

Adobe Creative Suite

Photoshop

MTSU School of Journalism
Visual Communication



MTSU SCHOOL OF JOURNALISM

mtsujournalism.org

Visual Communication

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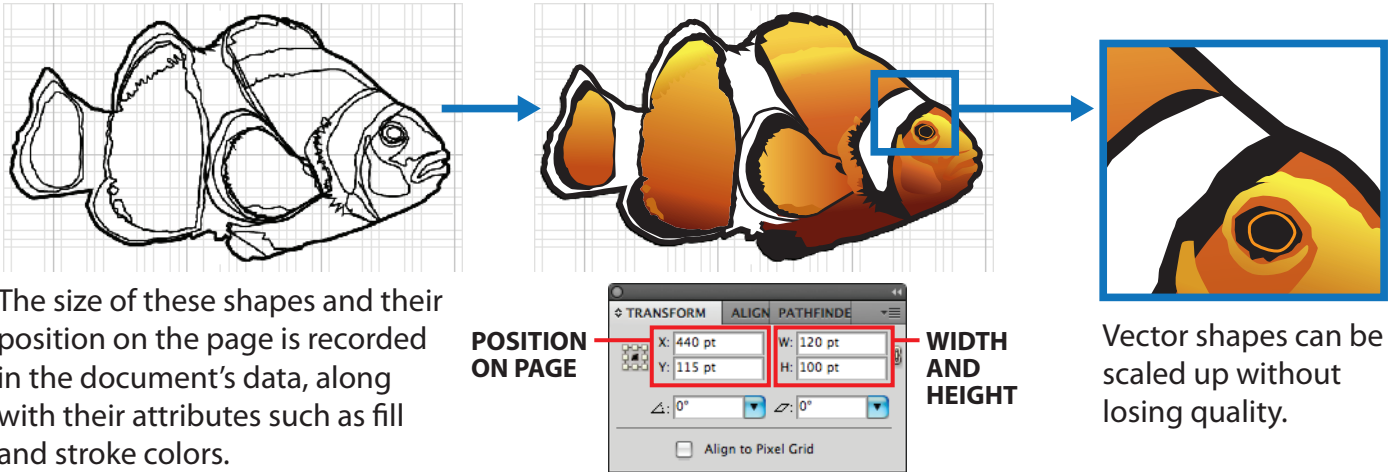
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Bitmap vs Vector

Vector

Adobe Illustrator is a **vector** application, meaning that it uses mathematical data to define the position, size and appearance of points, lines and shapes.



The size of these shapes and their position on the page is recorded in the document's data, along with their attributes such as fill and stroke colors.

POSITION ON PAGE

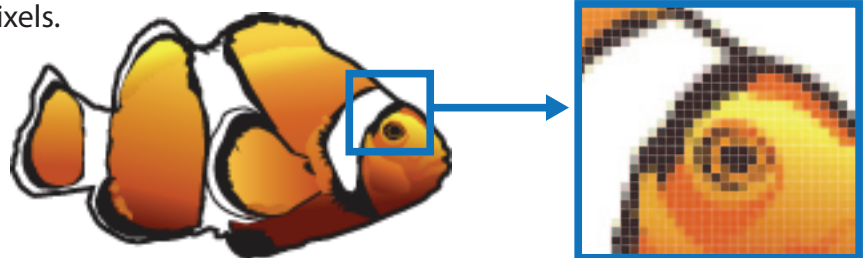
WIDTH AND HEIGHT

Vector shapes can be scaled up without losing quality.

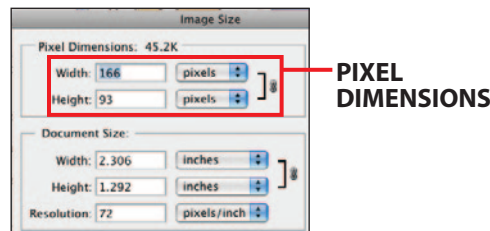
Bitmap

Photoshop is a **bitmap** application, meaning that it displays images as an arrangement of pixels.

The above vector drawing was imported into Photoshop, which converted it to pixels, a process called **rasterization**. It is now just a collection of colored dots.



The Image Size dialog box in Photoshop shows that the image measures 166 pixels across and 93 pixels deep: That's a total of 15,438 pixels that compose the image.

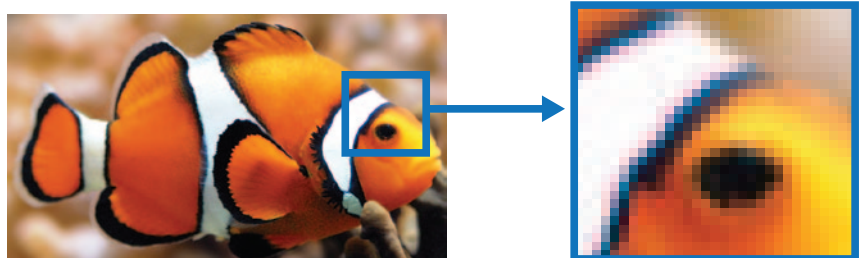


PIXEL DIMENSIONS

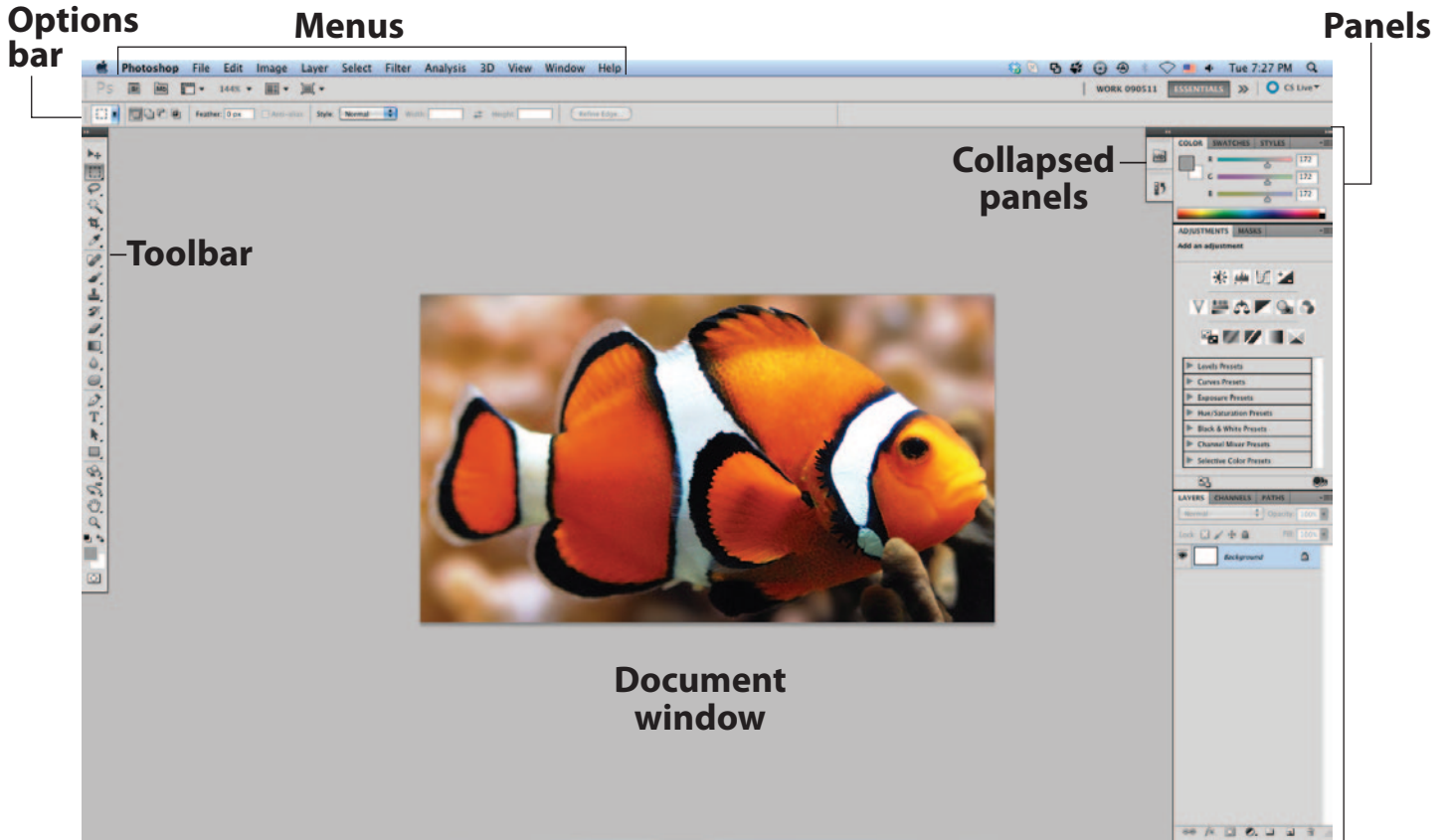
Bitmap images lose quality when scaled up.

Here is an actual digital photo of the clownfish. Like the above image, it's a collection of pixels arranged in rows and columns.

The main task in Photoshop is to modify pixels, either all the ones in the photo or specific ones that have been selected.



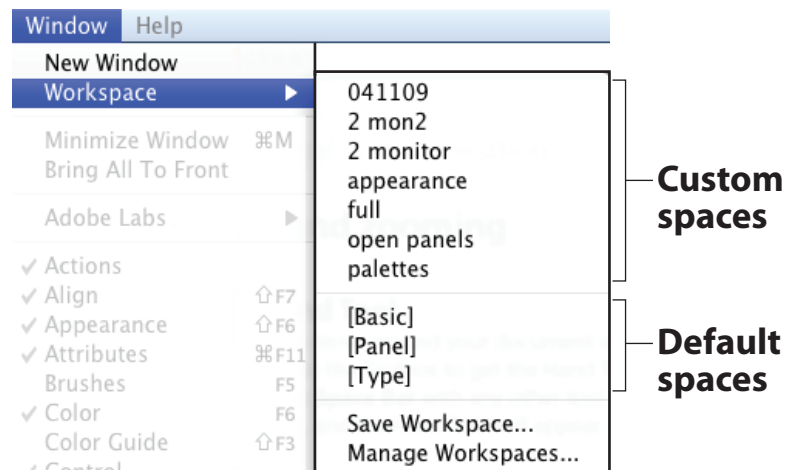
Interface



Saved workspaces

Under the **Window** menu, select **Workspace**. There will be several default spaces in the popup menu that will change the selection and appearance of panels and bars.

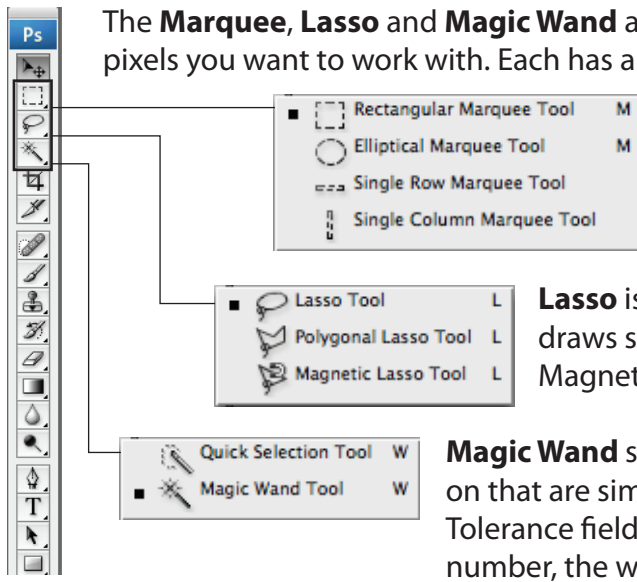
You can save your own custom workspace. Arrange panels and bars the way you want, then select **Save Workspace ...**



Selecting pixels

TOOLS PANEL

The **Marquee**, **Lasso** and **Magic Wand** are the three main tools for selecting the pixels you want to work with. Each has a submenu with more tool options.



Marquee is click-and-drag over the area you want to select. Shift key constrains it; Option key changes point of origin to center.

- Rectangular Marquee Tool M
- Elliptical Marquee Tool M
- Single Row Marquee Tool
- Single Column Marquee Tool

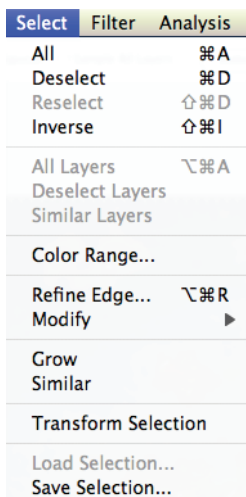
Lasso is free-form by dragging the cursor. Polygonal Lasso draws straight segments between successive mouse clicks. Magnetic Lasso finds edges of high contrast.

- Lasso Tool L
- Polygonal Lasso Tool L
- Magnetic Lasso Tool L

Magic Wand selects all pixels in the vicinity of a pixel that you click on that are similar to that pixel. Its sensitivity is adjustable in the Tolerance field in the control panel across the top: the higher the number, the wider the range of similar pixels that will get selected.

- Quick Selection Tool W
- Magic Wand Tool W

SELECT MENU



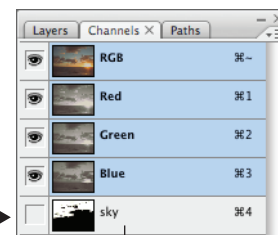
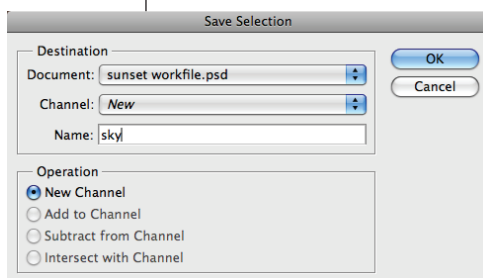
There are more choices in the Select Menu in the top menu bar: **Select All**, **Deselect** and **Inverse**. Note the keyboard shortcuts.

Color Range selects all pixels in the entire document similar to an area that has been sampled with the Eyedrop Tool. It has a sensitivity scale from 1 to 200.

Modify provides options for modifying a selection you've already made. Feather gives it a fuzzy edge, for example.

- Border...
- Smooth...
- Expand...
- Contract...
- Feather... ⌘D

Save Selection allows you to save a selection so you can reselect the same pixels again in the future. Doing so creates a new channel in the **Channels Panel** (available under Windows menu). You can select the pixels again by **Command clicking** on the channel.



New Channel
Command-click to make selection.

Adjusting hue, value and intensity

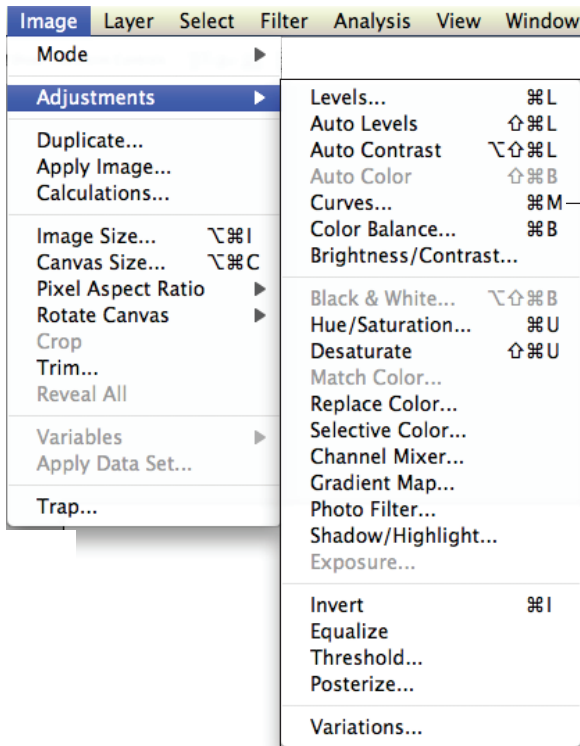


IMAGE: ADJUSTMENTS

The options for modifying the hue, value and intensity of pixels you've selected, or for the entire active layer if you haven't made a selection, are under this submenu.

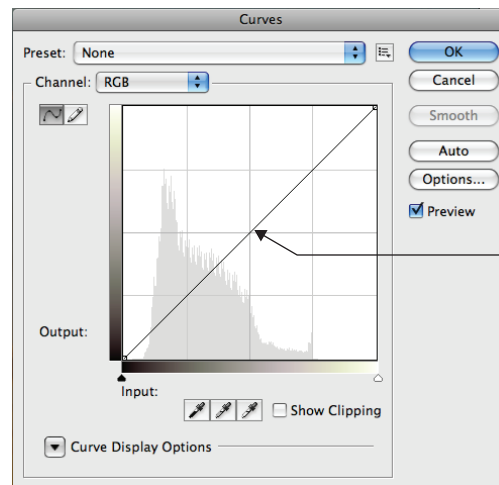
The most commonly used ones are **Levels**, **Curves** and **Hue/Saturation**. Selecting any item in the submenu will call up a dialog box with different ways to change the pixels in your selection. Generally, Levels and Curves are good for modifying value and intensity levels, while Hue/Saturation is useful for shifting colors, or hues, but can also modify intensity and value — here it's referred to as **Saturation** and **Lightness**.

The dialog boxes for most of the commands are similar: there are sliders as well as fields for numerical input. Dragging the sliders will change the value levels of your document.

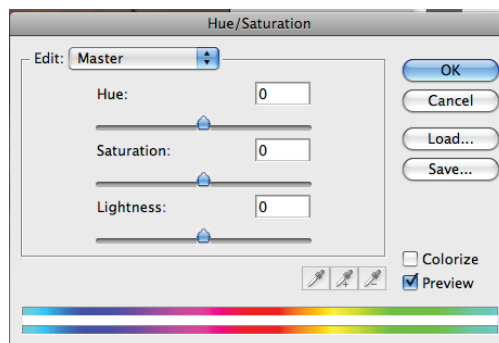
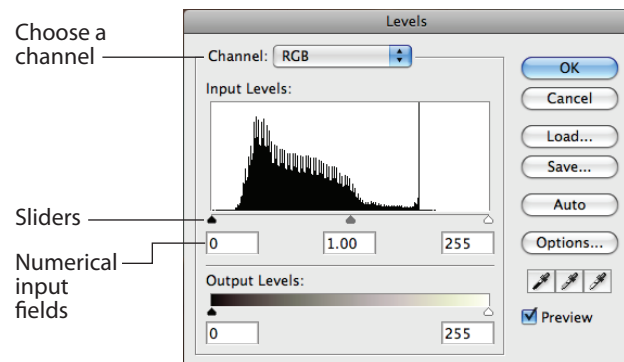
You can also choose a specific channel to modify.

The **Auto** button will make a best guess at a balanced adjustment.

You can undo changes you've made without leaving the dialog box by holding down the Option key — the **Cancel** button will change to **Revert**.

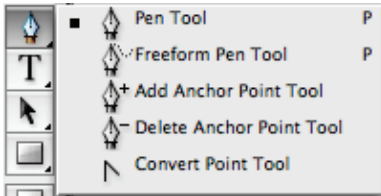


Click and drag on endpoints of curve to move them around, or click and drag anywhere on the curve itself to add a control point.

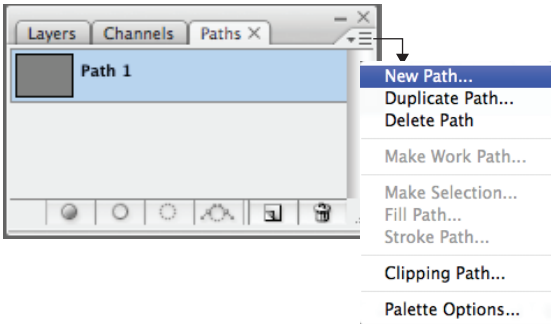


Saving selections

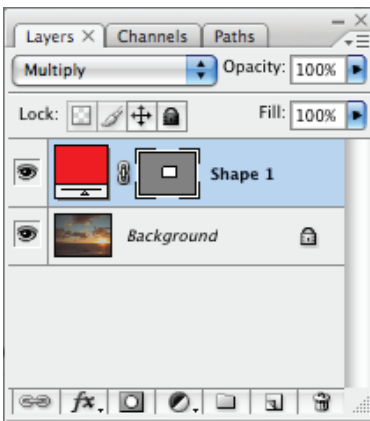
PEN TOOL options in the tools panel



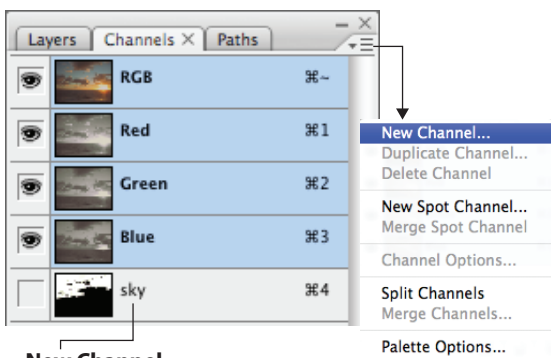
PATHS PANEL and submenu



VECTOR MASK LAYER



CHANNELS PANEL



New Channel
Command-click to make selection.

PATHS

The **Pen Tool** in Photoshop works the same way as in Illustrator, but is used to make **Paths** and **Vector Masks**. To make a new path:

- In the **Paths Panel**, choose **New Path** from the submenu. The dialog box will allow you to give it a name.
- Select the Pen Tool, and draw a path.
- When complete, you can use it to select the area inside the path by either choosing **Make Selection . . .** or by Command clicking on the path name in the panel.

VECTOR MASKS

You can also choose to make a **Vector Mask** with the Pen tool. It will show up on its own layer in the Layers Panel. The shape will be filled with whatever the foreground color is in the Color Panel. This can also be used to make a selection, by Command clicking on the shape’s thumbnail and then making another layer, such as the background, active. The vector shape can be rasterized — turned into pixels just like the rest of the document.

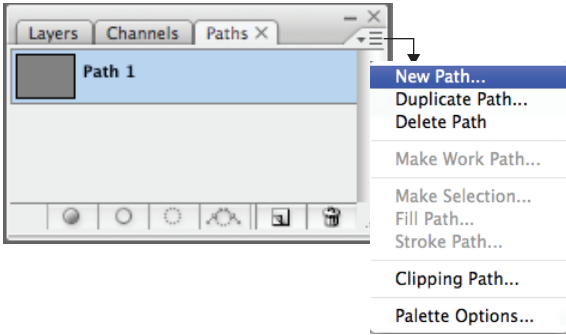
CHANNELS

Any area of selected pixels can be saved as a channel. Choose **Save Selection** under the **Select** menu — this creates a new channel in the **Channels Panel**. You can select the pixels again by **Command clicking** on the channel.

You can also create a new, blank channel from the submenu in the Channels Panel. Clicking on it will hide the other channels, and all you will see is an entirely black space. Any area that gets turned white will be part of the selection, so you can erase parts of it with the brush and eraser tools, but make sure that white is the active color in the Color Panel.

Making a new path

PATHS PANEL and submenu

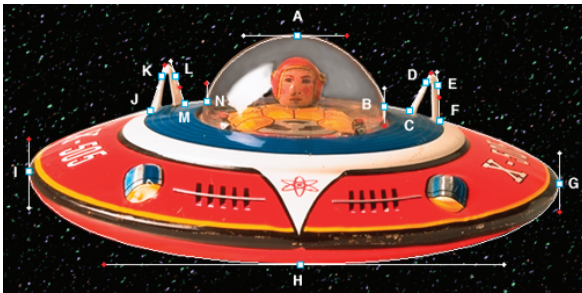


1. In the **Paths Panel**, select **New Path...** in the submenu. (In CS3, if you don't do this first, you will start drawing a vector mask instead, which will automatically generate a mask layer.)

2. With the **Pen** tool, draw your path on your image. The Pen tool works mostly the same as in Illustrator, with some minor differences.

- Click** to create an anchor point.
- Click-drag** to create a point with control handles.
- Option-click** to remove a handle from an existing point.
- Option-click-drag** to add a handle to an existing point.
- Hold down **Shift before** adding a new point to constrain it horizontally, vertically or diagonally to previous point.
- Hold down **Shift after** adding a new point but before dragging to constrain control handles horizontally, vertically or diagonally.

DRAWING A PATH



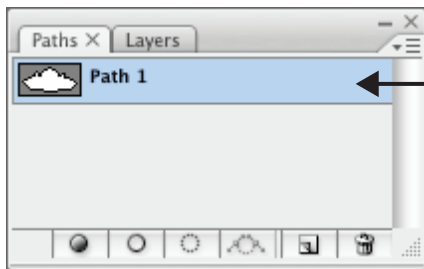
EDITING THE PATH



COMMAND KEY

3. To **edit the path**, hold down **Command** and click on the path with the Pen tool. The cursor will change to a pointer, and can now be used to move points and reposition control handles. (You can also select the Convert Anchor Point Tool from the Pen tool's submenu in the toolbox.)

To add or delete points, just like in Illustrator, hold the Pen tool over points or over the path.



COMMAND-CLICK

4. To make a selection from the path, **Command-click** on the path in the Paths Panel, or choose Make Selection from the panel's submenu.

Remember that the pixels you're selecting will be on whatever the active layer is.

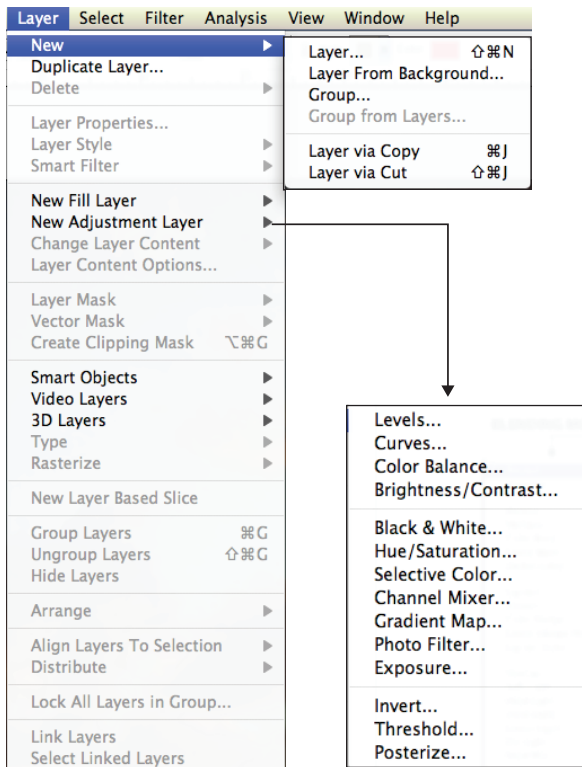
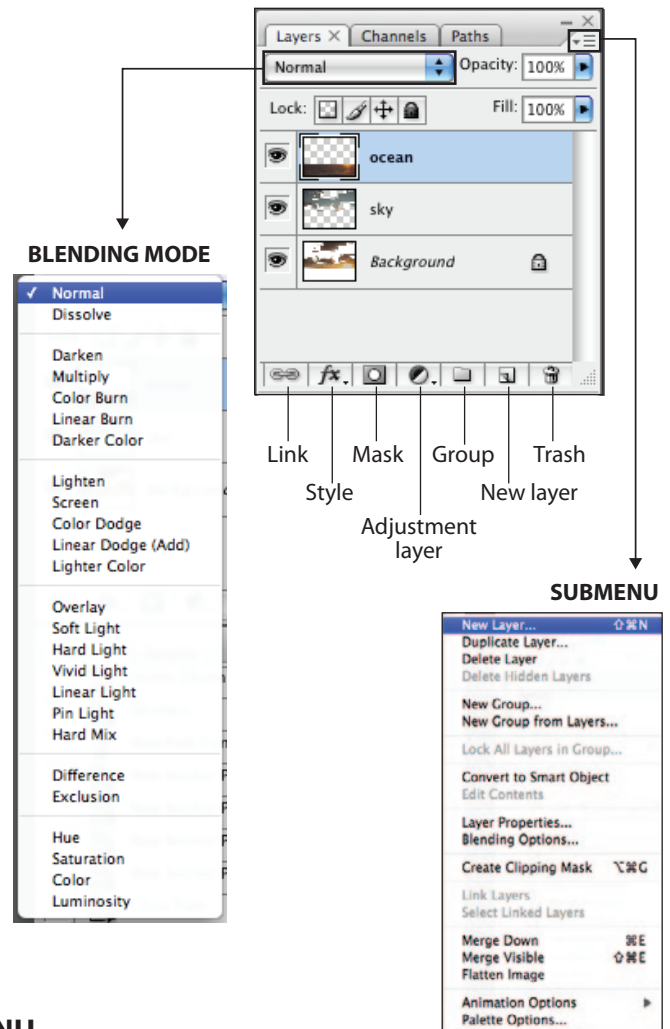
Layers

LAYERS PANEL

Separating out different parts of your image onto different layers allows you to modify only the pixels on a given layer without having to select them. Clicking on a layer in the Layers Panel makes it the active layer, and any actions will only affect the pixels on that layer.

Using layers is also an important way to achieve different effects in Photoshop. Changing the blending mode of a layer affects the appearance of all the layers beneath it.

- **New:** Click New Layer icon at bottom of panel, or choose New Layer. . . command from submenu in upper right corner.
- **Move:** Drag it above or below other layers.
- **Delete:** Drag to Trash icon at bottom of panel.
- **Lock/unlock:** Click on lock icons above layers.
- **Hide/unhide:** Click on eye symbol on left of layer.



LAYER MENU

You can also control many aspects of layers from here, including not only making a new layer, but a new **Layer via Copy** or **Cut** — these two choices will make a new layer and move selected pixels to that layer.

NEW ADJUSTMENT LAYER

These layers don't contain pixels but allow you to perform adjustments such as Levels or Curves on all layers beneath it.

Pasting into a selection

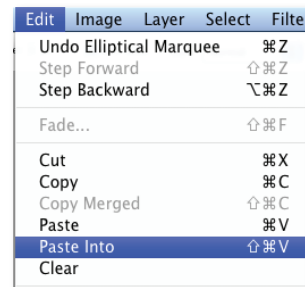


1. Make a selection using any of the selection tools.

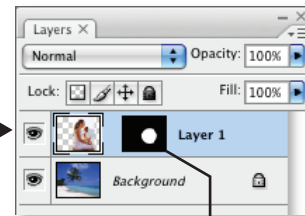
2. Copy an image from another source.



3. Paste into: Use the Paste Into command from the Edit menu.



A new layer is automatically generated, with a mask.



MASK



4. Reposition: Use the Move Tool to move the pasted image around inside its mask. You can also scale, rotate, or otherwise change the image inside its mask by choosing any of the Transform commands from the Edit menu.

To reposition or resize the mask shape itself, click on the mask icon in the layer.

Making a drop shadow

1. Select the lettuce

Make a selection of the lettuce head.

**Shortcut:*

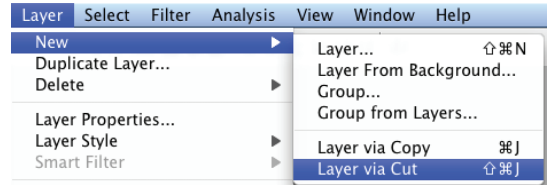
- Drag a rectangular marquee around the lettuce.
- With Magic Wand tool (set to a tolerance of 1), hold down Option and click on white part of rectangular selection. This deselects white area around lettuce.



2. Move the lettuce to a new layer

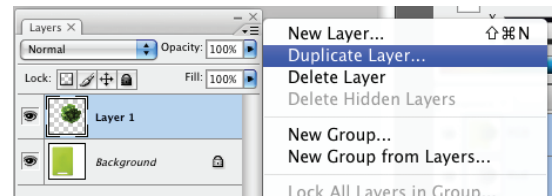
Use the **Layer via Cut** command under the Layer menu.

Move the lettuce over the cutting board using the Move Tool.



3. Make a duplicate layer

Use the **Duplicate Layer** command in the Layers Panel sub-menu. This third layer will be the lettuce head.



4. Fill the shadow

Layer 2 will be the drop shadow. Hide layers 1 and 3 by clicking on the Eye icons. Select the lettuce on layer 2 and fill the selection with solid black.

**Shortcut:*

- Click anywhere outside the lettuce with Magic Wand, then do Selection Inverse from the Select menu.
- Paint the selection with a brush, or simply press Option-Delete.

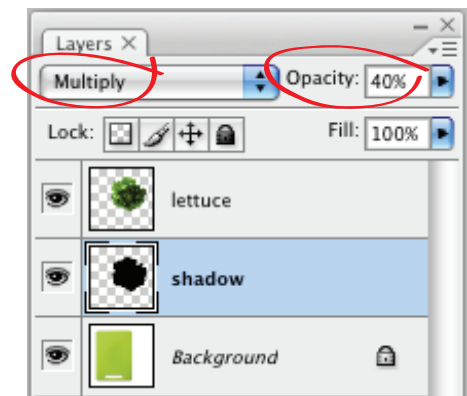


Move the shadow down and to right with the Move Tool.

5. Multiply and Blur

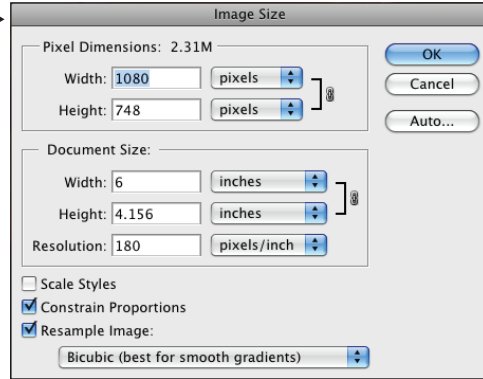
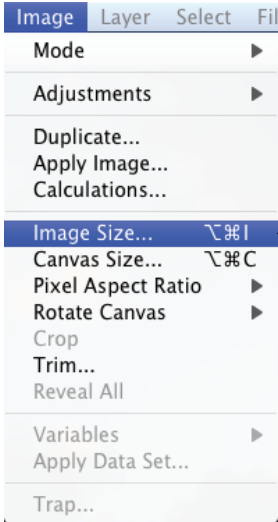
Change layer 2's **blending mode** to Multiply and **opacity** to 40%.

Under the Filter menu, select **Blur > Gaussian Blur**. Apply a radius of about 5 pixels.



Size vs resolution

To change your document's size, go to **Image Size** under the Image menu. Make sure that **Resample Image** is checked on if you want to change its pixel dimensions.



There are two areas in the **Image Size** dialog box:

Pixel Dimensions: How many pixels there are across and down in the document.

Document Size: The size at which the document will print.

The last field is **Resolution:** This is how many pixels there are per inch. The higher the resolution, the more detail and better quality the document will display.

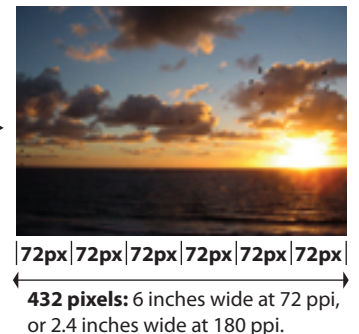
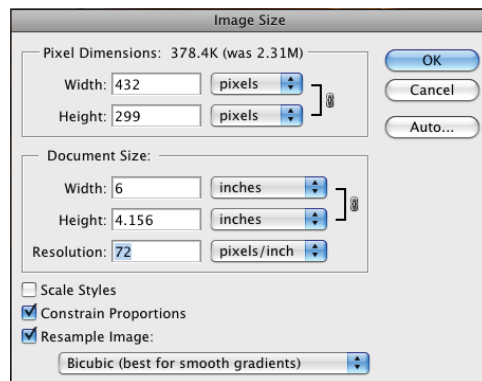
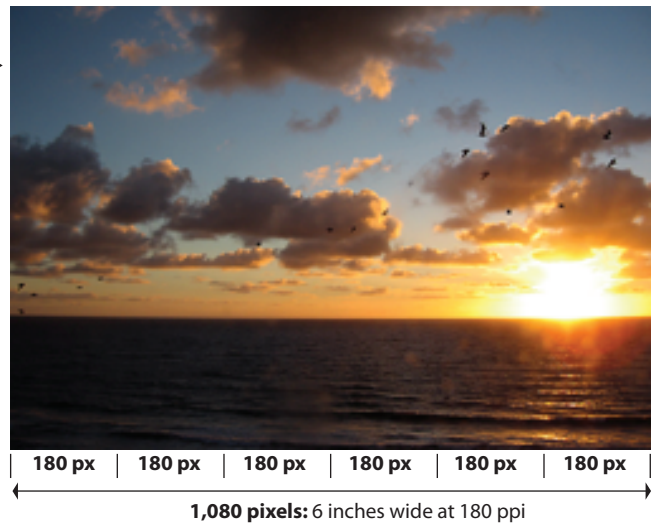
RESOLUTION

Resolution is the number of pixels per inch. The photo at right is 1,080 pixels wide. With the resolution set at 180 ppi (pixels per inch), it will print at 6 inches wide, with 180 pixels in each of those inches. It will print at reasonable quality.

If the resolution is changed from 180 to 72, then the photo goes down to 432 px (pixels) in width. The document size is still set at 6 inches, so it will still print 6 inches wide, but with only 72 pixels in each inch. As a result, the print quality will be noticeably worse. This, however, is sufficient quality to use on the Web.

Reducing the pixel dimensions or resolution of a document is called **downsampling**. Photoshop actually discards information in this process, and once you save and close the document, that information is lost.

Increasing the dimensions or resolution, called **upsampling**, forces Photoshop to try to simulate the missing information. This will cause noticeable reduction in quality, and is thus inadvisable.



Preparing files for different outputs

A document needs to have a different resolution and color space depending on where it's going to be used.



← 400 pixels →

ONLINE

Resolution: **72 ppi**

Color space: **RGB**

File formats: **JPG, GIF, PNG**

Color adjustments: Should look good on a default monitor calibration. Unsharp mask moderately if necessary: try 25-50%.



← 1,080 pixels: 6" wide at 180 ppi →

LASER, INKJET PRINTER

Resolution: **180-220 ppi**

Color space: **RGB, CMYK**

File formats: **Any**

Color adjustments: Depends on printer and paper. Print some test files with pure C, M, Y and K areas, then compare them with how they look on your monitor. Most often colors, especially cyan, will print darker than they look on the monitor.

Unsharp mask: 150, 1, 4.



← 1,800 pixels: 6" wide at 300 ppi →

OFFSET PRINTING PRESS

Resolution: **170-300 ppi**

Color space: **CMYK**

File formats: **TIF, EPS, PICT**

Color adjustments: Professionals calibrate their monitors to match press output. Under the Edit menu, choose Color Settings and use a profile that resembles the press and paper that will be used.

Unsharp mask: 150, 1, 4.



Separations:

