Introduction to Adobe Photoshop CS3
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# Table of Contents

The Photoshop Interface 5  
Open an Image 6  
The Mechanics of Photoshop 8  
Menus 8  
View Menu 9  
Window Menu 9  
Select Menu 10  
Layer Menu 10  
Image Menu 11  
Image > Image Size 12  
Image > Canvas Size 13  
Image > Crop 13  
Image > Adjustments 14  
Photoshop Toolbox 15  
The Option Bar 16  
Palettes 17  
Navigator Palette 18  
Color Palette 18  
Swatches Palette 18  
Styles Palette 19  
Character Palette 19  
Paragraph Palette 21  
Layer Palette 21  
History Palette 22  
Saving Files 23  
Resolution 25  
Glossary 26

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This is the Adobe Photoshop Workspace. The Photoshop toolbox is the heart of the Photoshop program. One click gets you to the tool you want to use. Note in the succeeding pictures the tools that have a small black triangle in the corner. That designates more tool options on that button. For example the brush tool can be the brush or the pencil.
**Open an Image**

To open an image, click on File on the menu bar. To open an existing image, click on Open or Browse then search for your image file. Double clicking in the grey workspace will also open the Open dialog box. Once you have located the file you want, double clicking will open the file. You can also use the Adobe Bridge button in the upper right side of the Photoshop workspace. Adobe Bridge is a separate program for searching and organizing the image files on your computer.

Three ways to open an existing file:
1. Click on Open or Browse
2. Double click on this grey workspace
3. Use the Adobe Bridge

To open a new blank canvas, click on New and the box below will pop up. There are several decisions to make right from the start. What color mode should I choose? What size canvas is needed? Should the background be transparent or a color? What should the resolution be?

You can choose a name for your image here. You will also have the opportunity to name the file when you save it later.
Choose the size of your document by setting the **Width** and **Height**. You can choose from some preset sizes (click on the triangle to see the options in the drop down box) or create custom sizes. The size can be in pixels or in inches by changing the drop down. When working with images for an onscreen application use pixels. For print applications, use inches or cm.

**Resolution** affects the sharpness and clarity of an image. Resolution refers to the number of pixels (dots on a printer or squares on a monitor) per inch. If you are producing images for the web, the default of 72 pixels per inch (ppi) will be fine. That is what most computer monitors show. If you create your image for the web at a higher resolution, the picture will be very large when it tries to open, the file will be large, and it will take a very long time to download. However, if the image is to be printed, it will need to be a much higher resolution, frequently 300 ppi. For printing, the actual term is dots per inch (dpi) and the more dots you have per inch will give more detail and a smoother looking picture.

The **Color Mode** drop down box gives the opportunity to set the color mode. Color mode tells the computer how to identify colors. Grayscale gives 256 variations of white to black. This would be the mode to choose for black and white images. RGB creates color from differing amounts of Red, Green and Blue. This is good for onscreen images. CMYK is the mode to choose for images for print. This uses blends of Cyan, Magenta, Yellow and Black.

The area labeled **Background Contents** is for the background of the image. The background usually defaults to white, but you may want to set a transparent background or even a specific color for the full background of the image.
The Mechanics of Photoshop

Photoshop has so many tools, options and actions that can be used to create, enhance, modify and manipulate images. The following information is just a sampling of what is available. The menus in Photoshop are “context sensitive”. That means if you select a menu and an option is grayed out, the option is not available in that situation. Many of the items show the keyboard shortcut for that item. If a keyboard shortcut is not available, one can be created and saved in the Edit > Keyboard Shortcuts option.

Menus

On the Photoshop Menu Bar are several items, each with its own set of options in a drop down box. Shown here are the first two menu items, File and Edit. The operations listed in these menus are very similar to many other applications. Several items have their own set of options as designated by the small black triangle. Hovering on the item with the triangle shows the fly out menu.

Some items that may need a little more explanation on the edit menu are

Step Backward which will continue to undo actions.

Fill will fill the entire selection or layer with a color or a pattern.

Stroke will paint a colored border around a selection, layer, or path.

Free Transform will allow the manipulation of an image. This allows the changing of size and shape in a freeform manner. Use the mouse to move the bounding lines around and press enter to apply the changes.

Transform allows certain set changes such as scale, rotate, skew, flip, perspective. These are all listed on the fly out menu.

Preferences will allow changes to settings for general display options, file-saving options, cursor options, transparency options, and options for plug-ins and scratch disks. Most of these options are
set in the Preferences dialog box. Preference settings are saved each time you exit the application. To start, it is okay to stick with the defaults.

**View Menu**

Use **Zoom In** to get closer to your image and show more detail. **Zoom Out** moves away from the image and shows more of the image on screen. **Fit on Screen** changes the view to fit the whole image on the viewing screen. **Actual Pixels** shows the image at 100% magnification. **Print Size** shows what the printed version would look like.

**Window Menu**

The **Window** menu gives options for manipulating all open files and showing and hiding all palettes. A check mark in front of a palette means the palette will show on screen. If all the palettes get moved around choosing **Window > Workspace > Default Workspace** will put them back in the default position. You can create a different workspace that suits your way of working and save that workspace so you can use that same layout in the future.

In the **Arrange** menu you can create a second (new) window with the same image. That way you can zoom into one to make changes and see them in the full page image in the new window. You can also tile vertically or horizontally different images on the screen so you can see them all at the same time.
Select Menu

The select menu has several useful options.

**Select All** might be the most common. This selects everything on a page or an active layer.

**Deselect** will turn off your selection.

**Inverse** selects everything that is not in your selection.

**Transform Selection** will allow modification of an existing selection. Hit the enter key when you are done with your transformation.

**Save Selection** will save your selection in case you may want to use it again. The selection would be saved as a channel but it does increase the size of your file.

Layer Menu

The layer menu is shown here with the layer palette. The layer palette menu is accessed by clicking on the small triangle on the top right of the palette. This menu and the layer palette menu allow the creation of new layers, duplicate layers, layers made from a selection, and the merging of layers.

A **New layer** will give you a blank (transparent) layer.

A **Duplicate layer** will duplicate exactly the active layer.

An **Adjustment layer** will allow color corrections without changing content.

**Layer via copy** will create a layer with a copy of the selection on the active layer. This retains the original layer.

**Layer via cut** will cut the selection from the active layer and place it on a new layer. This removes the selection from the original layer.

**Merge layers** actually combines the layers as if they were one. You would not want to use this until you are sure you are finished with all the adjustments to each layer to be merged.
The above images show the menu drop down for **Image**. This menu option is used frequently.

The first item **Mode** refers to color. A **color mode** determines the color model used to display and print images. Photoshop bases its color modes on established models for describing and reproducing color. Common models include RGB (red, green, blue); CMYK (cyan, magenta, yellow, black); and CIE L*a*b*. Photoshop also includes modes for specialized color output such as Indexed Color and Duotone.

**RGB** is the best color mode when working with images to be viewed onscreen, such as web pages and desktop presentations. It is made by assigning an intensity value to each pixel ranging from 0 (black) to 255 (white) for each of the RGB components in a color image. When the values of all three components are equal, the result is a shade of neutral gray. When the value of all components is 255, the result is pure white; when the value is 0, pure black. RGB offers over 16 million colors.

**CMYK** is best for printed images. The CMYK model is based on the light-absorbing quality of ink printed on paper. As white light strikes translucent inks, certain visible wavelengths are absorbed while others are reflected back to your eyes. In theory, pure cyan (C), magenta (M), and yellow (Y) pigments should combine to absorb all light and produce black. For this reason these colors are called **subtractive** colors.

**Grayscale** is best for black and white images. It contains 256 shades of gray. Because of the limited colors, in conjunction with the large number of shades, it gives a smooth transition and good definition.
Indexed Color mode uses at most 256 colors. When converting to indexed color, Photoshop builds a color lookup table (CLUT), which stores and indexes the colors in the image. If a color in the original image does not appear in the table, the program chooses the closest one or simulates the color using available colors. By limiting the palette of colors, indexed color can reduce file size while maintaining visual quality—for example, for a multimedia animation application or a Web page. Limited editing is available in this mode. For extensive editing you should convert temporarily to RGB mode.

In addition to determining the number of colors that can be displayed in an image, color modes affect the file size of an image. More colors translate to a larger file. That is why the index color mode is a good way to save your final web image if it has limited color transitions. It makes a much smaller file.

Image > Image Size

Another menu item that is used often is the image size.

To resize the image select **Image > Image size**.

The Image Size area allows you to set the width and height of the image. The unit value can be set in the drop-down menus beside their respective fields. There are three sections to this dialog box, the Pixel Dimensions, the Document Size and the Resample Image area. Check out the section on Resolution to find out more about Image size. The Auto button will set the resolution for print according to lines per inch.

**Width and Height:** Width and the height can be adjusted. To adjust the image size using pixels, specify the amount of pixels desired in the ‘Pixel Dimensions’ Window. It is also possible to resize the image as a percent of the original size. Change the drop down menu that says ‘pixels’ to ‘percent.’ If the image is going to be printed, look the section labeled ‘Document Size’ and specify how many inches wide or how tall needed. When the ‘Constrain Proportions’ checkbox is checked, if you change the width or the height, the other will adjust on its own, so that the image remains proportional. If the box is not checked, it will adjust the width or the height, individually, but the image may look stretched or pushed too close together. Once the new dimensions have been input, click on ‘ok,’ and the image will be resized. If you have layers with styles included with your image select Scale Styles as well to scale the layer styles to match the image scaling. This option is only available when Constrain Proportions is selected.
**Image > Canvas Size**

The Canvas Size dialog box allows you to scale the canvas that the image rests on, separately from the image itself. This can be used in photographs for adding effects such as blurring the edges of the image, which is used a lot on the web. To resize the canvas select **Image > Canvas Size**.

The canvas that appears by default will be the color of the background color that is selected on the toolbar. Or the background color can be changed with the Canvas extension color drop down. The default setting is to have the canvas spread out around the entire image, but this can be changed using the anchor arrows. If canvas is desired to only be added to the right of the image, then click on the anchor arrow pointing to the left, and Photoshop will show you that it is adding canvas to the right.

**Image > Crop**

Instead of resizing an image you may want to make the image smaller by **cropping**. **Cropping** entails enclosing a portion of the image in a rectangular boundary and then removing the rest of the image. Cropping can be accomplished by making a selection and using Crop from the Image Menu. Or, select the crop tool \( \square \). Define the cropping marquee by dragging over the part of the image you want to keep. The marquee can be adjusted by dragging the handles. When you are finished with the adjustments either press the Enter key or right click and choose crop to complete the cropping process. You can also specify a Width – Height – and resolution for your crop by typing the values in the **option bar**. The bounding box will be restrained for those values.
Image > Adjustments

As shown by the list of adjustments under the image menu, there are many ways to enhance and fix images. Brightness/Contrast will let you make simple adjustments to the tonal range of an image. This command makes the same adjustment to every pixel in the image.

Auto color adjusts the color and brings out the full color range in an image. This is a good adjustment to try to see if it enhances your image. Sometimes it is better to make manual changes rather than use this Auto Color option.

Another adjustment that is pretty easy to use is variations. Image > Adjustments > Variations. This screen shows the original image. It also shows many variations. Click on a picture to darken the picture or add reds or add greens as it says on the picture labels. The original picture is always there to compare to the new version. You can click more than once. So if you wanted to get the picture much darker, you would click darker until it looks the way you want it to look. Click OK and the image has changed to the new and improved image.
Photoshop Toolbox

This is the “Classic” double column view of the Toolbox. The Toolbox can be put into the single column view by clicking on the dark bar on the top.

**Note:** Some tools are hidden under others. The alternate tools are notated by the small black triangle next to the tool. Right click on the tool to show the alternate tools.

To use a tool just click on the tool icon and check the option bar to see what options can be varied for that tool. To change a tool, just choose a new tool.
The Option Bar

The **Option Bar** changes as you change your tool. The toolbox and the option bar below are showing the paintbrush tool as the current tool selection.

Each tool has its own use as well as its own various settings. The settings can be changed on the options bar. For example the brush tool really is just like a physical paintbrush. It can be small or large or any size in between. It can be soft and feathery or it can be stiff and more precise. And brush strokes can be created.

![Image of Adobe Photoshop CS3 Extended showing the option bar and brush tool settings.](image-url)

This drop down box is where you can change the size of your brush or choose different types of brush strokes.
Palettes

All palettes can be accessed by Choosing **Window** on the menu bar and clicking on the palettes you want to show. The palettes can be moved around the screen by clicking and dragging on the light gray bar by the tab area. The palettes can be turned off by pressing **Shift + Tab**. Pressing **Tab** removes everything but the Menu bar. To reset the palettes back to the default, choose **Window > Workspace > Default Workspace**.

The palettes are shown closed with no labels. Click on the top right side of the dark gray bar and drag to expand to show the labels. Click on the << to open or collapse the palettes.

Each palette has options which can be accessed by clicking on the small black triangle inside a grey circle.

Many of the palettes are grouped with other palettes. Bring each palette to the front by clicking on its tab. Or a palette can be ungrouped by clicking on the name tab and dragging it out to any empty space on the desktop, where it will become a floating palette. Or the palettes can all be combined by clicking on the name tab and dragging the palette into another group.

This view shows the palettes expanded. It would be very hard to work in this manner. The way to work is to collapse the palettes until needed, make any adjustments and then collapse the palettes again.

This view also shows the Toolbox in the single column.
Navigator Palette
This palette will allow you to move around a large image. The red outline, the view box, shows the part of the image that is viewable onscreen. When the mouse is placed on the thumbnail image it changes to a hand and the view box can be moved around the image. The magnification can be changed. You can zoom in or out with the sliders or you can type a size directly into the magnification box. Magnification does not affect the actual size of the image.

Color Palette
The color palette is very helpful in choosing colors. Click on either the foreground or background color to show which color you are choosing. There are several ways to get the exact color you need. You can use the sliders to mix amounts of Red Green and Blue. If you place the cursor on the color ramp, it will turn to the eyedropper and you can just click to choose a color. The color ramp can be set to RGB, CMYK, Grayscale, and web safe colors. The color amounts can be entered numerically in the option fields. All web safe colors have a hexadecimal number consisting of 0 or a number divisible by 3 and each color has a duplicate number, such as 00 99 FF.

Swatches Palette
The swatches palette shows a large variety of color favorites. Click to choose a foreground color. Ctrl + Click to choose a background color.

You can also create and save your own favorite colors. After creating a new color, click on new and it will add the new color which you can name. Alt + click or click and drag to trashcan to delete a swatch.
**Styles Palette**

The Styles Palette allows you to save layer effects and blending options. Some styles are already created and saved. Styles can also be created. There are three ways to save a new style:

1. Create a layer style and from the **Layer Style dialog box**, select the **New Style** icon to display the New Style dialog box. Name the style, select your desired settings and click OK.

2. Open the **Styles palette**, and moving your cursor into the palette, it will change into a paint bucket. Click on the palette with the paint bucket, and the New Style dialog box will open. Name your style, save your settings, and click OK.

3. Have both **Layers and Styles palettes** open. Drag any layer (does not need to be active) from the Layers palette, and drop into the Styles palette. This will open the New Style dialog box. Name your style, save your settings, and click OK.

Styles can be applied by dragging the desired style onto the image. It will apply the style to the selected layer.

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**Character Palette**

The **Character Palette** provides options for formatting text. Many of the options are similar to any word processing application. Remember if you hover the cursor on any icon it will show an explanation of the tool. The **Font** drop-down menu allows you to select the font. The **Style** drop-down menu for bold, italic, etc. **Faux Bold and Faux Italic** – Allows you to apply bold and italic effects to letters when the font does not have them as a type style. Only use these if the pop-up menu doesn’t offer bold or italic setting. **All Caps and Small Caps** – Allows you to convert the case of the type. Only lower case letters will be converted to small caps.
Superscript and Subscript – Allows you to shrink selected characters and move them above or below the text baseline. Useful for mathematical equations. If they don’t position as you want, use the Baseline option mentioned below.

Underline Left and Underline Right – This applies to vertical type only, and allows you to add a line to the left or right of the selected characters. When working with horizontal type, the option changes to Underline and only does that.

Strikethrough – Allows you to draw a line through the middle of letters.

Size – This allows you to select the size of your type characters. You can also manually enter any size, and Photoshop will adjust the sizing. The measurements can be points, pixels or millimeters, which you can adjust in the Units and Rulers panel in the Preferences dialog box.

Kerning – Kerning allows you to set the spacing between characters of type. This is especially useful as you can manually adjust spacing between particular characters that in certain fonts fit too closely together, or look further apart.

Baseline – This value field will raise or lower selected text in respect to the baseline. Raising type will result in a superscript, and lowering type will result in a subscript. This value will stay in default so if your text is looking strange you may have to correct this value.

Leading – This is a line-spacing function, as it allows you to adjust the vertical distance between the baseline of one line of type and the baseline of the next line of type.

Tracking – This pop-up menu allows you to affect character spacing, measured in spaces. Tracking can be applied to multiple characters at a time. A Tracking value can also be applied on top of either automatic or manual kerning.

Horizontal and Vertical Scaling – These value fields allow you to alter the vertical or horizontal size of text in correlation with the baseline. The Vertical field will affect the width of the column of letters, and the Horizontal field will change the height of each character.
**Paragraph Palette**

The paragraph palette, like the character palette is very similar to word processing application choices. **Alignment** controls how lines of type will align with each other. Choose to have text align left, center or right.

The middle section of boxes is for **indentation**. The choices are indent left, indent right, and indent first line.

The next section is for space before or after a Paragraph.

The check box for **hyphenate** is to choose auto Hyphenation.

**Layer Palette**

The ability to layer images and parts of images is a huge advantage. Changes can be made without damaging or altering the original document. Changes or effects can be made to just parts of an image. Each part of an image can have a separate layer. Text is always placed on a new layer so it can be manipulated separately.

The **layer palette** shows all the layers in your image. The highlighted layer is the active layer. You can only make changes to the active layer. The icon that looks like an eye shows that the layer is **visible**. Layers can be **linked** together so they can be moved or transformed together. To link layers, make two or more layers active and click on the small link on the bottom of the layers palette. A small link will appear in the layer section.
History Palette

The history palette shows with a thumbnail each edit or command performed on an image. The default setting for the number of items held in history is 20. This can be changed in Photoshop preferences (Edit>Preferences>General). However each history state in the file increases the file size.

The history palette gives great flexibility to move around states of an image. Each change in an image is a new state. One point to remember is that each click is a new history state. So if you are painting and you create many small brush strokes each one will be a history state. After some changes have been made to an image, a snapshot can be made. Just click on the camera icon (B.) on the bottom of the history palette. Even though only a certain number of states will remain in history, the snapshot will remain until the file is closed or saved. That gives the option to “go back” to the previous state that was captured in the snapshot.

A new document can be created from a state by clicking on the new document icon (A.) This duplicate document allows you to continue making changes to the new document while leaving the original in its previous state. This gives you the option of making two different versions of the same image and saving both of them.

The History palette is also a great way to undo edits or commands performed. Just click on a state and drag it to the trashcan (C.) and that command will be undone.

Another exciting option with the history palette is the history brush. You can make alterations to an image using a past history state as the “paint”. So if you make a change to an image and you only wanted that change to affect part of the image, you can choose the history brush tool, choose the history state you want to revert back to and paint that history state on the current image.
Saving Files
Always save your original file before you alter it in any way. Once you open it in Photoshop use the Save As feature to save the file you are editing so you will always have the original to revert back to if necessary. While working on an image, you should save the file in .psd format (Photoshop Document). This file type retains the image layers and effects without flattening them so that you can go back and modify or edit your image at any time.

Once you are finished with your work, you can Save as or Save for web the Photoshop file in a different format, depending on the purpose of the final image.

When savings images for the web use these file formats: .gif – If the picture is line art, has large areas of solid color and uses a limited color palette.  
.jpeg – If the picture is a photograph or contains lots of different colors.

When printing a document use these file formats:  
.eps – For print using a Postscript compatible printer.  
.tif – For print using most printers and page layout programs.

Note: If you want to Import a picture into another graphic program other options you may want to look at are .bmp or .pict.

To Save as PSD: Select File > Save. Select the proper location and type in a name for the file. Make sure the file format menu says ‘Photoshop(*.PSD,*PDD).’
**To Save File for Web** (as GIF or JPEG): To save the image as a GIF or JPEG, select **File > Save for Web**. Select the tab that says ‘4-up.’ This will present 4 images of differing qualities. It will display the file size and the time that it takes to load on the web. The file settings are to the right of the pictures. Recall that if saving an image with few colors, GIF files can be used. If saving a file with lots of colors, such as a photograph, save the file as a JPEG.

![Diagram of Save For Web & Devices panel](image)

The type of image file and the quality can be changed for each image here. Try different settings until you get the smallest file with the least loss of quality.

The file type, size and download speed are listed here.
Resolution

Each of these images in the first set below are set to be 1 inch by 1 inch. They don’t look the same in the first picture, because the real size of the images is 300 pixels by 300 pixels and 72 pixels by 72 pixels. So, on screen, which is usually closer to 72 pixels per inch, the smaller image looks like it is really 1 inch by 1 inch.

However, when printed they are each 1 inch by 1 inch. You can verify this by creating each new image and then looking at View > Print Size vs. View > Actual pixels. The 300 pixel image looks much better than the 72 pixel image when printed since there are more pixels (dots) per inch. The more dots when printing, the smoother and more detailed the print. A 1-by-1-inch image with a resolution of 72 ppi contains a total of 5184 pixels (72 pixels wide x 72 pixels high = 5184). The same 1-by-1-inch image with a resolution of 300 ppi contains a total of 90,000 pixels.

These three images are each 72 pixels by 72 pixels. They look the same on screen, but each one as a print will be a different size. The 72 dpi will be one inch, the 144 dpi will be .5 inch and the 300 dpi will be .24 inch. Again, you can verify this by creating each new image and then looking at View > Print Size vs. View > Actual pixels.
Glossary

**anti-aliasing** By slightly blurring the edges of text and/or shapes the edges appear smoother. Alias is the stair step look when there are not enough pixels to make a smooth transition between colors or at the edge of an image.

**adjustment layer** A layer that allows adjustments to color or tone without changing the content.

**alpha channel** The non-color layer where selections can be saved.

**blending modes** The process of comparing two layers or paint tools and creating a new imaging effect.

**brightness** Relative lightness or darkness of color. 0% is black to 100% is white

**CLUT** The Color lookup table (CLUT) used with Gif files, saves only necessary colors for a particular image, making a smaller file size.

**CMYK** Color process using cyan, magenta, yellow, and black. Used mostly for printed images.

**color modes** Different ways of identifying colors. See CMYK, RGB. Whenever possible, avoid multiple conversions between color modes, because color values are rounded and lost with each conversion.

**contiguous** Adjacent areas that are not interrupted by other colors

**crop** Cuts off part of an image that is unwanted. The crop tool can only crop in a rectangle shape.

**dithering** A process that combines two or more colors into patterns to fool the human eye into thinking it is seeing new solid colors. The image appears to have more colors than it actually does.

**feather** Replaces a hard edge with a soft edge. Feathering fades an image into the surrounding area. You can use this technique to create a vignette effect.

**GIF file** A good file choice for the web. Gif uses 8 bit color Gif files to create a color look up table (CLUT) holding up to 256 colors. Because of the limited number of colors, and the process of tracking repeating pixels, gif files compress well. Gif also supports animation.

**gradient** Blending two or more colors together gradually to create a new fill. Fill moves from one color to the next.

**grayscale** Uses 256 shades of gray to create a smooth looking monochrome image.

**hue** Color as shown on a color wheel as degrees from 0 to 360

**Image Resolution** It is customary to use inches for images to be printed and pixels for onscreen images. When creating images for the web, you need to consider the equipment your audience will be seeing your images on. A 15-inch monitor typically displays 800 pixels horizontally and 600 vertically. Unless you know your audience has specific equipment it is best to use 800 X 600 as a norm. An image of that size would fill the screen of a 15 inch monitor, so you need to judge your image pixel size accordingly.
**JPEG**  (Joint Photographic Experts Group) File format that is good for photos or images with many varying colors. Uses 24 bit color (millions of colors)

**kerning**  The space between individual pairs of characters or letters.

**layer**  Individual image components similar to clear acetate overlays. Each image can have multiple layers allowing modification of parts of an image without changing the original. Allows effects to be added to specific parts of an image

**leading**  The space between lines of text. This is usually shown in points, compared to the font point size.

**marquee**  Selection tool that allows rectangle and elliptical selection.

**mask**  Defines an area of an image or layer to isolate and protect as you apply color changes, filters, or other effects to the rest of the image.

**merge**  To merge layers combines the layers so they can be worked on or moved as one image. Two or more layers can be combined while other layers stay separate

**noise**  A coarse dotted pattern added to images for effect or to give a graphic feel.

**path**  A linear outline of an image or shape. Created with the pen tool

**pixels**  The dots (round or square) that make up images.

**PSD file**  Photoshop’s default file format. This is the only format that preserves all of Photoshop’s features. These files can be saved as GIF’s JPEG’s or TIFF’s, etc so they will be recognized by other applications

**rasterize**  This is the process of changing vector images so they will have pixel data. After creating a text layer, Photoshop will require it to be rasterized before some effects can be applied.

**resolution**  The number of dots (pixels) per inch in digital images. The resolution needs to be different for onscreen images and print images. See the section on Resolution for a more complete explanation.

**RGB**  Color mode using blends of Red, Green and Blue. This is the most common color mode used for onscreen images. All the colors together create white (hexadecimal #FF FF FF) or RGB values of 255, 255, 255. The absence of colors is black (hexadecimal # 00 00 00) or RGB values of 0,0,0.

**rollover**  Graphic that changes as you move over it with your mouse cursor.

**rotate**  Change the view of an image. Nothing changes except the way it is presented. An image can be rotated clockwise or counterclockwise. Images can also be flipped horizontally or vertically. This option is located under the image menu in Photoshop.

**sample point**  A point that defines pixel data to be used in some tools. The Clone Stamp Tool uses a sample point to use for its paint.

**saturation**  strength or purity of color from 0% gray to fully saturated at 100%

**scaling**  Changing size of an image, layer, or effect.
sharpening  Method of bringing out additional detail in digital images. The best method of sharpening in Photoshop is to use the unsharp mask filter

slice  Divides a large image for web use into smaller pieces (tiles). This helps the image load faster and can provide parts of the image for rollover or hyperlinks

snapshot  An image in the History palette that preserves any changes that have been made to the image. By taking a snapshot of an image that version of the image will not be lost even if some history is erased.

stroke  An outline around an image, a shape, or a path

thumbnail  A very small version of a larger image.

tonality  This has to do with blacks and whites and shades of gray. Exaggerating the tonality can make a very expressive image.

tracking  The process of creating an equal amount of spacing across a range of letters.

transform  Modifying the position, scale or proportions of a layer or image. Can add perspective or distortion.

vertical type  Text in a column rather than the normal horizontal.

warp  Distortion of an image or shape or text. Photoshop has many different preset warp effects.

work path  This is a path that is in process of being created. Photoshop uses the pen tool to create a path. Once the path is completed it is saved and given a name