Module 1: Photoshop's Environment

Objectives:

At the completion of this module you will be able to:

- Understand the purpose and function of raster and vector graphics.
- Understand the elements of the Photoshop CS4 environment
- Navigate within the Photoshop CS4 environment

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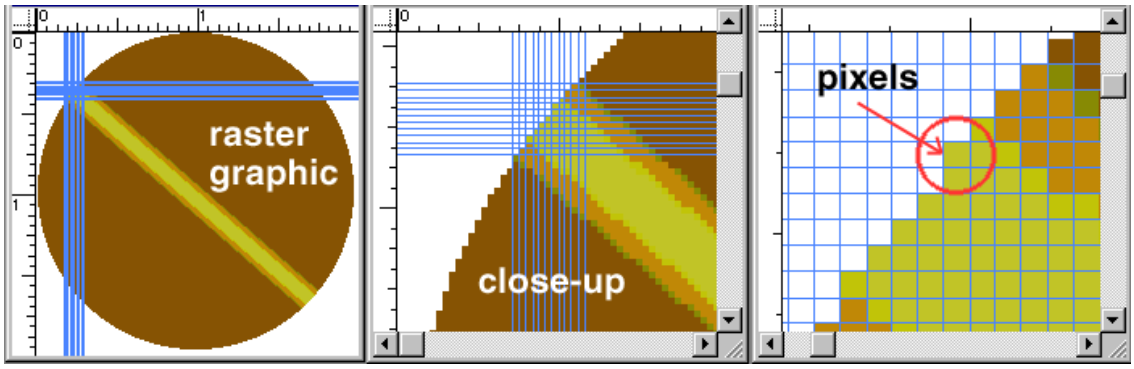
Raster and Vector Graphics

What are raster graphics?

Raster graphics are digital graphic files which are composed of a series of **pixels** (picture elements). Each pixel has a specific color. When a raster graphic is viewed from a sufficient distance, individual pixels are no longer interpreted by the eye as separate units, and the result is a blending of adjacent colors optically into a unified whole.

A good analogy of this is a needlepoint picture. Viewed close up, you see a matrix of individual squares of colors, but when viewed from a distance, these colors are blended by the eye creating a cohesive-looking picture.



Raster graphic files can be quite large in terms of memory size. Because each pixel is unique, more digital information is needed to describe the entire file.

Raster graphics are affected by:

- The **physical linear dimensions** of the displayed graphic
- The **resolution** (number of pixels in a given unit of linear measurement)
- The **bit depth** (number of tones or colors each pixel may have)

These terms will be discussed in more depth later.

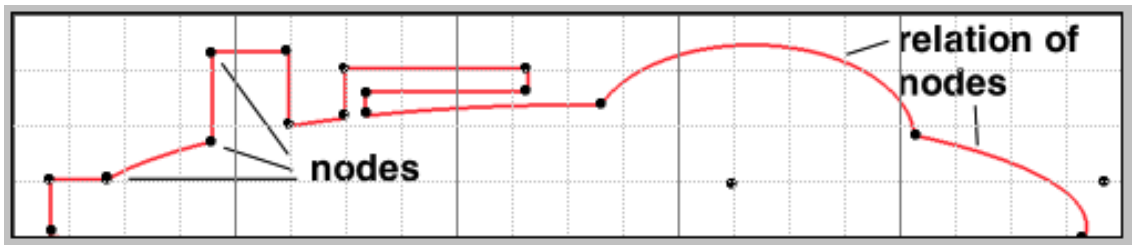
Raster graphics are typically used for photographic-like quality images, or images that involve complex variations in color which would be difficult to achieve in a vector graphic. Some common file formats for raster graphics are TIFF, JPEG, GIF and BMP.

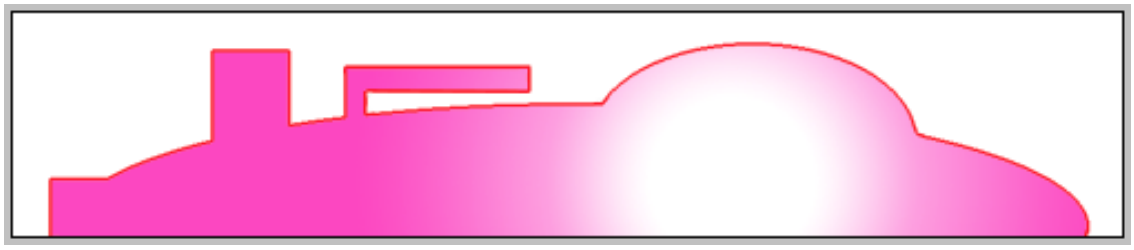
To view a raster graphic:

1. Choose **File/Open**.
2. Go to the folder called "**Module 1**". The instructor can help direct you there.
3. Open the file called "**Rastergraph.tif**".

What are vector graphics?

Vector graphics are digital graphic files which are composed of shapes and other attributes (such as color fills) defined by a series of **nodes** (points defined at a mathematical location) with relation to other nodes in the graphic, which are given as mathematical formula within the file.





Since a vector graphic is defined only by relations between its nodes, its optical quality is not dependant upon resolution or the graphic's physical dimensions. Therefore, a vector graphic is just as clear when viewed extremely large as it is when viewed extremely small, and the size of the file remains the same regardless of scale. This is why vector graphics are described as **resolution independent**.

To view a vector graphic:

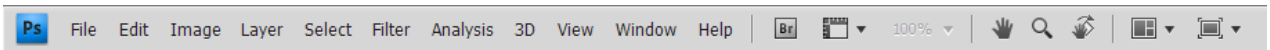
4. Choose File/Open.
5. Go to the folder called "**Module 1**". The instructor can help direct you there.
6. Open the file called "**Vectorgraph.psd**".

Photoshop Environment Elements

The Photoshop software screen is brimming with tools, menus, panels and features. This list can seem intimidating at first glance. Areas of the program are defined in the following pages.

The Menu Bar

The Photoshop **Menu** bar resides at the top of the main program window. The **Menu** bar displays a list of command categories similar to those found in other software programs. Some of these commands affect a Photoshop file, while others affect the Photoshop environment. Below is a summary of some of the more commonly used **Menu** bar commands.
Note that the screenshot below shows the Extended version of CS4. Some of the features are not found on the Standard version



Menu bar category	Common commands
File	New, Open, Browse in Bridge, Open Recent, Close, Close all, Save, Save As, Import, Export, File Info, Page Setup, Print, Exit
Edit	Undo, Cut, Copy, Paste, Transform, Preferences
Image	Mode, Adjustments, Image Size, Canvas Size, Crop, Trim
Layer	New, Duplicate, Delete, Properties, Style, Mask, Group, Arrange, Align, Merge, Flatten
Select	All, Deselect, Inverse, Refine Edge, Transform Selection, Save
Filter	Filter Gallery, Liquify, (Various others supplied, and third party filters may be installed)
View	Zoom In, Zoom Out, Fit on Screen, Extras, Rulers, Snap
Window	Various options to show/hide panels and display different workspaces.

To the right of the menu bar is the Application Bar, which gives access to some commonly used image viewing commands.

These commands will be referred to throughout the course.

Toolbox Bar

The **Toolbox** bar is a series of icons representing the possible tools for creating and manipulating a file within Photoshop. Some of the tools have a submenu for choosing variations of that tool. These tools are indicated by a small arrow in the lower right corner of the icon, and the submenu is accessed by clicking and holding the mouse button until the submenu appears.

Move Tool
Marquee Tools
Lasso Tools
Quick Selection & Magic Wand Tools
Crop Tools
Eyedropper Tool (Colour Sampling)
Healing Tools
Brush Tools
Clone Stamp Tool
History Brush Tool
Eraser Tools
Gradient & Paint Bucket Tools
Blur, Sharpen & Smudge Tools
Dodge & Burn Tools
Pen Tools
Text Tools
Path Component Selection Tools
Shape Tools
3D Rotation Tools (Extended version only)
3D Orbit Tools (Extended version only)
Hand Tool (Panning)
Zoom Tool
Reset Default colours / Swap Foreground & Background colours
Swatches showing FG (painting) & BG (erasing) colours
Toggle Quick Mask Mode

The above tools and their variations will be discussed in the modules that follow, or in the Advanced course.

To choose a tool:

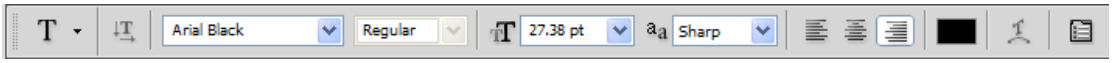
1. Click once on the tool's icon. The tool is highlighted and its options appear in the **Tool Options** bar, below the **Menu** bar.
2. When the mouse pointer is placed within an image file, the pointer changes to the icon of the tool selected.

To choose a tool from a submenu:

1. Click and hold on the tool icon containing the submenu.
2. When the submenu appears, drag the mouse pointer so the desired tool is highlighted, then release.

Tool Options Bar

The **Tool Options** bar is located directly below the **Menu** bar, and displays a list of options for whichever tool is selected. These options can affect such things as the tool's sensitivity and the manner in which the tool is applied to portions of a file.

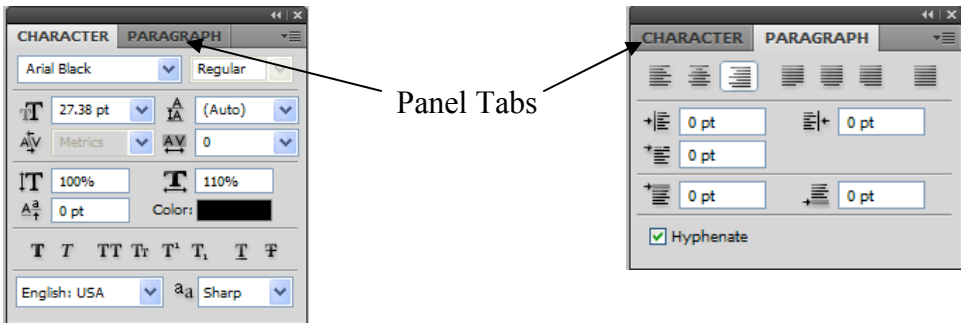


To change Tool Options (example: Text tool):

1. Select the **Text** tool from the **Toolbox** bar (shown right).
2. On the **Options** bar, choose from the **Font** pulldown menu a new font name.
3. Choose from the **Font Size** list **24 point** size.
4. Click on the icon for **Center Justification**.
5. Any text now set will have those attributes.

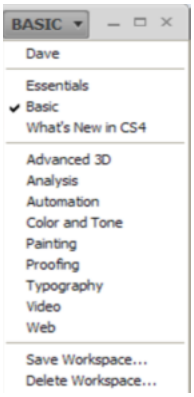
Panels

Panels are windows within Photoshop which contain a wide variety of customisable features. Panels are used to monitor and modify images, by tracking aspects such as the order which tasks are performed, commonly used brushes, or colors and effects. Panels can be grouped together into a single window. A particular panel can then be selected by clicking on the labelled file tabs visible at the top of the panel's window.



Docking Panels

If panels are grouped in a single window (a procedure called **docking**), only one of the grouped panels is visible at a time. The number and arrangement of visible panel windows can be customised.

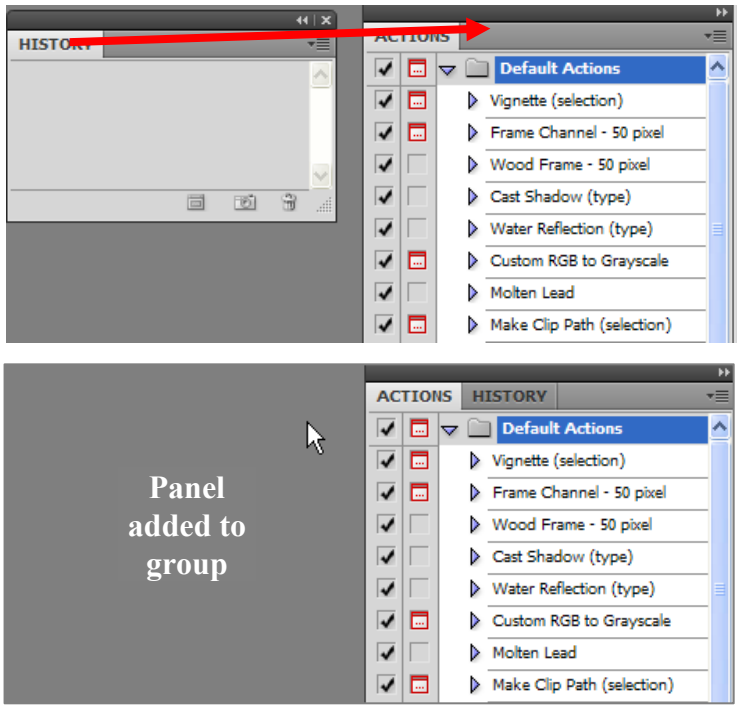


Photoshop has a number of predefined workspace options to suit different types of editing tasks. These are selected from a dropdown menu at the right hand end of the Applications bar.

To sort and dock panels:

1. Locate the **History** panel on your desktop. Only its tab may be visible.
2. Click and drag the tab from the panel window to a blank area of the Photoshop screen.
3. When the mouse is released, the **History** panel will have its own panel window.
4. Click and drag the **History** panel's tab back to the group from which it came. When the **History** panel is properly positioned for docking, the panel window it's being docked in will change slightly. When this happens, release the mouse button.

5. The History panel has been added back to the group (shown below).



Activating and Deactivating Panels

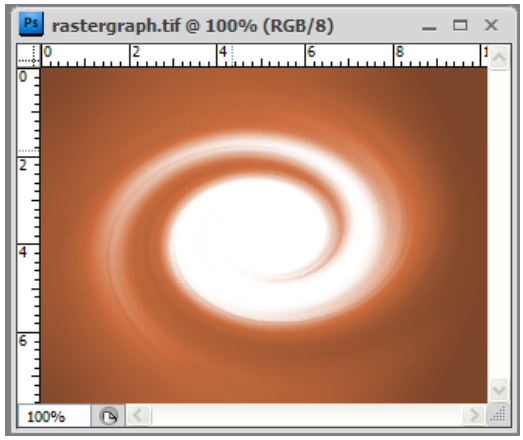
Panels can be accessed from the **Window** command on the **Menu** bar. You can turn the panel display to on or off. The following is a list of available panels and their functions.

Panel	Description
3D	Allows 3D adjustments (Extended version only)
Actions	Lists playable macros of steps performed to achieve certain goals
Adjustments	Creates an adjustment layer to modify the appearance of the underlying layers in a non-destructive way.
Annimation	Allows you to create simple animations (Extended version only)
Brushes	Allows you to change the settings for the various painting tools
Channels	Lists each of the selected color model elements as individual items (e.g. RGB mode = R, G and B channels), plus any user-defined ones, such as masks
Character	Lists text characteristics, such as font, size and scaling
Clone Source	Allows you to set options for the Clone Stamp & Healing tools
Colors	Allows a color to be interactively set via sliders or selection tool
Histogram	Shows the distribution of pixels of different brightness
History	Shows a chronological progression of steps performed on the file
Info	Reports the color values wherever the pointer is placed
Layer Comps	Allows you to save snapshots of layer visibility etc
Layers	Lists all elements of an image able to be independently manipulated as distinct items
Masks	Limits the effect of an Adjustment to a part of the image.
Measurement Log	Allows you to save measurements (Extended version only)
Navigator	Allows the user to quickly access various magnifications and image areas.
Notes	Allows you to add annotations within your image.
Paragraph	Lists paragraph characteristics, such as alignment and tabs

Panel	Description
Paths	Lists any drawn or imported vector graphic information
Styles	Shows a selection of predetermined pattern effects
Swatches	Shows a selection of predetermined color values
Tool Presets	Allows you to save and reuse tools settings

Rulers

Rulers are measuring tools placed along the upper and left-hand sides of a graphic file. Rulers scale proportionately when an image is zoomed in or out, to give an accurate physical reference to an image's chosen dimensions.



To display Rulers:

1. Open the file "rastergraph.tif".
2. Select **View/Rulers** from the **Menu** bar.

To turn off Rulers:

3. Select **View/Rulers** from the **Menu** bar. This toggles the ruler back off.

To choose a unit of measurement for the rulers:

4. Turn rulers back on.
5. Choose **Edit/Preferences/Units & Rulers** from the **Menu** bar. The window that appears has a dropdown menu for selecting measurement units.
6. The new ruler units will be shown in the image window immediately when selected.
7. Select each one in turn and note the look of the rulers in the image window.
8. Click **OK** when the proper unit of measurement is selected.

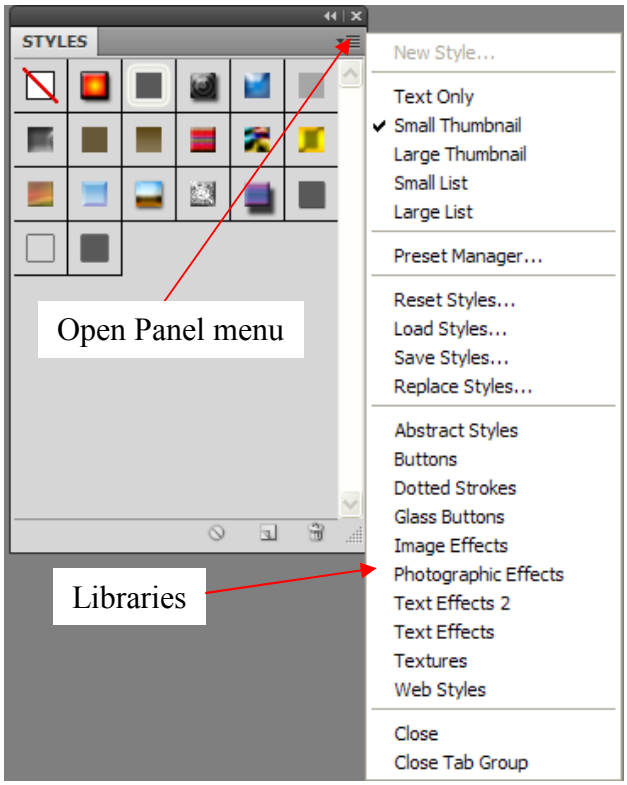
Libraries

Libraries are files containing predetermined settings for certain panels or tools. Creating and using libraries allows you access to a broad range of unique tool and effects options quickly, instead of creating them each time. Each type of library has its own unique file extension and location. This allows you the option of reusing or sharing libraries with other artists.

Items which have libraries are: **Brushes**, **Actions**, **Swatches**, **Styles, Gradients**, **Patterns**, **Contours** and **Custom Shapes**.

To view and set Libraries:

1. Click on the Styles panel tab to select it.
2. Click the icon in the upper right corner of a panel window (Indicated) to open the Panel menu
3. Click on the item named Textures
4. You will be asked whether to add to the existing list or just use the new Library. Click OK to just use the new set.
5. Look over the sample icons showing the new library of style effects that can be used.
6. Repeat steps 2 through 5 for each of the Styles Libraries.



LIBRARIES CAN ALSO BE SET BY CHOOSING EDIT/PRESET MANAGER FROM THE MENU BAR, THEN BROWSING AVAILABLE LIBRARIES FOR EACH APPLICABLE TOOL OR PANEL.

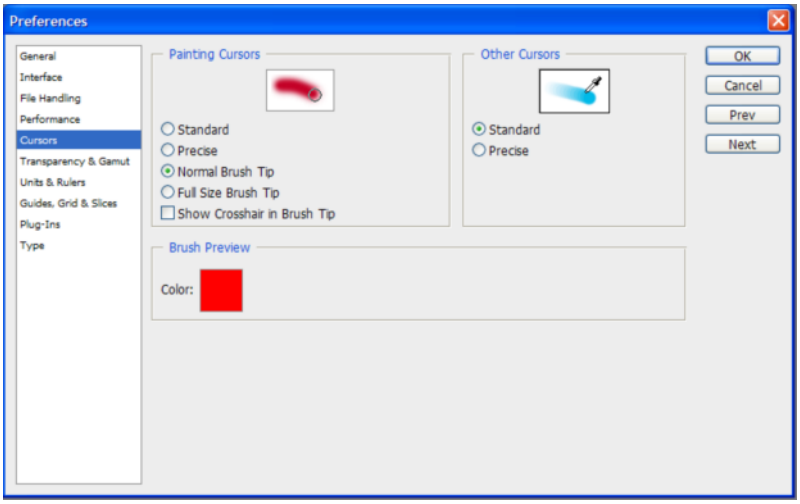
Preferences

The **Preferences** window allows you to set parameters for the Photoshop working environment. These preferences can be changed at any time. Most preferences, if changed, will take effect immediately. However, some items, such as location of filter plug-ins, will not take effect until the next time Photoshop is opened.

The available **Preference** categories that you can customise are summarised below.

Category	Items to Customise
General	Overall items, such as levels of Undo, and state of tools
Interface	Screen display options
File Handling	Image previews, file extension settings, compatibility
Performance	Image cache levels, RAM percentage & Drive space allotment for processing ability
Cursors	Type of icon displayed for tool use, Channel options
Transparency & Gamut	Grid size and colors, gamut warning sensitivity
Units & Rulers	Units of measurement for images and type
Guides, Grid & Slices	Guide and grid display colors and line styles
Plug Ins	Folder location(s) for plug ins
Type	Options for working with text

To change a Preferences item (example: look of the Tool cursors):



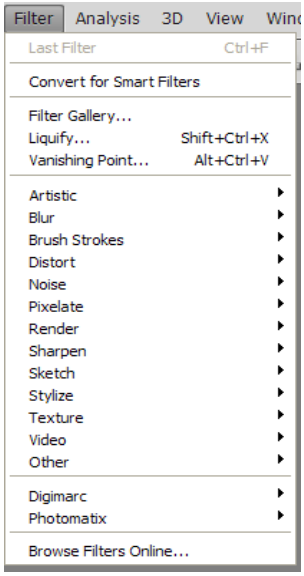
1. Choose **Edit/Preferences** from the **Menu** bar. A list of customisable features for the Photoshop environment appears.
2. Choose **Display & Cursors**.
3. Under the heading **Painting Cursors**, click each of the buttons, and watch the sample image change its icon for the location of the cursor (shown right).
4. Do the same for the ones under the heading **Other Cursors**.
5. For right now, you should leave it at what they were originally set at, so click **Cancel**.

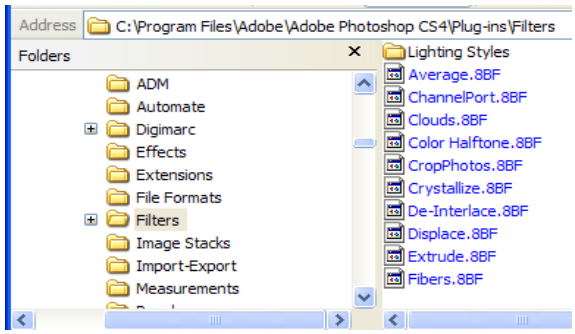
Plug-Ins

Plug-ins are extensions to the main Photoshop software which further enhance its usefulness, or compatibility and interaction with other software products. Some plug-ins are developed by Adobe, but many third-party plug-ins are available. Filters are one example of a plug-in.

To review or select Filters:

1. Open the file "rastergraph.tif"
2. Click on **Filter** in the **Menu** bar. A list of the filter categories appears (shown below).

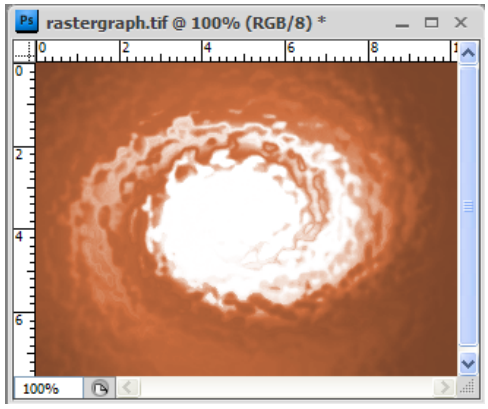




3. Scroll down the list, clicking once on each filter category to look at the filters in each submenu. Count them as you go.

Adds up to a lot of effects possibilities, doesn't it?

4. Choose **Distort/Ocean Ripple**.
5. Set each of the filter options to "9". Click **OK**.
6. The result should look like this:
7. Choose **File/Save As** from the **Menu** bar. Save the filtered image as "Vortex.tif".



Navigating in Photoshop

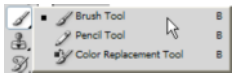
Tools and Tool Options

When an image is being created or modified in Photoshop, the appropriate tool is selected from the **Toolbox** bar, and then the tool is customised to your needs with selections from the **Tool Options** bar.

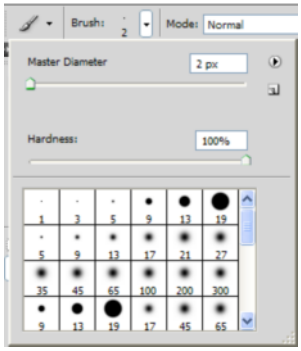
For example, for you to add a neon-looking spiral using the **Airbrush** tool to the vortex you just made, you would want to choose settings giving you a sufficiently small line.

To modify an image using Tools and Tool Options:

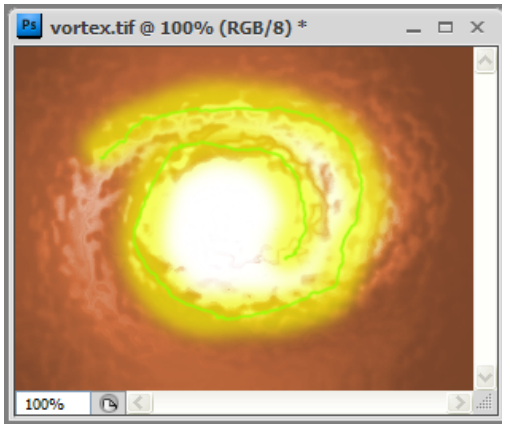
1. Open "Vortex.tif".
2. Select the **Brush** tool from the **Toolbox** bar (shown right).



3. In the **Brush** dropdown on the Options bar, set the **Master Diameter** to 35 and the **Hardness** to 0%. On the Options bar set the **Opacity** to 65%



4. Choose a bright yellow color from the **Swatches** panel by selecting the Swatches tab to activate the panel, then clicking the desired color on the panel.
5. The **Brush** tool is used by clicking and dragging on an area of the image. The tool will lay out a wide, faint area of color
6. Trace the spiral with the **Brush**.
7. Go back to the Brush dropdown and Change the **Brush Size** to 2px and the **Hardness** to 100%.
8. Set your color to a bright green and trace the spiral again. Note the result is a hard-edged line

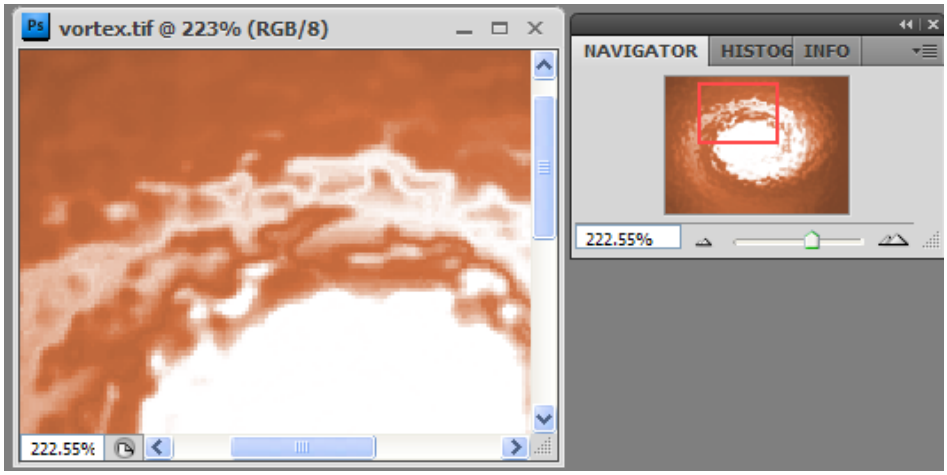


Your image should look something like this:

9. Select the **Airbrush** icon on the Options bar (shown right)
10. Click once in the image to apply a small amount of colour, or hold the mouse button down for the colour to spread out.

Using the Navigator

The Photoshop **Navigator** is a panel window which shows a miniature representation or **thumbnail** of the entire graphic image. Within this thumbnail is a rectangle, which represents that portion of the image currently viewable on the main screen. The icons at the bottom of the **Navigator** panel allow the user to quickly access various magnifications and image areas.



The **Navigator** panel's controls are very easy to use.

To use Navigator:

At the bottom of the panel is a horizontal line with an arrow beneath it.

1. Drag this arrow to the left along the line to decrease magnification.
2. Drag this arrow to the right to increase magnification.

When magnification has increased to the extent that the entire image cannot fit on the main screen, the rectangle shown on the Navigator thumbnail decreases to an area equal in size and position to what is visible.

3. Place the mouse pointer within this rectangle and drag it.

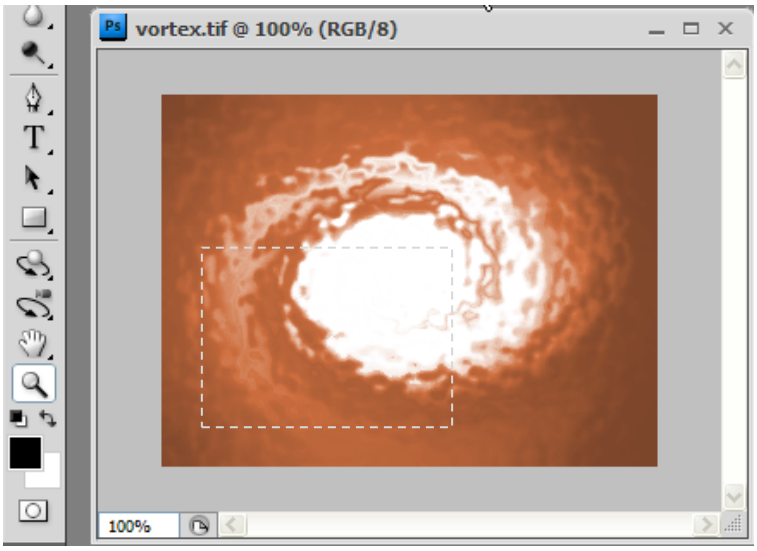
The rectangle moves within the bounds of the thumbnail, and the main screen's image displays the new selected area.

Navigator can also display preset increments. The large and small mountain icons to either side of the interactive magnifier will increase or decrease the image magnification by those increments when they are clicked.

You can also type a specific magnification into the percentage field, and the **Navigator** will reset to that representation.

Zoom Tool

Towards the bottom of the **Toolbox** panel is the **Zoom** tool icon. Similar in function to the **Navigator**, the **Zoom** tool allows you to select an area for viewing by clicking and dragging to define the image area to be viewed.



To use the Zoom tool:

1. To magnify an area, click and drag to define an area. The image will zoom there.
2. To magnify in preset increments, click with the tool on the image.
3. To zoom out again, hold the **Alt** key down while clicking.

Opening Multiple Views

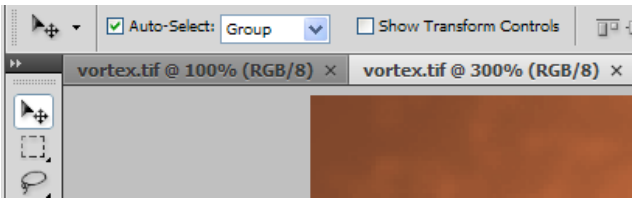
Another method for effectively manoeuvring around an image in Photoshop is to have more than one view of the image displayed at the same time. This is achieved through multiple views.

Using multiple views allows a user to view portions of an image at varying magnifications, and switch between views instantly. This is also useful for viewing two different areas of an image at the same time.

To enable multiple views of "Vortex.tif":

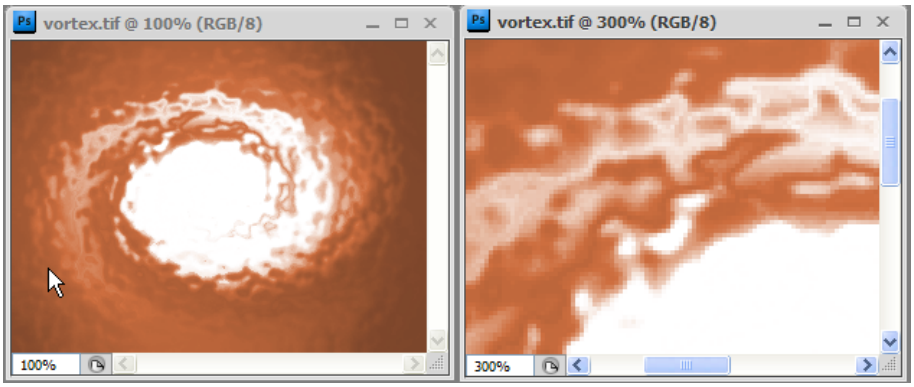
1. Select **Window/Arrange/New Window for Vortex.tif** from the **Menu** bar. A second window showing the file will appear on the Photoshop desktop.

Under normal circumstances all windows are docked below the options bar and clicking on a tab brings that image into view as shown below.



2. Change the magnification for each of the file's windows to suit personal viewing preference.

Using the **Window/Arrange/Float All In Windows** from the **Menu** bar, views may be arranged beside or behind one another, and clicking once on any portion of the desired view will make that one the active view. This technique is useful when working on a small portion of an image at high magnification, to simultaneously assess the result on the image at a lower magnification.



The technique also allows you to have a large image, which cannot otherwise fit onscreen, assigned portions to multiple views which, when selected in sequence, allow the whole of the image to be quickly accessed.

Exercises

Exercise 1: Menu, Toolbox and Options Bars

Objectives:

- To verify locations of items in the Menu, Toolbox and and Options bars.
- To practise tool and tool option selection.

NO IMAGE FILE NEEDS TO BE OPENED OR CREATED FOR THIS EXERCISE.

1. Click once on the title **File** on the **Menu** bar.
2. Look over the items contained in the dropdown list. Note that some are grayed out (currently unavailable) while others are not (currently available).
3. Click once on each of the remaining **Menu** bar titles, and note their items also.
4. Click once on the title **Window** on the **Menu** Bar.
5. Select **Tools**. If the **Toolbox** is visible, it will be turned off. If the **Toolbox** is not visible, it will be turned on.
6. With the **Toolbox** bar visible, click once on a randomly selected tool.
7. Note how the icon of the tool changes to indicate it is the active tool. Also note the **Tool Options** bar displays the options available for using the selected tool.
8. Choose another tool. Note how the **Tool Options** bar displays different options for the new tool.
9. Select a tool which has a small arrow in the lower right corner of its icon. Click and hold the mouse button until a list of related tools appears.
10. Drag the mouse to one of the related tools and select it. Note that its icon now occupies the space on the **Toolbox** bar, and its options are displayed in **the Tool Options** bar.
11. Select another tool having the arrow on the icon, and choose from its list of related tools.

Exercise 2: Panels, Rulers, Preferences and Libraries

Objectives:

- To practise activating panels and rulers.
- To verify locations of libraries.
- To view Preference settings and practise modifying them.

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1. Open "**Vortex.tif**" from your **Module 1** folder.
2. Select **Rulers** from the **Show Extras** dropdown on the Application bar to toggle the Rules on or off.
3. With rulers visible, select **View/Zoom In** from the **Menu** bar. Note that the ruler markings have scaled larger, in keeping with the increased magnification.
4. Select **View/Zoom Out** twice. Note that the image and rulers have scaled smaller, in keeping with the decreased magnification.
5. From the **Window/Workspace** on the **Menu** bar, select **Essentials**. This will arrange and dock all panels to the factory default locations.
6. Select **Window/Layers**. Note that the **Layers** panel, and all other panels docked with it, disappear.
7. Select **Window/ Layers again**. Note that the panel reappears. Do this with other panels listed.
8. In the **Layers** panel window, click on the tab labelled **Channels**. Note how the **Channels** panel comes to the front and is now the active panel for that window.
9. Make the **Swatches** panel visible in its window.
10. Click on the Panel Menu icon in the upper right corner of the panel's window, to display panel options.
11. Choose **PANTONE Colors (Process Coated)** from the list of libraries, and select **OK** when prompted. Note that the available swatch library is now Pantone colors.
12. Repeat steps10-11 above, choosing **Web Safe Colors**, then **Windows**. Note how the swatches panel changes each time a new library is chosen.
13. Repeat step 10 and select **Reset Swatches**, then click **OK** when prompted. The original library of color swatches returns.
14. Select **Edit/Preferences/Units & Rulers** from the **Menu** bar. Change the Ruler unit of measurement to a different unit, and note how the rulers in the image window immediately alter to the new unit of measurement.
15. Click on the **Next** button in the **Preferences** window, and review **Preference** options for the next category. Continue advancing through the Preference options until the **Units & Rulers** screen reappears, then close.

Exercise 3: Plug-Ins & Filters

Objectives:

- To verify the location of filters in Photoshop.
- To carry out a sample use of filters.

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1. Open "**Vortex.tif**".
2. Select **Filter/Noise/Add Noise** from the **Menu** bar.
3. Enter the following settings: Amount=50%; Distribution=Uniform; Monochromatic.
4. Select **OK**. The image document will be filled with a random distribution of pixels.
5. Select **Filter/Blur/Motion Blur** from the **Menu** bar.
6. Enter the following settings: Angle=56; Distance=20 pixels.
7. Select **OK**. The image document will blur the pixels. The result is similar to brushed metal.

Exercise 4: Navigating a Document

Objectives:

- To use the various tools for navigating an image document in Photoshop.
- To practise the methods of zooming, panning and displaying multiple views of an image.

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1. Open "**Vortex.tif**"
2. Select the **Zoom** tool from the **Toolbox** bar. Drag to select an area roughly one-third of the image size.
3. The picture will scale to show the selected area. Click once with the **Zoom** tool. Note how the magnification increases again. Pay attention to the percentage shown in the title bar.
4. Hold down the **Alt** key and click with the **Zoom** tool again. Note how the magnification decreases, and by what amount.
5. Make the **Navigator** panel visible and active. Click twice on the **Navigator** icon for zooming in.
6. Click twice on the **Navigator** icon for zooming out.
7. Click and drag the slider in **Navigator** to the right. When the image reaches 300% magnification, move the mouse pointer onto the **Navigator** image and drag the rectangle around the image. Note that the image document scrolls or pans accordingly.
8. Select a tool at random from the **Toolbox** bar. Press the spacebar while the mouse pointer is within the image document window. Note how the icon changes to the **Hand** tool.
9. With the spacebar held down, use the **Hand** tool to pan and scroll around the image.
10. Select **Window/Arrange/New Window for Vortex.tif** from the **Menu** bar. A new window is created.
11. Click once on the original window to make it the active window. Zoom out to 100% magnification.
12. Click once on the newly created window to make it active. Zoom in to 300% magnification. Use the **Hand** tool and the **Navigator** to move around the window. Note that the 100% magnification window is unaffected.
13. Close the file without saving changes.