Modes

Photoshop 4.0 offers different painting modes, found on the pop-up menu on the various painting tools' Options palette and on the layers palette. These modes affect the way the overlying brush stroke changes the underlying pixels.

Normal mode: (**1**) The blend paint covers the underlying pixels. This is the most common mode used.

Darken mode: (**2**) Only pixels lighter than the blend color are changed.

Lighten mode: (**3**) Only pixels darker than the blend color are changed.

Hue mode: (**4**) The hue of the underlying pixels changes to that of the blend color, but the saturation and luminosity (brightness) are maintained.

Saturation mode: (**5**) The saturation of the underlying pixels changes to that of the blend color, but the hue and luminosity are maintained.

Color mode: (**6**) The underlying base pixels change to the blend color, but the luminosity is retained. This mode is good for colorizing grayscale without changing the gray levels.

Luminosity mode: (**7**) This is the opposite of the color mode. The luminosity of the underlying pixels changes to that of the blend color, but the color values are not affected.

Multiply mode: (**8**) Uses a mathematical formula to darken the image.

Screen mode: (**9**) Lightens the base pixels while giving them a tint of the blend color. The opposite (inverse) of the multiply mode.

Overlay mode: Either multiplies or screens depending on the base color. This has the effect of changing the base color to the blend color while maintaining highlights and shadows.

Dissolve mode: (**10**) The blend color replaces the base color at random, based on the density (opacity or brush hardness) of the applied paint. The example line is painted at 50% opacity.

*Color dodge and Color burn modes:* Using these modes is like dodging or burning with color.

Soft light and Hard light modes: Soft light is like a diffused light source while Hard light is focused. Colors more than 50% gray darken the base color while colors under 50% gray lighten it.

Behind mode: Paints only on the transparent part of a layer. The effect is of painting under the base color.

Clear mode: Makes pixels in a layer transparent. Works with the line tool, paintbucket tool, Fill or Stroke.

The Channels Palette

*The Actions Palette in List Mode
with two actions expanded*
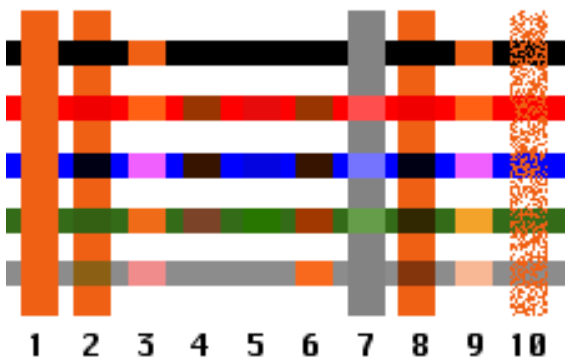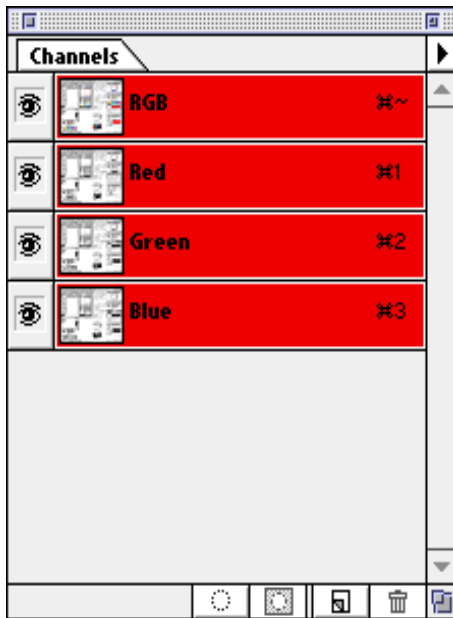
Channels

Channels are similar to layers, in that they contain partial, layered information about an image. An RGB image has three channels; a CMYK has four; a greyscale has one black channel. Photoshop files can have a total of 24 channels, most of which will be added mask (alpha) channels. Bitmapped images cannot have alpha channels.

Channels are also used to store and edit a selection. **Select... Save Selection** or clicking on the Save Selection button on the bottom of the Channels palette will create a new channel below the color channels in the Channels palette. These are alpha channels and can be exported in PICT and TIFF formats for use in other applications.

Channels contain only greyscale (256 shades) information about your image.

The Actions Palette

If you've worked in programs that utilize macros (WordPerfect, MS Word, MS Excel, etc.), you are familiar with the concept of scripting complex actions into a command you can execute easily with just a mouse click or single keyboard command.

Photoshop's Actions palette allows you to do just that. The default settings already have several commands scripted for you. Actions are made up of steps of commands, and each step may have substeps or settings. In Button Mode (in the Actions palette pop-up menu) the steps are hidden, but in List Mode the steps can be expanded and edited.

The first column of the Action list displays a check mark to show that Actions or steps are include and usable. Excluding steps is a convenient way to temporarily alter Actions without rewriting them.

The second column toggles break points on or off for an entire Action or single step. Break point within an action pause action execution to wait for user intervention. This may be to fill in options in a dialog box, make a selection, or supply some other variable. Photoshop will not let you turn on a break point for a step with no options. And if a break point is not turned on, the Action will execute without pausing, using the option values recorded.

The simplest way to create an Action is to actually perform the steps while recording in the Actions palette. Photoshop will alter your image as you do this, so you might want to work on a copy of your file.

You can assign Function keys (F1 — F15 across the top of your keyboard) to steps for one-keystroke implementation of your favorite commands!
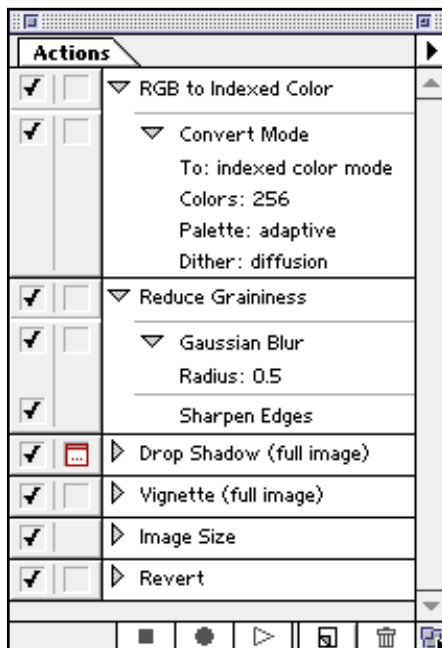
Saving Your Images for the Web

1. **Flatten your image.** We want to mash all the layers together, except the white background. First, make sure that all the layers are showing (there is an eye in the left-most column in the Layers Palette). Then hide the background layer by clicking on the eye in that layer to make it disappear. You'll see the transparency appear, and the white background will vanish. Next, choose Merge Layers from the Layers pop-up menu. Make sure that the background isn't the active layer before you merge layers, or that option will be grayed out.
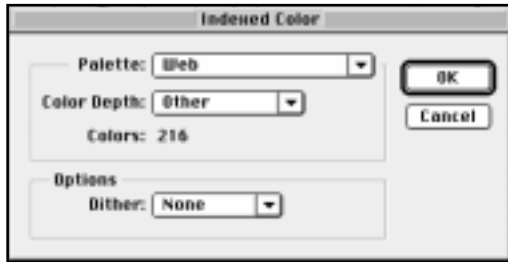
Changing to Indexed Color

2. **Select one item.** Choose an icon, a heading, or a bar and select it with the marquee. It doesn't matter if you use the lasso or the marquee tool, as long as you completely select the item you want, and don't select any part of any other item.

3. **Copy the item and paste it into a new document.** Choose Copy from the Edit menu. Next, select New from the File menu. Photoshop will suggest a size that exactly fits the image you just copied, so don't change the dimensions. Click OK in the New Image dialog box. Paste your image into the empty space, and then drop it by pressing Command (Ctrl) - D. Don't try to drop the image by clicking inside the window, since you might move it and cut part of it off.

Saving the File as GIF

4. **Change the new image to Indexed Color.** From the **Image... Mode** submenu, choose Indexed Color. In the dialog box that appears, select Web palette and None for dither. Notice that the Web-safe palette only has 216 colors. This is to make your GIFs safe for Windows-based browsers. If your intended audience has Macs, or Windows machines with more than 256-color display, you can choose the system palette. Click OK. If you picked your colors well at the beginning, your image should look pretty much the same.

5. **Save your image in GIF format.** Photoshop only saves rectangles, and automatically changes any transparency to white in all formats except Photoshop. If you do not need transparency, go ahead and choose Save As... and select Compuserve GIF in the Format pop-up menu. If you want to preserve transparency, you must use **File... Export... GIF89a Export....** You will get a dialog box that will allow you to choose colors (e.g., white) that you wish to be omitted in the saved image. Name your image something.GIF and click Save. Now you can display it on the web!

Sampling colors for transparency in the GIF89a Export command

6. **Repeat steps 1-5** for each of the images you wish to save for the web.

~ NOTES ~

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