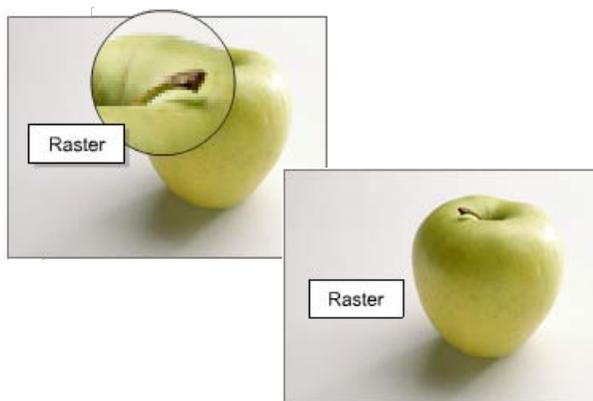


### What is Photoshop?

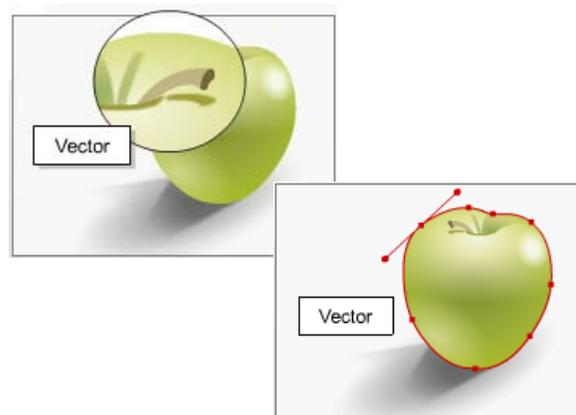
- Photoshop is not an image-creation program, which means that it is not set up to create images from scratch. Instead, Photoshop is designed to alter and improve existing images that have been acquired through digital cameras, scanners, or other means.
- Photoshop is a software program used to edit and manipulate photographic images.
- Photoshop is also ideal for creating realistic artwork that relies on soft edges and blends between highlights, midtones, and shadows.
- Modifications you can make to an image using Photoshop include:
  - adjusting brightness, contrast, and color balance
  - cropping and resizing
  - removing or retouching flaws
  - applying special effects
  - adding text, logos, or portions of other images

<i>Photoshop Feature</i>	<i>What It Does</i>
<b>Retouching</b>	Fix a photograph to get rid of dust flecks, wrinkles, blemishes, ex-girlfriends, or any other undesirable elements of your photograph.
<b>Painting</b>	Use the paint function to colorize black-and-white photographs or create effects in your photographs.
<b>Drawing</b>	Similar to the painting function, drawing allows users to create elements in their images such as lines and shapes that don't exist in real life.
<b>Contact Sheets</b>	Users can create sheets of multiple images to allow for easy previewing, cataloguing and printing sheets.
<b>Web publishing</b>	Publish your finished images on the Web.

### Differences between a Raster and a Vector Image



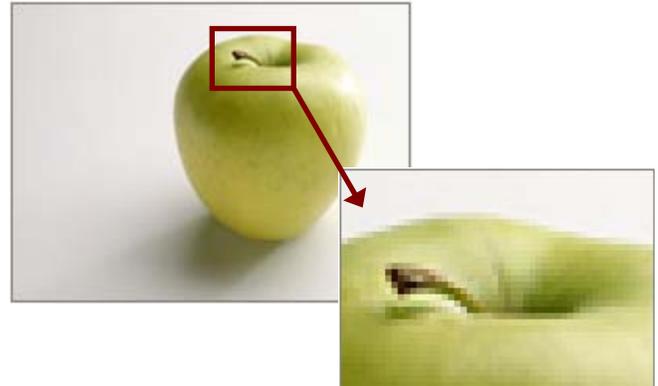
A bitmap—sometimes called a *raster* graphic—is really a collection of tiny squares called pixels. Each pixel has its own color value. When you work with a bitmap image, you are manipulating pixels. Bitmaps make it possible to represent almost any combination of colors, and because of that, they are often used for photographs. Bitmaps lose their quality when they are reduced or enlarged.



Vectors graphics are mathematical formulas that describe geometric shapes, like lines or circles. They are often used for simple graphics that need to be easily reproduced and resized, like company logos. A vector might only contain a few colors, whereas a bitmap might contain millions of colors. In some ways it's easier to work with and manipulate a vector image because they lack the complexity of a bitmap. You can shrink or enlarge a vector without losing any detail, for instance.

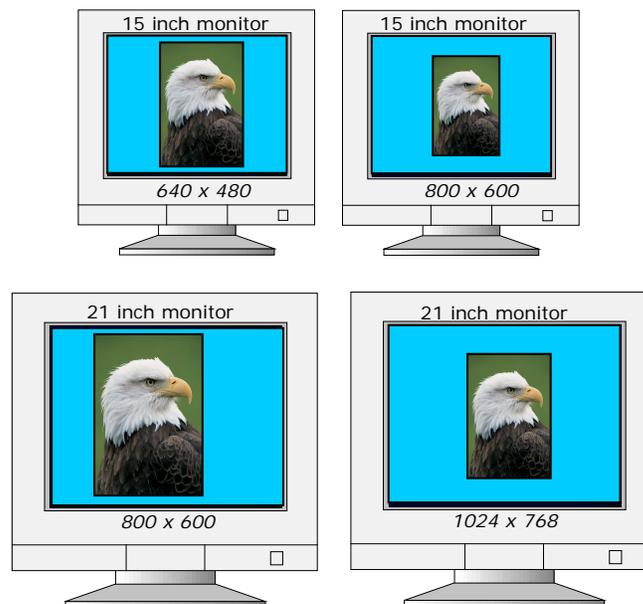
### What Are Pixels?

- Pixels are the basic building blocks for images in Photoshop.
- Each pixel is assigned a color value.
- An image might contain thousands or even millions of pixels.
- Using Photoshop, you can manipulate them, remove them and even create pixels out of thin air.
- The pixels are usually indistinguishable unless you enlarge or zoom in on an image. As a result, colors in a raster image appear to blend, even though each individual pixel has a single, uniform color.



### Understanding Screen Pixels

- A computer monitor can only display a finite number of pixels. The higher a monitor's resolution, the smaller an image will appear on the screen. For example, on a monitor with a 640 x 480 resolution, an image that is 640 x 480 pixels would occupy an entire screen. But if adjusted the monitor's resolution to 800 x 600 and left the image size constant, that same image would occupy only a portion of the screen.
- If you plan to display your images over the Web, you should be especially mindful of screen pixels. Monitors come in many shapes and sizes, and since you want your image to be displayed on as many monitor types as possible, as a rule of thumb, your image should never exceed 800 x 600 pixels.



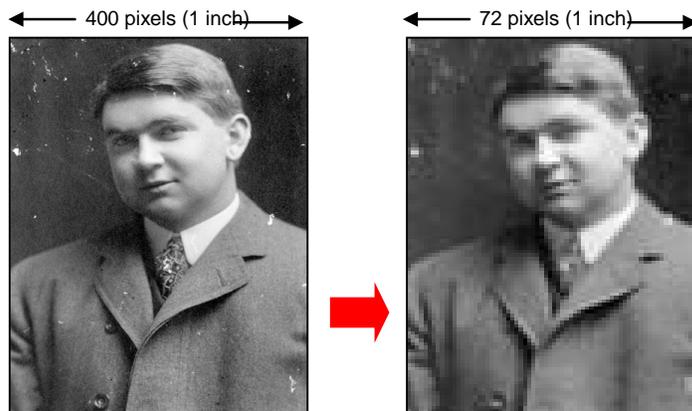
#### Monitor Size

- A monitor's physical size affects the absolute size of an image. An image on a 15 inch monitor will appear larger on a 21 inch monitor, assuming the two monitors have the same resolution.
- The two images will occupy the same proportion of the screen (i.e. an image that is 800 x 600 would still fill the entire screen on a 21 inch monitor with the same resolution).

#### Monitor Resolution

- You can also express a monitor's resolution in terms of the number of pixels (also called dots) per unit of measurement on the monitor. The most common measurement is dots per inch (dpi).
- A monitor's resolution determines how large an image will appear on screen (i.e. an image that is 96 pixels by 96 pixels would occupy one square inch on a 96 dpi monitor).
- Your printer resolution probably differs from your monitor resolution. Because resolution affects image size, images on the screen often have different dimensions once they are printed.

### Understanding Image Resolution



- In the simplest terms, an image's resolution describes how tightly its pixels are packed together. An image with a higher resolution almost always looks better than an image with a lower resolution. But higher resolution images come at a price, they consume more memory than low-resolution images. In practical terms, a higher resolution image takes longer to print or download on a Web site.
- When somebody says an image's resolution is 300 pixels per inch, they are referring to linear inches, not square inches. A 300 pixel per inch image actually contains 90,000 pixels per square inch ( $300 \times 300 = 90,000$ ). You can use resolution to calculate an image's dimensions. If an image is 300 pixels wide, and its resolution is 300 pixels per inch, you know immediately that that image is one inch wide ( $300 \text{ pixels} / 300 \text{ pixels per inch} = 1 \text{ inch}$ ).
- When you change an image's resolution, you have to decide if you want Photoshop to resample the image. If you choose to resample, Photoshop will either add pixels or eliminate pixels in order to keep the print dimensions constant. If an image's print width is one inch, and you change the resolution from 300 pixels per inch to 100 pixels per inch, Photoshop decides which third of the pixels to keep and tosses out the remaining pixels. You lose quite a bit of detail when you do this, but you also save storage space. The image's print width is still one inch.
- If you decide not to resample, you are preserving the image's total pixel count. No pixels are tossed out. Instead, they are spread out over a larger or smaller area. As you lower the resolution, you actually increase the print dimensions. The opposite is true when you increase the resolution: the image's print dimensions get smaller. Consider the following example: an image is one inch wide, and its resolution is 300 pixels/inch. You decide to lower its resolution to 100 pixels per inch. The remaining 200 pixels are spread over two new inches. Your new image's print width is three inches instead of one inch.

### Understanding File Formats

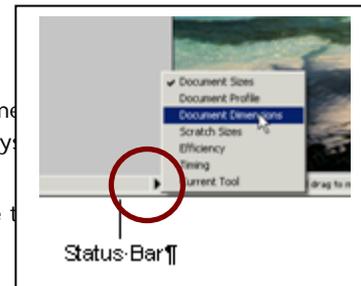
- Photoshop supports 16 file formats by default. You can use plug-ins to increase this support to 35 file formats.
- Each file format saves an image to disk in a different way, and has specific uses.
- Many file formats support compression, which reduces the size of saved image files.
- Each filename includes a three-character or four-character extension that identifies the format in which a file is saved.

Photoshop Document (.PSD)	Joint Photographic Experts Group (.JPG or .JPEG)	Tagged Image File Format (.TIF or .TIFF)	Encapsulated PostScript (.EPS)	Graphics Interchange Format (.GIF)
PSD is Photoshop's native format. It can save information related to any of Photoshop's features. Photoshop opens and saves PSD files faster than files in any other format. PSD uses a lossless compression algorithm to reduce file size without any loss of data. Few other applications support the PSD format, so you may need to save artwork in a different format to make it accessible.	One of the most widely-supported image formats, JPEG format makes it ideal for continuous images, such as photographs, that need to be accessible in other applications or published on the Web. It also has better compression features – 13 settings – than any other format. However, its compression involves the loss of some image data. Save an image in JPEG format only when you've finished editing it.	TIFF is the best format for working with scanned images and for printing high-quality images. TIFF is the most widely supported image-printing format across both the Macintosh and PC platforms. It supports up to 24 channels and multiple layers, including transparent layers, and is supported by most raster image applications.	EPS images are essentially vector images that use the PostScript language to describe their elements. EPS is suitable for exporting an image to many vector-based drawing and desktop publishing programs. When you save an image in EPS format, you can choose various printing-specific options. You can also choose to save the image as a raster image.	For line drawings, schematics, and screengrabs, you should use the GIF format instead.

### Displaying File Information with the Status Bar

The *Status Bar*—located at the bottom of the screen—displays information about the active file.

1. Open the file.
2. Make sure the Status Bar is displayed. If it's not, select **Window** → **Status Bar** from the menu. To hide the Status Bar, select **Window** → **Status Bar** again. The Status Bar is located at the bottom of the screen. It displays information about the active file by default.
3. Click the **triangle** at the bottom of the screen. Photoshop displays a menu as shown in the image. You can change the type of information the Status Bar displays.



Menu Item	Description
<b>Document Sizes</b>	The first number is the printing size of the image (flattened); the second number is the size of the image with layers and channels. See the chapters on layers and channels.
<b>Document Profile</b>	Displays the name of the color profile. See the chapter on color.
<b>Document Dimensions</b>	The dimensions of the current file, displayed in pixels, inches or centimeters.
<b>Scratch Sizes</b>	The first number is the amount of memory Photoshop is currently using; the second number is the amount of RAM currently available to Photoshop.
<b>Efficiency</b>	Displays how efficiently Photoshop is performing operations in percentage terms.
<b>Timing</b>	The amount of time it took to complete the last operation.
<b>Current tool</b>	The name of the current tool.

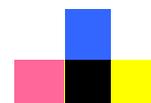
### Understanding Colors

There are three types of colors that you will need to know in order to use Photoshop to its full potential. In general, use images in RGB mode if your final product will be displayed on the Web or on a computer screen. However, if your final product will be printed, it's best to use CMYK mode in order to see your image accurately.

**The first is called RGB color.** RGB stands for red, green, and blue. RGB color is created by objects reflecting elements of red, green, and blue light and, technically speaking, it is the color that we see in everyday life. It is also the color that your television and computer monitor use to project images and therefore it is the type of color most often used in Photoshop images on the screen.



**The second type of color, CMYK color,** is composed of cyan, magenta, yellow and black. With colors created in CMYK, the cyan, magenta, yellow and black are added in different degrees to achieve the desired shades. These are the colors used in the printing process. The four ink colors are combined to produce the desired shade. CMYK colors can do a pretty good job of reproducing most RGB colors, but not all.



**The third type of color is grayscale.** Many people call these images "black and white" although the graphic term is grayscale because the image is actually made up of 256 shades of gray.

### Getting Help

Photoshop, by default, opens with a Welcome screen that has links to tutorials and help features that introduce its new features:

- Learn the Basics
- Advanced Techniques (Online)
- Working With What's New
- Tips and Tricks From the Experts
- Setting Up Color
- New Features At A Glance
- New Feature Highlights
- What's New Movie (Online)

- If you don't want the Welcome page to appear every time you start Photoshop, you clear the **Show this dialog at startup** checkbox and click **Close**.
- The **Help** menu provides a range of "How To" tips for performing common tasks. Each "How To" contains instructions for specific tasks.
- Photoshop includes a fully searchable help system that you can use to locate specific information about its features. To access the help system, you select **Help - Photoshop Help**.
- You can use the **Index** and **Search** links to locate specific help pages within the help system. The sidebar of the help window now contains an alphabetical index of help topics. You scroll down the index to find the topic and click it to access its associated help page. The search feature accesses help in a less focused way than the index feature.