# Composite Movie Ad

Tantamount Studios, one of the largest film production companies in Hollywood, is developing a new movie called "Aftermath." You have been hired to develop an advertisement that will be used to announce the movie in several different trade magazines.

This project incorporates the following skills:

❏ Creating a single composite ad from multiple supplied images

❏ Compositing multiple photographs, using various techniques to silhouette the focal object in each image

❏ Incorporating vector graphics as rasterized layers and Smart Object layers

❏ Scaling and aligning different objects in relation to the page and to each other

❏ Managing individual layout elements using layers and layer groups

❏ Saving multiple versions of a file to meet different output requirements
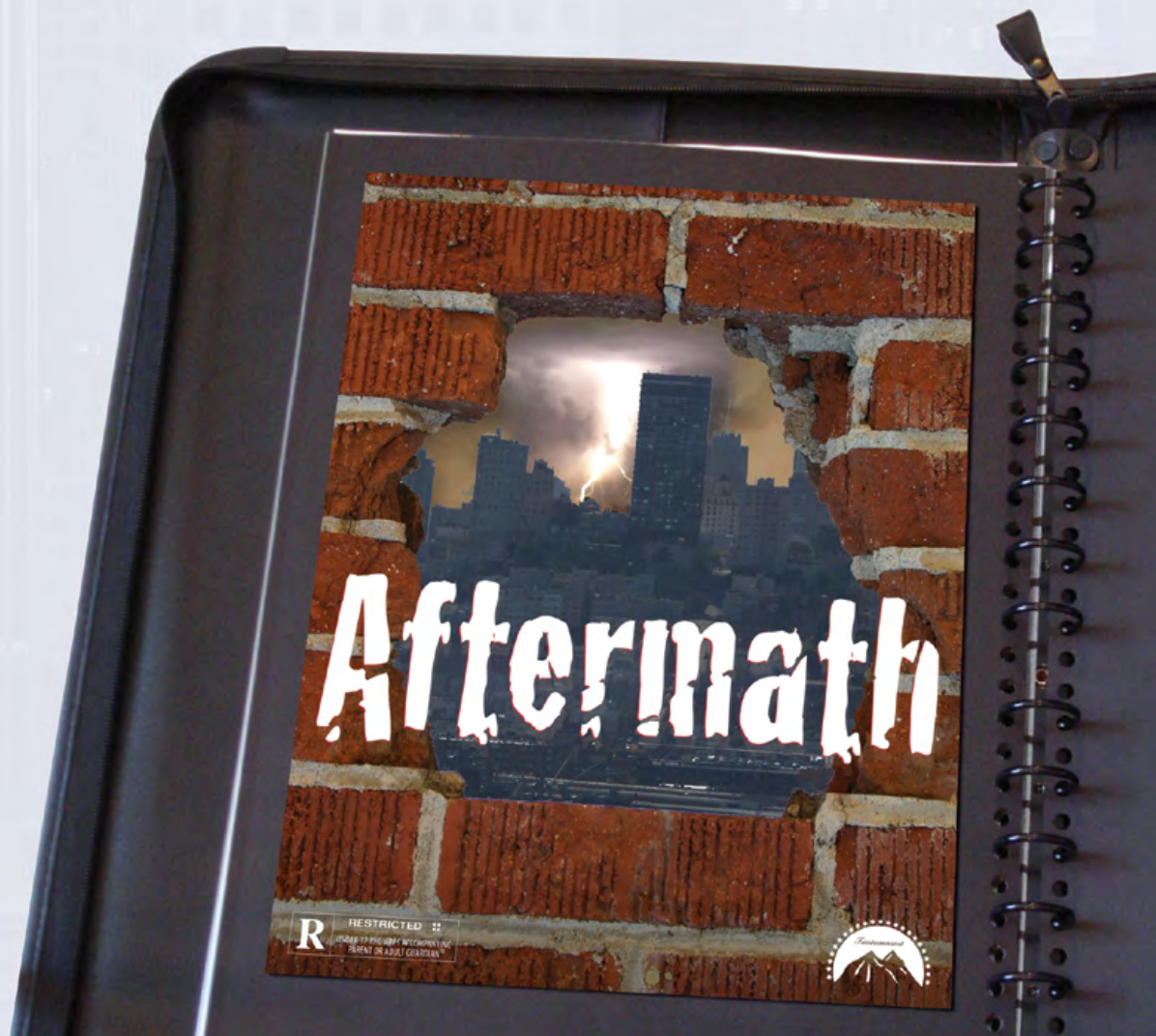
client comments

Here's a basic synopsis of the movie:

A massive hurricane, unlike anything ever seen on the West Coast of the United States, takes aim at San Francisco. The category 6 hurricane sparks tidal waves, fires, floods — the resulting destruction dwarfs even the earthquake and fire of 1906. The movie follows the storm survivors through the process of rebuilding, both personally and politically.

This movie is going to be one of our summer blockbusters, and we're throwing a lot of resources behind it. We'll be putting the same ad in multiple magazines, and they all use different software to create the magazine layouts. We need the ad to work for all of our placements, regardless of what software is being used by the magazine publishers.

art director comments

The client loved the initial concept sketch I submitted last week, so we're ready to start building the files. I've had the photographer prepare the images we need, and the client has provided the studio and rating logo files. They also sent me the first two magazines' specs:

Magazine 1

– Bleed size: 8.75 × 11.25″
– Trim size: 8.5 × 11″
– Live area: 8 × 10.5″
– Files should be submitted as native layout files or layered TIFF

Magazine 2

– Sizes are the same as Magazine 1
– Files should be submitted as flattened TIFF or PDF

project objectives

To complete this project, you will:

❏ Resize a raster image to change resolution

❏ Composite multiple images into a single background file

❏ Incorporate both raster and vector elements into the same design

❏ Transform and arrange individual layers to create a cohesive design

❏ Create layer groups to easily manage related layer content

❏ Use selection techniques to isolate images from their backgrounds

❏ Save two different types of TIFF files for different ad requirements
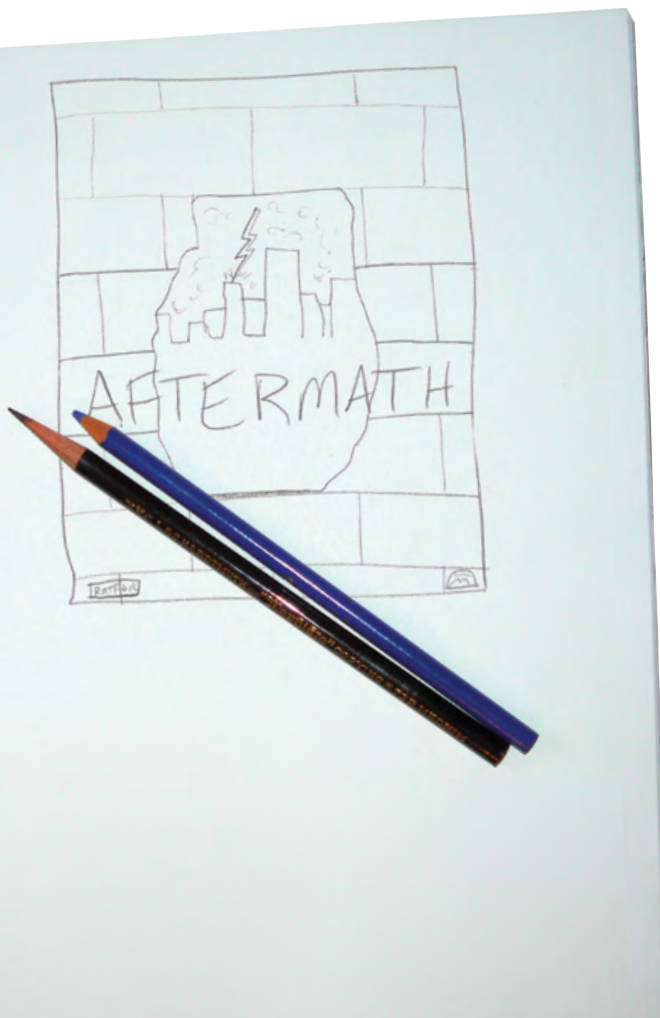
Stage 1 **Compositing Images and Artwork**

Technically speaking, **compositing** is the process of combining any two or more objects (images, text, illustrations, etc.) into an overall design. When we talk about compositing in Photoshop, we're typically referring to the process of combining multiple images into a single cohesive image. Image compositing might be as simple as placing two images into different areas of a background file; or it could be as complex as placing a person into a group photo, carefully clipping out the individual's background, and adjusting the shadows to match the lighting in the group.

Types of Images

There are two primary types of digital artwork: vector graphics and raster images.

Vector graphics are composed of mathematical descriptions of a series of lines and shapes. Vector graphics are **resolution independent**; they can be freely enlarged or reduced, and they are automatically output at the resolution of the output device. The shapes that you create in Adobe InDesign, or in drawing applications such as Adobe Illustrator, are vector graphics.

Raster images, such as photographs or files created in Adobe Photoshop, are made up of a grid of independent pixels (rasters or bits) in rows and columns (called a **bitmap**). Raster files are **resolution dependent** — their resolution is fixed, determined when you scan, photograph, or otherwise create the file. You can typically reduce raster images, but you cannot enlarge them without losing image quality.

Line art is a type of raster image that is made up entirely of 100% solid areas; the pixels in a line-art image have only two options: they can be all black or all white. Examples of line art are UPC bar codes or pen-and-ink drawings.

Screen Ruling

The ad that you will be building in this project is intended to be placed in print magazines, so you have to build the new file with the appropriate settings for commercial printing. When reproducing a photograph on a printing press, the image must be converted into a set of printable dots that fool the eye into believing it sees continuous tones. Prior to image-editing software, pictures that were being prepared for printing on a press were photographed through a screen to create a grid of halftone dots. The result of this conversion is a halftone image; the dots used to simulate continuous tone are called **halftone dots**. Light tones in a photograph are represented as small halftone dots; dark tones become large halftone dots.

The screens used to create the halftone images had a finite number of available dots in a horizontal or vertical inch. That number was the **screen ruling**, or **lines per inch (lpi)** of the halftone. A screen ruling of 133 lpi means that in a square inch there are 133 × 133 (17,689) possible locations for a halftone dot. If the screen ruling is decreased, there are fewer total halftone dots, producing a grainier image; if the screen ruling is increased, there are more halftone dots, producing a clearer image.
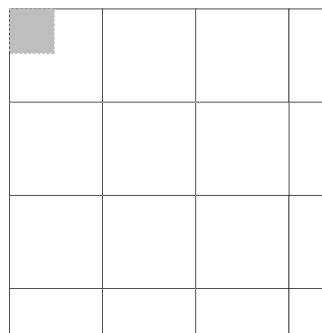
Line screen is a finite number based on a combination of the intended output device and paper. You can't randomly select a line screen. Ask your printer what line screen will be used before you begin creating your images.
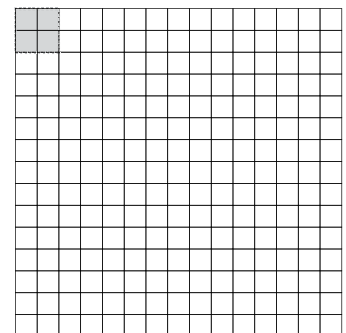
72 ppi   300 ppi

Each white square represents a pixel. The highlighted area shows the pixel information used to generate a halftone dot. If an image only has 72 pixels per inch, the output device has to generate four halftone dots per pixel, resulting in poor printed quality.

If you can't find out ahead of time, or if you're unsure, follow these general guidelines:

- Newspaper or newsprint: 85–100 lpi

- Magazine or general commercial printing: 133–150 lpi

- Premium-quality-paper jobs (such as art books or annual reports): 150–175 lpi; some specialty jobs might use 200 lpi or more

Image Resolution

When a printer creates halftone dots, it calculates the average value of a group of pixels in the raster image and generates a spot of appropriate size. A raster image's resolution — measured in **pixels per inch (ppi)** — determines the quantity of pixel data the printer can read. Regardless of their source — camera, scanner, or files created in Photoshop — images need to have sufficient resolution so the output device can generate enough halftone dots to create the appearance of continuous tone. In the images to the right, the same raster image is reproduced at 300 ppi (top) and 72 ppi (bottom); notice the obvious degradation in quality in the 72-ppi version.

Ideally, the printer will have four pixels for each halftone dot created. The relationship between pixels and halftone dots defines the rule of resolution for raster-based images — the resolution of a raster image (ppi) should be two times the screen ruling (lpi) that will be used for printing.

For line art, the general rule is to scan the image at the same resolution as the output device. Many laser printers and digital presses image at 600–1200 dots per inch (dpi); imagesetters used to make printing plates for a commercial press typically output at much higher resolution, possibly 2400 dpi or more.

OPEN AND RESIZE AN IMAGE

Every raster image has a defined, specific resolution that is established when the image is created. If you scan an image to be 3″ high by 3″ wide at 150 ppi, that image has 450 pixels in each vertical column and 450 pixels in each horizontal row. Simply resizing the image stretches or compresses those pixels into a different physical space, but does not add or remove pixel information. If you resize the 3 × 3″ image to 6 × 6″ (200% of the original), the 450 pixels in each column or row are forced to extend across 6″ instead of 3″, causing a marked loss of quality.

The **effective resolution** of an image is the resolution calculated after any scaling is taken into account. This number is equally important as the original image resolution — and perhaps more so. The effective resolution can be calculated with a fairly simple equation:

Original resolution ÷ (% magnification ÷ 100) = Effective resolution

If a 300-ppi image is magnified 150%, the effective resolution is:

300 ppi ÷ 1.5 = 200 ppi

In other words, the more you enlarge a raster image, the lower its effective resolution becomes. In general, you can make an image 10% or 15% larger without significant adverse effects; the more you enlarge an image, however, the worse the results. Even Photoshop, which offers very sophisticated formulas (called "algorithms") for sizing images, cannot guarantee perfect results.

Effective resolution can be a very important consideration when working with client-supplied images, especially those that come from consumer-level digital cameras. Many of those devices capture images with a specific number of pixels rather than a number of pixels per inch (ppi). In this exercise, you will explore the effective resolution of an image to see if it can be used for a full-page printed magazine ad.
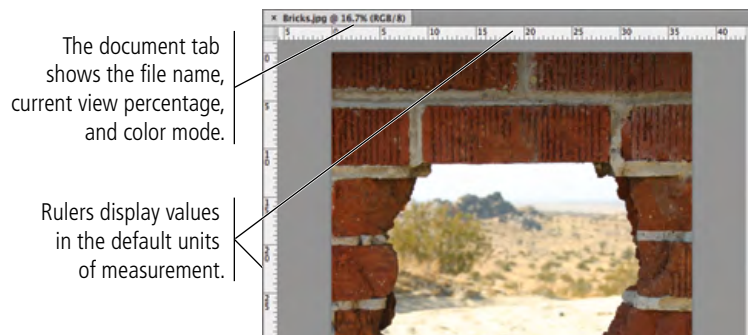
1. **Download Movie_PSCC15_RF.zip from the Student Files Web page.**

2. **Expand the ZIP archive in your WIP folder (Macintosh) or copy the archive contents into your WIP folder (Windows).**

   This results in a folder named **Movie**, which contains all of the files you need for this project. You should also use this folder to save the files you create in this project.

   If necessary, refer to Page 1 of the Interface chapter for specific information on expanding or accessing the required resource files.

3. **Choose File>Open and navigate to your WIP>Movie folder. Select Bricks.jpg and click Open.**

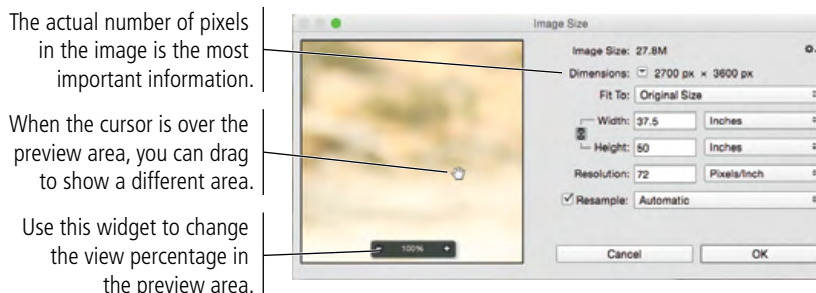4. **If the rulers are not visible on the top and left edges, choose View>Rulers.**

   As you can see in the rulers, this image has a very large physical size.

The document tab shows the file name, current view percentage, and color mode.

Rulers display values in the default units of measurement.

5. **Choose Image>Image Size.**

   The Image Size dialog box shows the number of pixels in the image, as well as the image dimensions and current resolution. You can change any value in this dialog box, but you should understand what those changes mean before you do so.

   As you can see, this image is currently 37.5 inches wide and 50 inches high, but it was photographed at 72 pixels/inch. For most commercial printing, you need at least 300 ppi. You can use the principle of effective resolution to change the file to a high enough resolution for printing.

The actual number of pixels in the image is the most important information.

When the cursor is over the preview area, you can drag to show a different area.

Use this widget to change the view percentage in the preview area.

6. **Check the Resample option at the bottom of the dialog box.**

The options in this dialog box remember the last-used choices. The Resample option might already be checked in your dialog box.

Resampling means maintaining the existing resolution in the new image dimensions; in other words, you are either adding or deleting pixels to the existing image. When this option is turned on, you can change the dimensions of an image without affecting the resolution, or you can change the resolution of an image (useful for removing excess resolution or **downsampling**) without affecting the image size.

7. **Change the Resolution field to 300 pixels/inch.**

When you change the resolution with resampling turned on, you do not change the file's physical size. To achieve 300-ppi resolution at the new size, Photoshop needs to add a huge number of pixels to the image. You can see at the top of the dialog box that this change would increase the total number of pixels from 2700 × 3600 to 11250 × 15000.
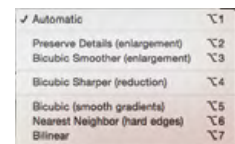
You can also see that changing the resolution of an image without affecting its physical dimensions would have a significant impact on the file size. Changing the resolution to 300 ppi at the current size would increase the file size to nearly 483 megabytes.
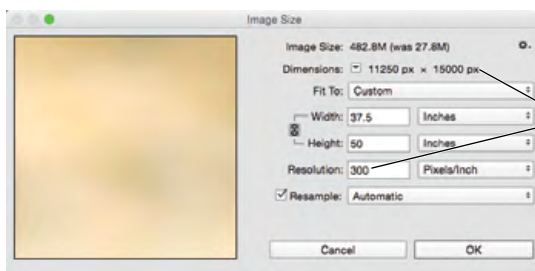
When Resample is checked, changing the Resolution value adds or removes pixels.

Higher resolution means larger file sizes, which translates to longer processing time for printing or longer download time over the Internet. When you scale an image to a smaller size, simply resizing can produce files with far greater effective resolution than you need. Resampling allows you to reduce physical size without increasing the resolution, resulting in a smaller file size.

The caveat is that once you discard (delete) pixels, they are gone. If you later try to re-enlarge the smaller image, you will not achieve the same quality as the original (before it was reduced). You should save reduced images as copies instead of overwriting the originals.

8. **Press Option/Alt and click the Reset button to restore the original image dimensions in the dialog box.**

In many Photoshop dialog boxes, pressing the Option/Alt key changes the Cancel button to Reset. You can click the Reset button to restore the original values that existed when you opened the dialog box.
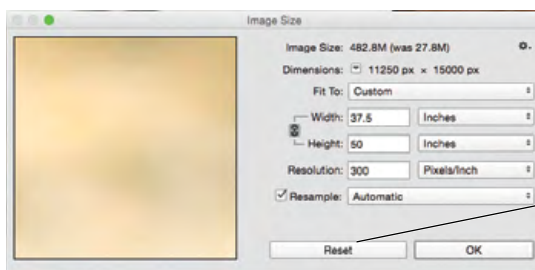

Pressing Option/Alt changes the Cancel button to Reset.

9. **Uncheck the Resample option at the bottom of the dialog box.**

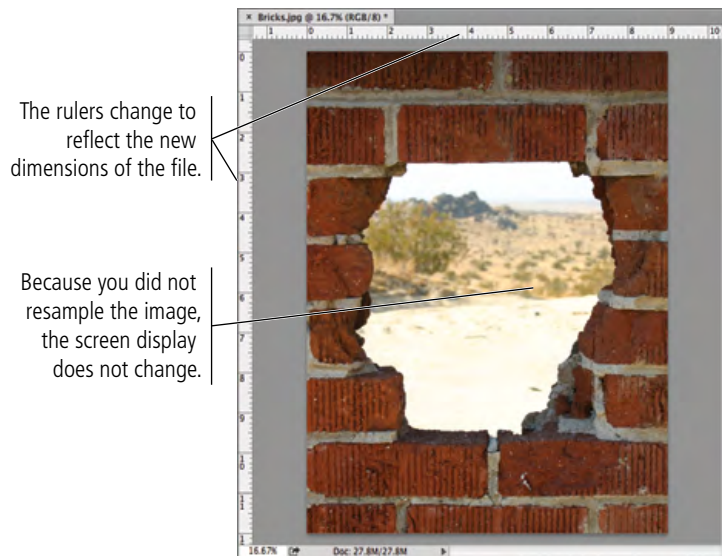10. **Change the Resolution field to `300` pixels/inch.**

Resizing *without* resampling basically means distributing the same number of pixels over a different amount of physical space. When you resize an image without resampling, you do not change the number of pixels in the image. (In fact, those fields in the dialog box become simple text; the fields are unavailable and you cannot change the number of pixels in the image.)

You can see how changing one of the linked fields (Resolution) directly affects the other linked fields (Width and Height). By resizing the image to be 300 ppi — enough for commercial print quality — you now have an image that is 9″ × 12″.
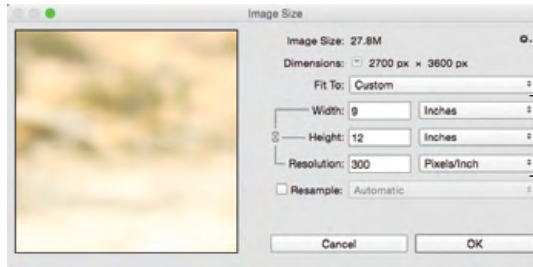
When the Resample option is unchecked, these three fields are all linked.

11. **Click OK to apply the change and return to the document window.**

The rulers change to reflect the new dimensions of the file.

Because you did not resample the image, the screen display does not change.

12. **Choose File>Save As. If necessary, navigate to your WIP>Movie folder as the target location. Change the file name (in the Save As field) to `aftermath`.**

Since this is a basic image file with only one layer (so far), most of the other options in the Save As dialog box are grayed out (not available).

13. Choose Photoshop in the Format menu and then click Save.

You can save a Photoshop file in a number of different formats, all of which have specific capabilities, limitations, and purposes. While you are still working on a file, it's best to keep it as a native Photoshop (PSD) file. When you choose a different format, the correct extension is automatically added to the file name.
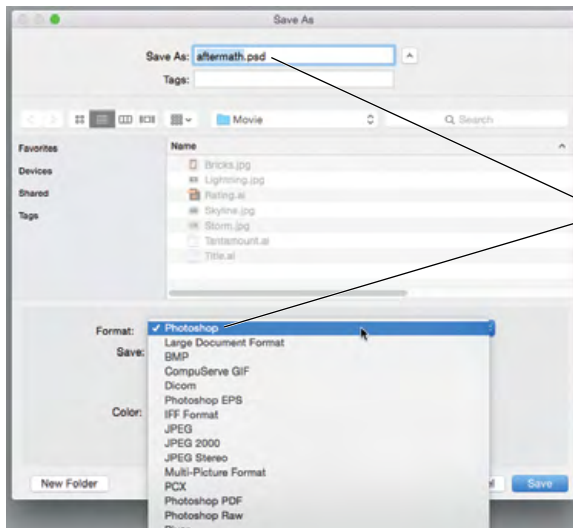
Files saved in the native Photoshop format display a ".psd" extension.

14. Continue to the next exercise.
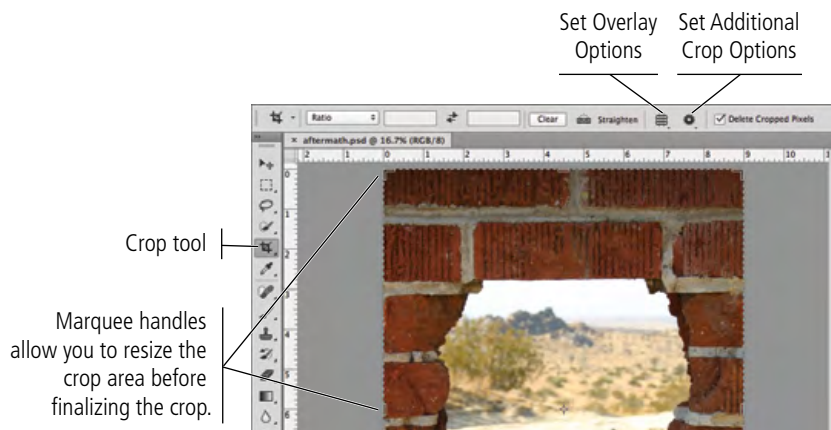
CROP THE CANVAS AND PLACE RULER GUIDES

The final step in preparing the workspace is defining the live area of the page. **Trim size** is the actual size of a page once it has been cut out of the press sheet. According to your client, the magazine has a trim size of 8.5″ × 11″.

Any elements that print right to the edge of a page (called **bleeding**) must actually extend beyond the defined trim size. The **bleed allowance** is the amount of extra space that should be included for these bleed objects; most applications require at least 1/8″ bleed allowance on any bleed edge.

Because of inherent variation in the mechanical printing and trimming processes, most magazines also define a safe or **live area**; all important design elements (especially text) should stay within this live area. The live area for this project is 8 × 10.5″.

Note:

You should familiarize yourself with the most common fraction-to-decimal equivalents:

1/8 = 0.125

1/4 = 0.25

3/8 = 0.375

1/2 = 0.5

5/8 = 0.625

3/4 = 0.75

7/8 = 0.875

1. With aftermath.psd open, choose the Crop tool in the Tools panel.

When you choose the Crop tool, a crop marquee appears around the edges of the image. The marquee has eight handles, which you can drag to change the size of the crop area.

Set Overlay Options   Set Additional Crop Options

Crop tool

Marquee handles allow you to resize the crop area before finalizing the crop.

Understanding File Saving Preferences

You can control a number of options related to saving files in the File Handling pane of the Preferences dialog box.

Image Previews.
You can use this menu to always or never include image thumbnails in the saved file. If you choose Ask When Saving in this menu, the Save As dialog box includes an option to include the image preview/thumbnail.

Macintosh

Windows
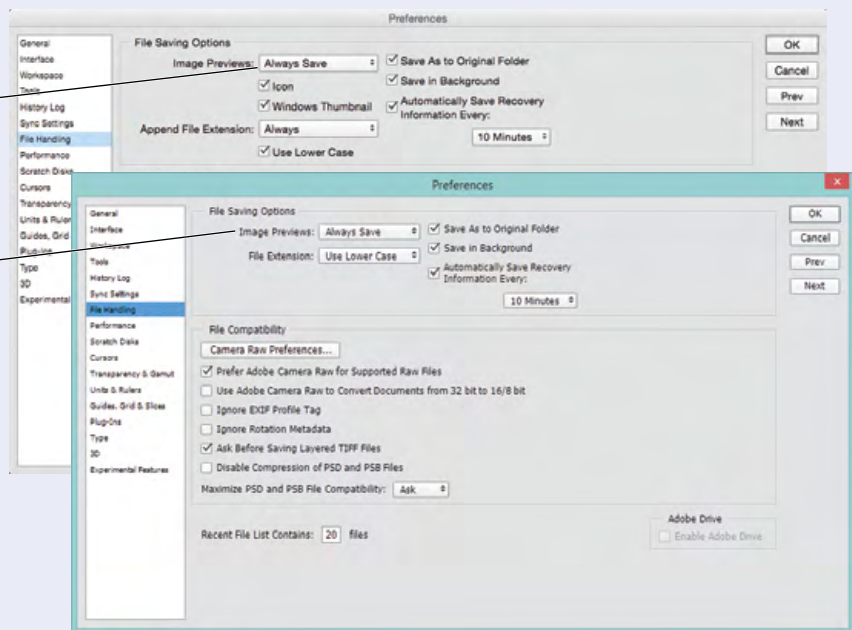
On Macintosh, you have two additional options: Icon and Windows Thumbnail. You can check the Icon option to show the image thumbnail in the Open dialog box and Finder (instead of the default Photoshop file icon). Although Macintosh can almost always read Windows information, Windows sometimes has trouble with certain Macintosh data — specifically, file thumbnails; you can check the Windows Thumbnail option to include a thumbnail that will be visible in the Windows Open dialog box.

Append File Extension. On Macintosh, you can use this menu to always or never include the file extension in the saved file. If the Ask When Saving option is selected in this menu, the Save As dialog box includes options to append the file extension (in lower case or not). On Windows, file extensions are always added to saved files; this preference menu has only two options: Use Upper Case and Use Lower Case.

If Ask When Saving is selected in the File Handling preferences, the Save As dialog box presents options to include Image Previews and File Extension.
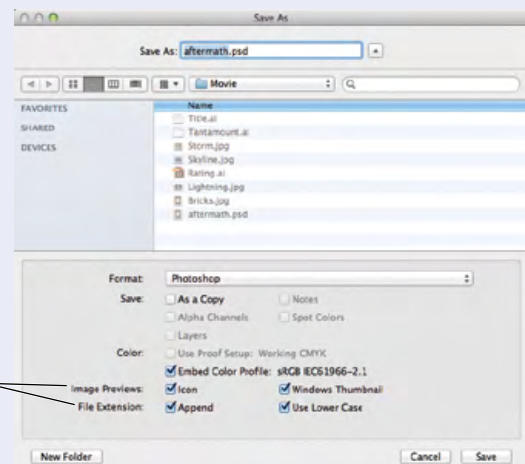
Save As to Original Folder. When this option is checked, choosing File>Save As automatically defaults to the location where the original file is located.

Save in Background. The Save process occurs by default in the background — in other words, you can continue working even while a file is being saved. In versions prior to CS6, you could not interact with the application while a file was being saved. Especially when you work with large files, this can be a significant time saver because you don't have to sit and wait the several minutes it might take to save a very large file. (The only thing you can't do while a file is being saved is use the Save As command; if you try, you will see a warning advising you to wait until the background save is complete.)

When a file is being saved in the background, the completed percentage appears in the document tab.
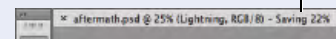
Automatically Save Recovery Information Every... When checked, this option means that your work is saved in a temporary file, every 10 minutes by default; if something happens — a power outage, for example — you will be able to restore your work back to the last auto-saved version. In other words, the most you will lose is 10 minutes' work!

2. **In the Options bar, make sure the Delete Cropped Pixels option is checked.**

When this option is checked, areas outside the cropped areas are permanently removed from all layers in the file. If this option is not checked, cropped pixels remain in the file, but exist outside the edges of the file canvas. The Background layer, if one exists, is converted to a regular layer (you'll learn more about Background layers later in this project).

This is an important distinction — by maintaining cropped pixels, you can later transform or reposition layers to reveal different parts of the layer within the newly cropped canvas size.

3. **Click the right-center handle of the crop marquee and drag left until the cursor feedback shows W: 8.750 in.**

When you drag certain elements in the document window, live cursor feedback (also called "heads-up display") shows information about the transformation. When dragging a side crop marquee handle, for example, the feedback shows the new width of the area.

You might need to zoom into at least 66.7% or 100% view percentage to achieve the exact dimensions needed for this project.
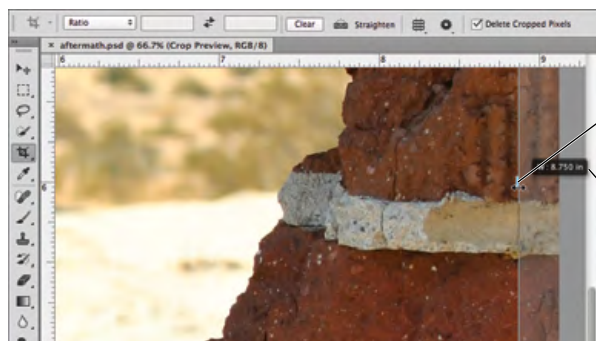
Click and drag the marquee handle to resize the marquee area.

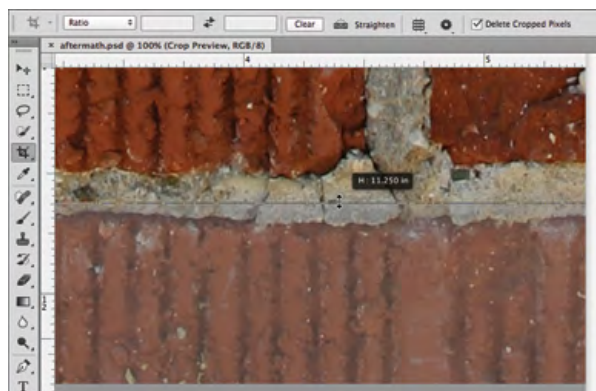Use the cursor feedback to find the appropriate measurement.

4. **Repeat Step 3 with the bottom-center handle until feedback shows the area of H: 11.250 in.**

Remember, the defined trim size for this ad is 8.5″ × 11″. Anything that runs to the page edge has to incorporate a 0.125″ bleed allowance, so the actual canvas size must be large enough to accommodate the bleed allowance on all edges:

[Width]   8.5″ + 0.125″ + 0.125″ = 8.75

[Height]   11″ + 0.125″ + 0.125″ = 11.25

5. **Click inside the crop area and drag to reposition the image so that it is approximately centered in the crop area.**

When you change the size of the marquee, the area outside the marquee is "shielded" by a darkened overlay so you can get an idea of what will remain after you finalize the crop.

You can drag the image inside the crop area to change the portion that will remain in the cropped image. By default, the crop area remains centered in the document window; instead, the image moves behind the crop area.
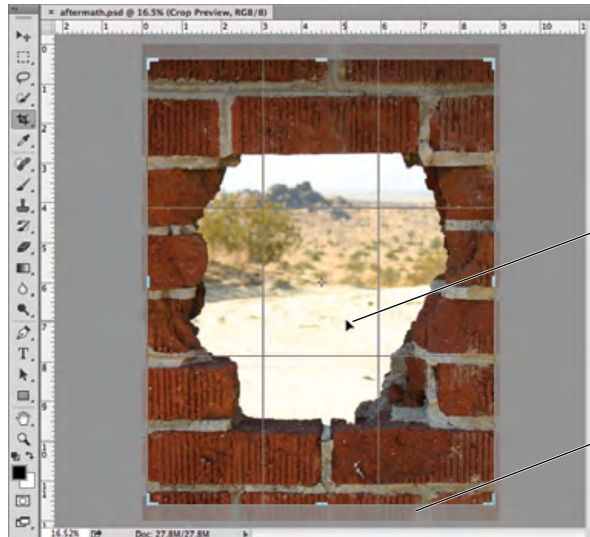
Click and drag inside the crop area to change the portion of the image inside the crop.

Areas outside the crop marquee are partially obscured.

6. **Press Return/Enter to finalize the crop.**

7. **Choose View>New Guide Layout.**

This dialog box makes it very easy to define a page grid using non-printing guides. The dialog box defaults to add 8 columns with a 20-pixel (0.067 in) gutter. In the document window, you can see the guides (blue lines) that will be created based on the active settings in the New Guide Layout dialog box.
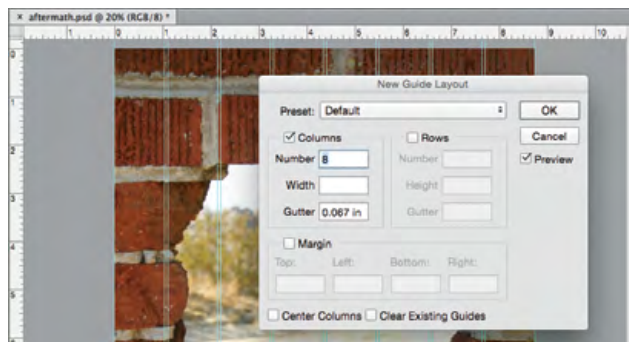
8. **Uncheck the Columns option and check the Margin option. Type `0.125` in each of the available margin fields.**

   You can use the Margin fields to place guides at specific distances from each edge of the canvas. You don't need to type the unit of measurement because the default unit for this file is already inches. Photoshop automatically assumes the value you type is in the default unit of measurement.
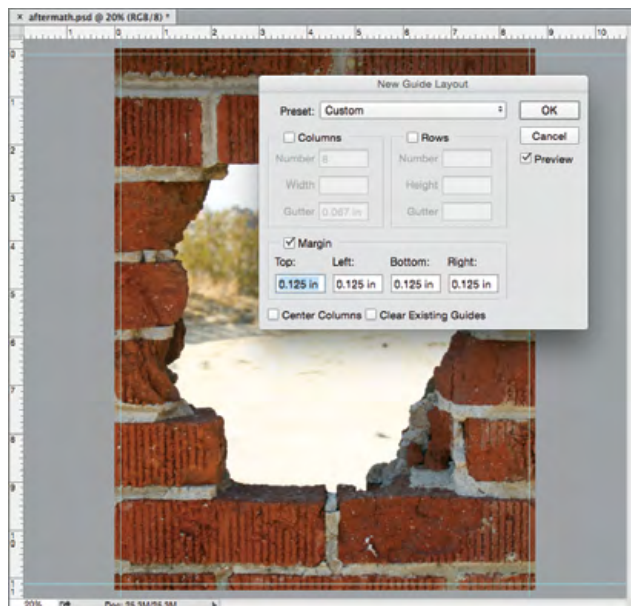
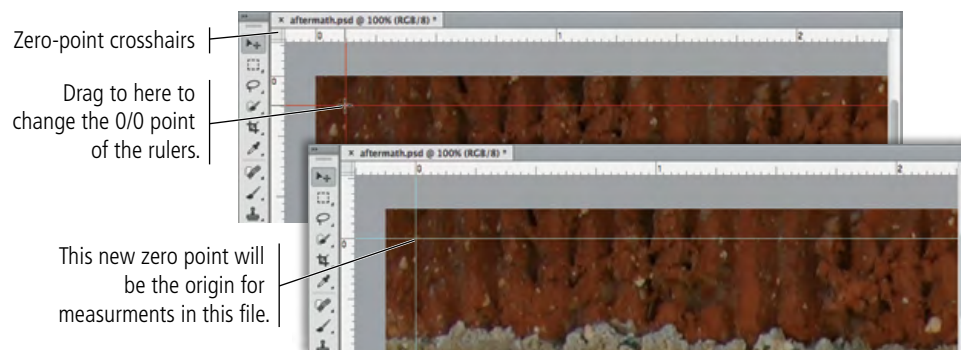9. **Click OK to return to the document and add the required margin guides.**

   At this point you should have four guides – two vertical and two horizontal, each 1/8″ from the file edges. These mark the trim size of your final 8.5 × 11″ file.

10. **Choose View>100%.**

    It helps to zoom in to a higher view percentage if you want to precisely place guides. To complete the following steps accurately, we found it necessary to use at least 100% view.

11. **In the top-left corner of the document window, click the zero-point crosshairs and drag to the top-left intersection of the guides.**

    You can reposition the zero point to the top-left corner of the bleed allowance by double-clicking the zero-point crosshairs.

Zero-point crosshairs

Drag to here to change the 0/0 point of the rulers.

This new zero point will be the origin for measurments in this file.

12. **Choose the Move tool, and then open the Info panel (Window>Info).**

As we explained in the Interface chapter, the panels you see depend on what was done the last time you (or someone else) used the Photoshop application. Because workspace arrangement is such a personal preference, we tell you what panels you need to use, but we don't tell you where to put them.

For this file, the live area (the area in which important objects should be placed) should be 0.25″ inset from the trim edge. This is how we determined that number:
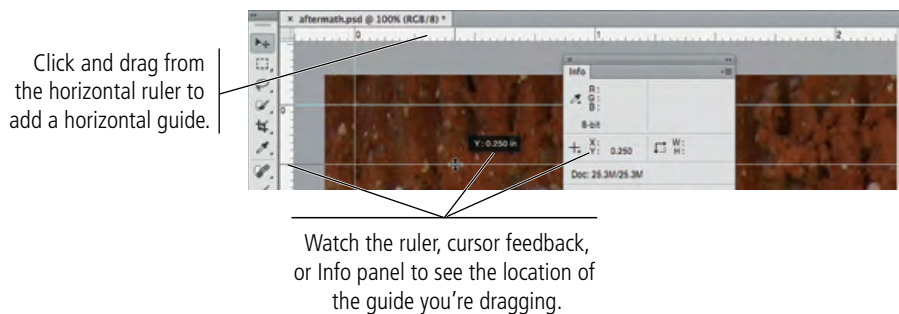
[Width] $8.5″ − 8.0″ = 0.5 ÷ 2 = 0.25″$

[Height] $11″ − 10.5″ = 0.5″ ÷ 2 = 0.25″$

In the next few steps you will add guides that identify the live area.

13. **Click the horizontal page ruler at the top of the page and drag down to create a guide positioned at the 1/4″ (0.25″) mark.**

If you watch the vertical ruler, you can see a marker indicating the position of the cursor. In addition to the live cursor feedback, the Info panel also shows the precise numeric position of the guide you are dragging.

Click and drag from the horizontal ruler to add a horizontal guide.

Watch the ruler, cursor feedback, or Info panel to see the location of the guide you're dragging.

14. **Click the vertical ruler at the left and drag right to place a guide at the 0.25″ mark.**

Watch the marker on the horizontal ruler to judge the guide's position.
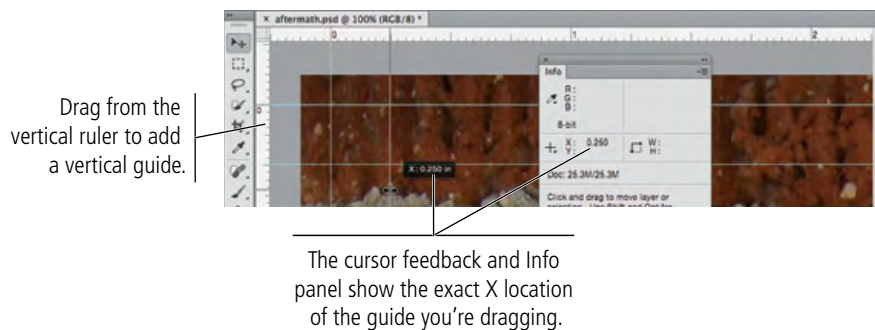
Drag from the vertical ruler to add a vertical guide.

The cursor feedback and Info panel show the exact X location of the guide you're dragging.

15. **Double-click the intersection of the two rulers.**

This resets the file's zero point to the original position (the top-left corner of the canvas).

Double-click the ruler intersection to reset the original zero point.
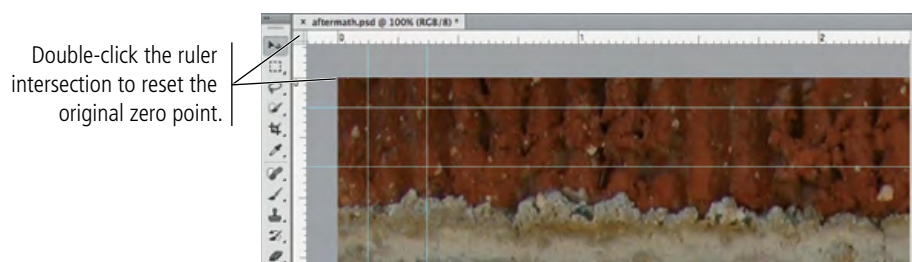
16. **Zoom out so you can see the entire canvas in the document window (View>Fit On Screen).**

17. **Choose View>New Guide. In the resulting dialog box, choose the Horizontal option and type 10.875 in the field and click OK.**

    This dialog box always measures the position of guides from the canvas's top-left corner, regardless of the zero point as reflected in the rulers.
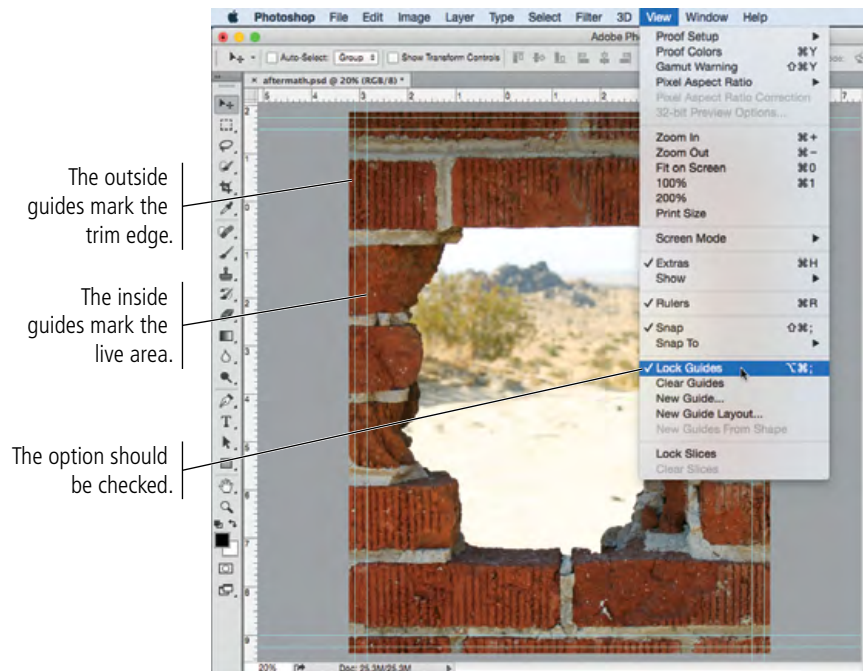

18. **Choose View>New Guide again. Choose the Vertical option and type 8.375 in the field. Click OK.**
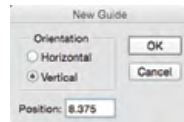
19. **Click the View menu and make sure a checkmark appears to the left of Lock Guides. If no checkmark is there, choose Lock Guides to toggle on that option.**

    After you carefully position specific guides, it's a good idea to lock them so you don't accidentally move or delete them later. If you need to move a guide at any point, simply choose View>Lock Guides to toggle off the option temporarily.

    The outside guides mark the trim edge.

    The inside guides mark the live area.

    The option should be checked.

20. **Save the file and continue to the next exercise.**

    Because you have already saved this working file with a new name, you can simply choose File>Save, or press Command/Control-S to save without opening a dialog box. If you want to change the file name, you can always choose File>Save As.

The Crop Tools in Depth

When the Crop tool is selected, the Options bar can be used to define a number of settings related to the cropped area.

The left menu includes a number of common aspect ratios as presets. If you choose one of these options, the crop marquee is constrained to the aspect ratio defined in the preset. It's important to note that these presets do not define the actual size of the resulting crop, only the aspect ratio.
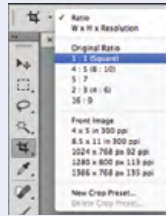
You can also choose the **W x H x Resolution** option to define custom settings for the result of a crop. For example, if you define the width and height of a crop area as 9″ × 9″ at 300 ppi, when you click and drag to draw, the crop area will be restricted to the same proportions defined in the Width and Height fields (in this example, 1:1).

When you finalize the crop, the resulting image will be resized to be 9″ × 9″, regardless of the actual size of the crop marquee. This presents a problem if you remember the principles of resolution.

Enlarging a 3″ × 3″ area (for example) to 9″ × 9″ means the application needs to create enough pixels to fill in the 6 extra inches — at 300 ppi, Photoshop needs to create ("interpolate") more than 1800 pixels per linear inch. Although Photoshop can slightly enlarge images with reasonable success, such a significant amount of new data will not result in good quality. As a general rule, you should avoid enlarging raster images, and certainly no more than about 10%.
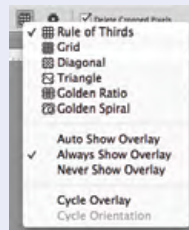
The crop area is constrained to the aspect ratio of the defined width and height.
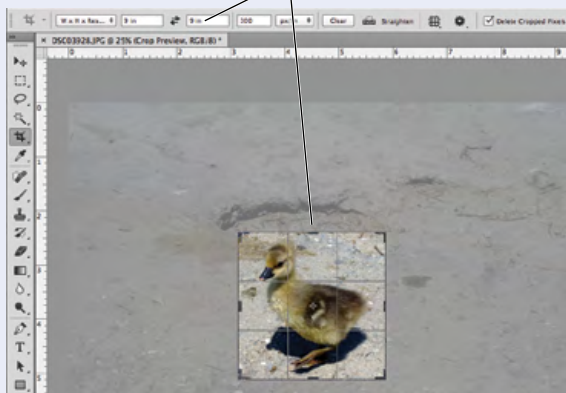
The resulting cropped image is the actual size defined in the Crop Image Size & Resolution dialog box.
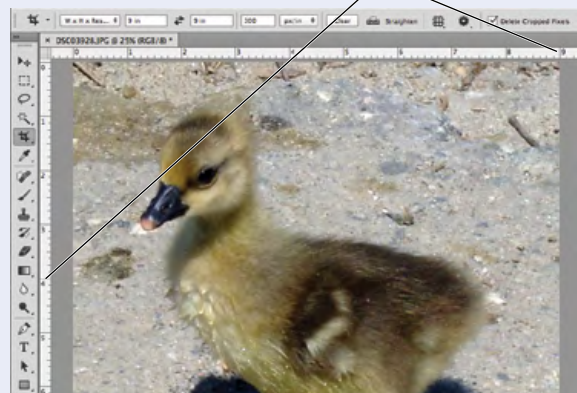

You can use the **Set Overlay Options** menu to show a variety of overlays within the crop area; these follow basic design principles, such as the Rule of Thirds and the Golden Spiral.

You can also use the commands in this menu to turn the overlay on or off. If you choose Auto Show Overlay, the selected overlay only appears when you drag the marquee handles or click inside the marquee area to move the image inside the crop area.

You can also click the **Set Additional Crop Options** button to access a variety of crop-related choices.
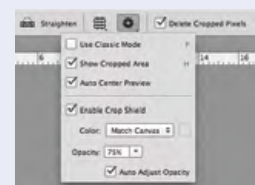
- If you check the **Use Classic Mode** option, the crop marquee reverts to the same appearance and behavior as in previous versions of Photoshop.

- When **Show Cropped Area** is checked, the area outside the crop marquee remains visible in the document window until you finalize the crop.

- When **Auto Center Preview** is checked, the crop area will always be centered in the document window; the image dynamically moves in the document window as you resize the crop area.

- When **Enable Crop Shield** is checked, areas outside the crop marquee are partially obscured by a semi-transparent solid color. You can use the related options to change the color and opacity of the shielded area.

The Crop Tools in Depth (continued)

When the Crop tool is selected, you can click the **Straighten** button in the Options bar and then draw a line in the image to define what should be a straight line in the resulting image. The image behind the crop marquee rotates to show what will remain in the cropped canvas; the line you drew is adjusted to be perfectly horizontal or vertical.

Click the Straighten button, then draw a line representing what you want to be "straight" in the cropped image.
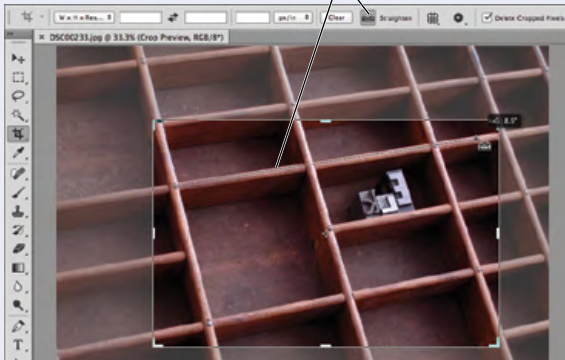
The image is rotated behind the crop marquee to be "straight" based on the line you drew.
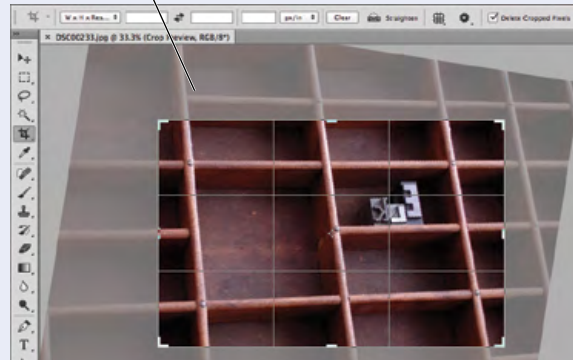
The **Perspective Crop tool** (nested under the Crop tool) can be used to draw a non-rectangular crop area. To define the area you want to keep, simply click to place the four corners of the area, then drag the corners in any direction as necessary. When you finalize the crop, the image inside the crop area is straightened to a front-on viewing angle. You should use this option with care, however, because it can badly distort an image.

In this first example, we used the actual lines in the photograph to draw the perspective crop marquee. After finalizing the crop, the type case appears to be perfectly straight rather than the original viewing angle at which it was photographed.
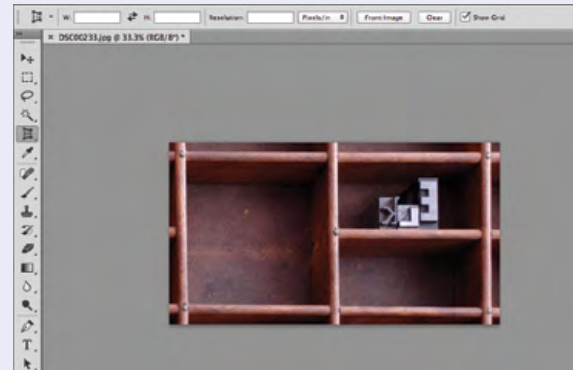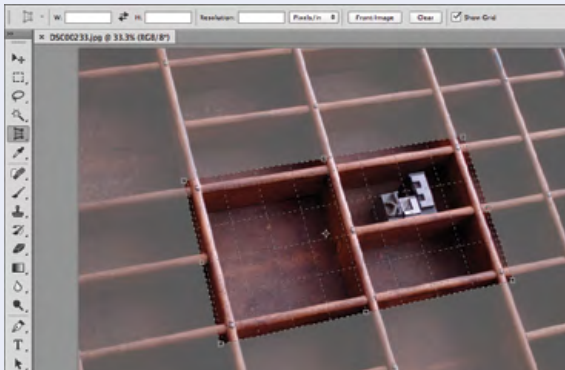
In this second example, we used the Perspective Crop tool to try to adjust the photograph of an historic hop kiln. You can see the obvious distortion in the resulting image.

DRAG A FILE TO COMPOSITE IMAGES

Compositing multiple images in Photoshop is a fairly simple process — or at least, it starts out that way. There are, of course, a number of technical and aesthetic issues that you must resolve when you combine multiple images in a single design.

1. **With aftermath.psd open, open the file Storm.jpg from your WIP>Movie folder.**

2. **With Storm.jpg the active file in the document window, open the Image Size dialog box (Image>Image Size).**

   Remember: You can press Command-Option-I/Control-Alt-I, to open the dialog box.

   This image is only 180 ppi, but it has a physical size much larger than the defined ad size. As with the original bricks image, the principle of effective resolution might make this image usable in the composite ad.
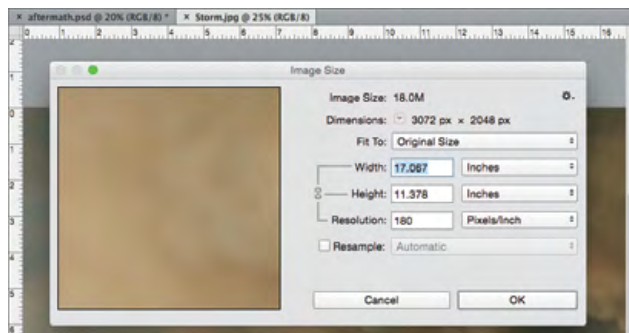
3. **Click Cancel to close the Image Size dialog box.**

4. **Open the Window>Arrange menu and choose 2-up Vertical to show both open files at one time.**

   As you saw in the Interface chapter, these options are useful for arranging and viewing multiple open files within your workspace.

5. **Choose the Move tool in the Tools panel.**

6. **Click in the Storm.jpg image window and drag into the aftermath.psd image window, then release the mouse button.**

   Basic compositing can be as simple as dragging a selection from one file to another. If no active selection appears in the source document, this action moves the entire active layer from the source document.

Move tool
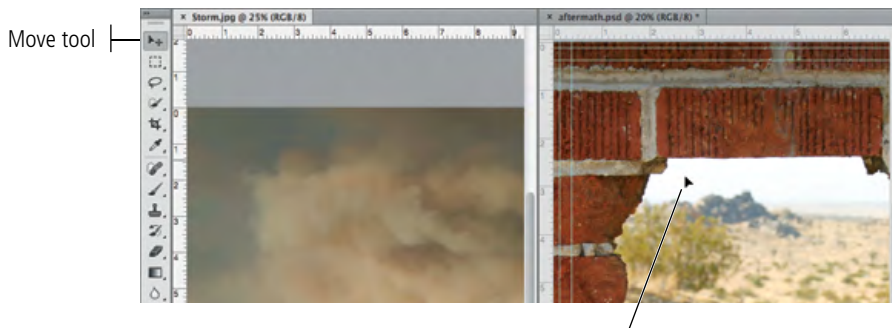
This cursor shows that you are dragging a layer. In this case, you're dragging it into another document window.

7. **Click the Close button on the Storm.jpg document tab to close that file.**

   After closing the storm file, the aftermath.psd document window expands to fill the available space.

   If you remember from the Image Size dialog box, the storm image was 17.1″ × 11.4″ at 180 ppi. Photoshop cannot maintain multiple resolutions in a single file. When you move the image content into the aftermath file, it adopts the resolution of the target file (in this case, 300 ppi). The concept of effective resolution transforms the storm image/layer to approximately 10.25″ × 6.825″ at 300 ppi.

8. **Open the Layers panel (Window>Layers).**

   The original aftermath.psd file had only one layer — Background. Before editing, every scan and digital photograph has this characteristic. When you copy or drag content from one file into another, it is automatically placed on a new layer with the default name "Layer *n*", where "n" is a sequential number.

   When a file contains more than one layer, the document tab shows the name of the active layer.
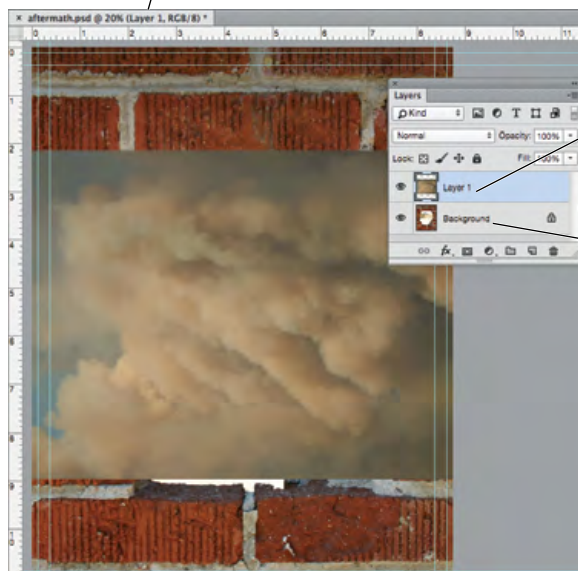
   A new layer (Layer 1) is added to contain the contents that you dragged from the storm.jpg file.

   The Background layer contains the original bricks file content.

9. **Choose File>Save, and read the resulting message.**

   Because this is the first time you have saved the file after adding new layers, you should see the Photoshop Format Options dialog box with the Maximize Compatibility check box already activated. It's a good idea to leave this check box selected so that your files will be compatible with other Adobe applications and other versions of Photoshop.

10. **Make sure the Maximize Compatibility check box is selected and click OK.**

11. **Continue to the next exercise.**

✍ Copy and Paste Selected Pixels

In the previous exercise, you used the Move tool to drag an entire layer. You can also use a variety of selection tools to choose only certain areas of a layer that will be moved. In this exercise, you will use the most basic selection tool — the Rectangle Marquee tool.

1. **With `aftermath.psd` open, choose View>Fit on Screen to show the entire image centered in the document window.**

2. **Open the file `Skyline.jpg` from your WIP>Movie folder.**

3. **Choose the Rectangular Marquee tool in the Tools panel and review the options in the Options bar.**

    By default, dragging with a marquee tool creates a new selection. You can use the buttons on the left end of the Options bar to add to the current selection, subtract from the current selection, or intersect with the current selection.
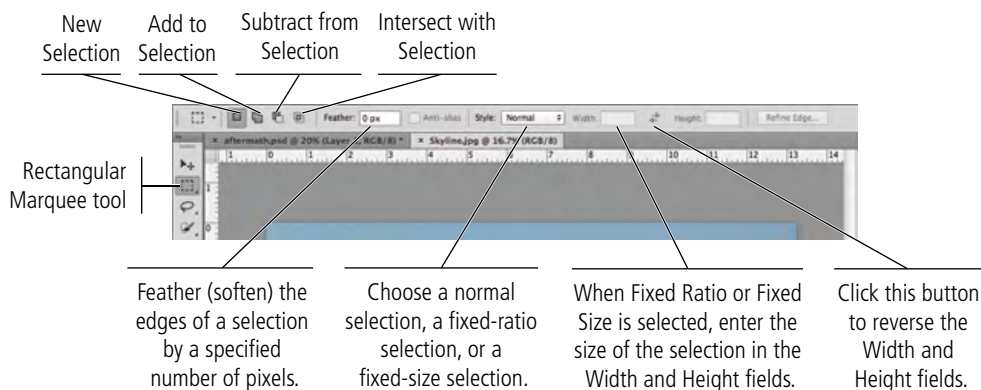
4. **Choose the New Selection option in the Options bar. Click outside of the top-left corner, drag down past the bottom edge of the image, and drag right to create a selection area that is approximately 8.5″ wide.**

    You can't select an area larger than the current canvas, so the top, left, and bottom edges of the selection snap to the canvas edges. The live cursor feedback, as well as the mark on the horizontal ruler, help to determine the selection area's width.
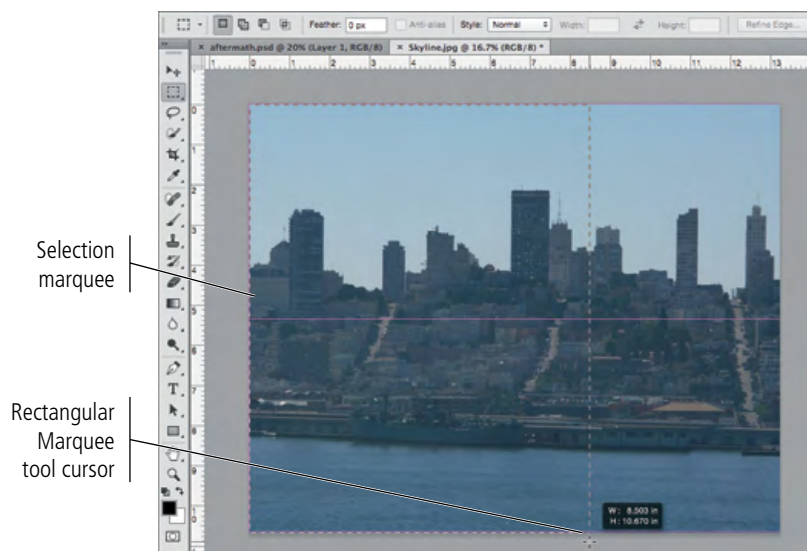
Note:

The edges of this image will be hidden by the bricks, so you don't need the full 8.75″ width of the overall ad.

Note:

Press Shift while dragging a new marquee to constrain the selection to a square (using the Rectangular Marquee tool) or circle (using the Elliptical Marquee tool).

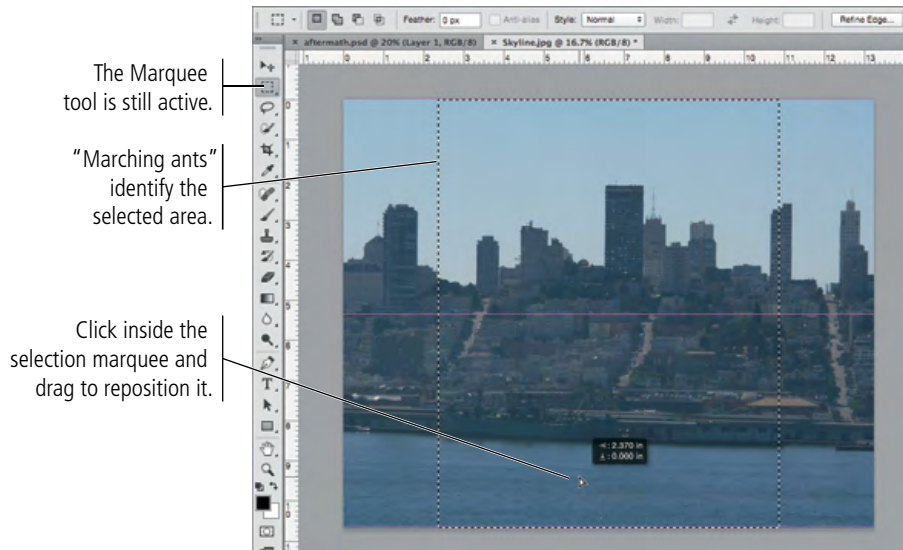5. **Click inside the selection marquee and drag it to the approximate center of the image.**

   You can move a selection marquee by clicking inside the selected area with the Marquee tool and dragging to the desired area of the image.

   The live cursor feedback shows how far you have moved the area. The pink horizontal lines that appear as you drag are smart guides, which help you to reposition objects (including selection marquees) relative to other objects or to the canvas.

The Marquee tool is still active.

"Marching ants" identify the selected area.

Click inside the selection marquee and drag to reposition it.

6. **In the Options bar, choose the Subtract from Selection option.**

7. **Click near the waterline at the left edge of the existing selection, drag down past the bottom edge of the image, and right past the right edge of the existing selection.**
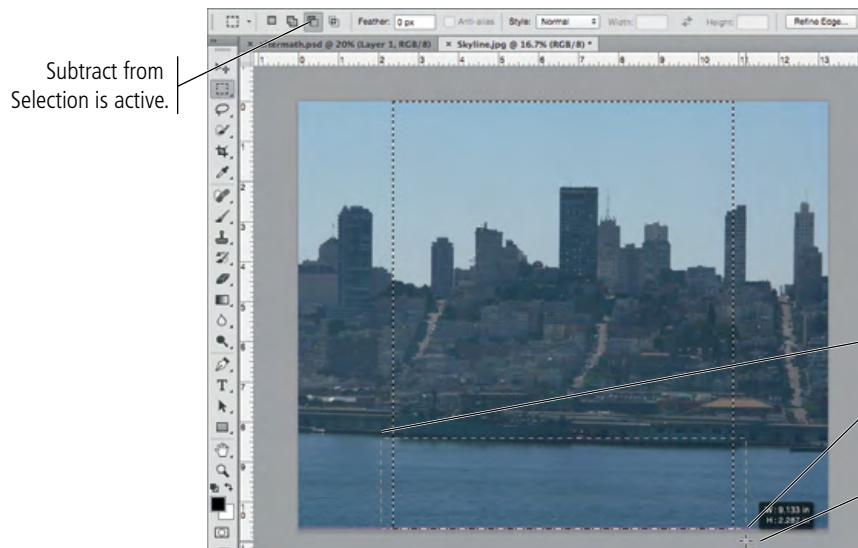
Subtract from Selection is active.

Click here...

...and drag to here.

The cursor shows a minus sign because you are subtracting from the existing selection.

You only want the city to appear in the ad, so you don't need the water area of this image. When you release the mouse button, the selection is the area of the first marquee, minus the area of the second marquee. (This two-step process isn't particularly necessary in this case, but you should know how to add to and subtract from selections.)

8. **Choose Edit>Copy.**

   The standard Cut, Copy, and Paste options are available in Photoshop, just as they are in most applications. Whatever you have selected will be copied to the Clipboard, and whatever is in the Clipboard will be pasted.
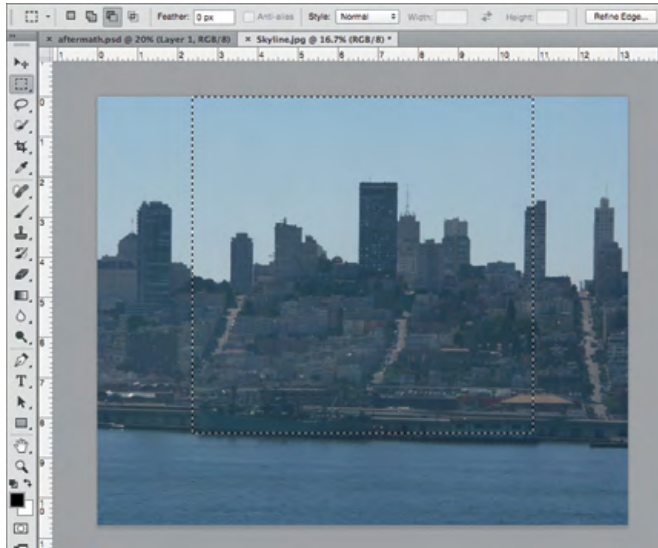
9. **Click the Close button on the Skyline.jpg document tab to close the file. When asked, click Don't Save.**

10. **With the aftermath.psd file active, choose Edit>Paste.**

    The copied selection is pasted in the center of the document window. Because you used the Fit on Screen option at the beginning of this exercise, the pasted image is centered in the document. Another new layer is automatically created to store the pasted content.
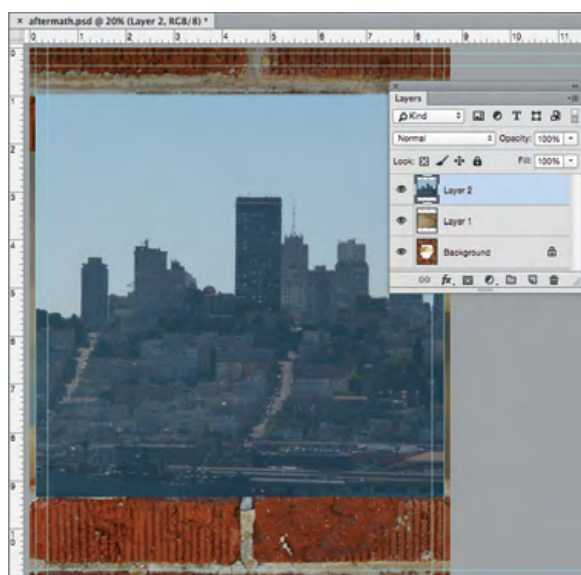
11. **Save the file and continue to the next exercise.**

Understanding Smart Guides

As you dragged the selection marquee in the previous exercise, you might have noticed a series of pink lies appearing in different locations. These lines are a function of Smart Guides, which make it easier to align layer content to other layers or to the overall canvas.

Smart Guides are active by default, but you can toggle them on and off in the View>Show submenu.
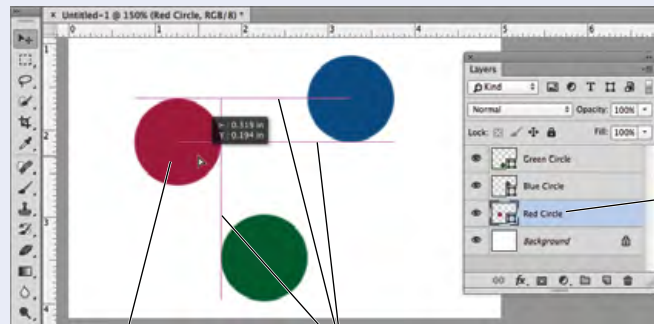
The Red Circle layer is selected.

We dragged the Red Circle layer with the Move tool.

Smart Guides identify the center and edges of content on other layers.
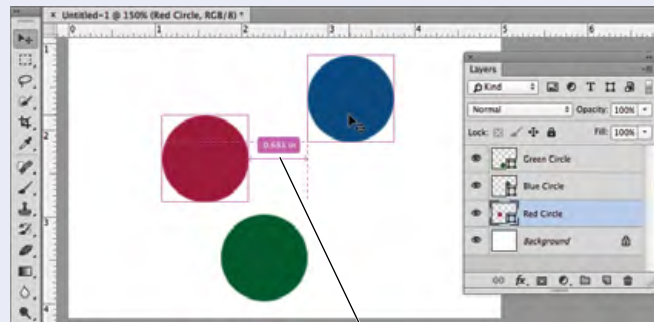
Press Command/Control and hover over an object to find the distance between it and the selected layer.
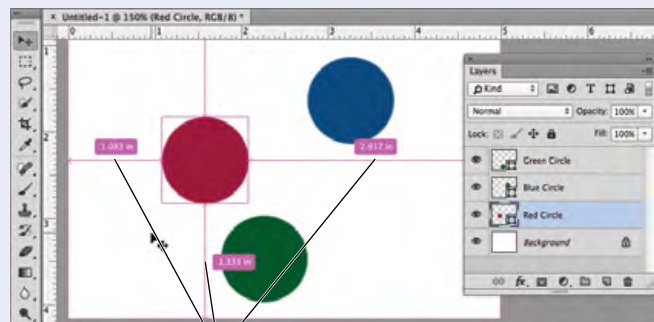
Press Command/Control and hover over the canvas find the distance between the selected layer content and the canvas edges.

RASTERIZE A VECTOR FILE

As you learned earlier, vector graphics are based on a series of mathematical descriptions that tell the computer processor where to draw lines. Logos and title treatments — such as the ones you will use in this project — are commonly created as vector graphics. Although Photoshop is typically a "paint" (pixel-based) application, you can also open and work with vector graphics created in illustration programs like Adobe Illustrator.

1. **With `aftermath.psd` open, choose File>Open and navigate to your `WIP>Movie` folder.**

2. **Select `Title.ai` in the list of files and then click Open.**

   This is an Adobe Illustrator file of the movie title text treatment. The Format menu defaults to Photoshop PDF because Illustrator uses PDF as its underlying file structure.

   When you open a vector file (Illustrator, EPS, or PDF) in Photoshop, it is rasterized (converted to a raster graphic). The Import PDF dialog box allows you to determine exactly what and how to rasterize the file. The default values in this box are defined by the contents of the file you're opening.

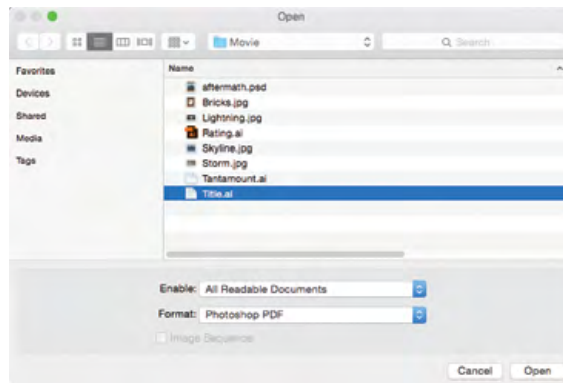   The Crop To options determine the size of the opened file. Depending on how the file was created, some of these values might be the same as others:

   - **Bounding Box** is the outermost edges of the artwork in the file.
   - **Media Box** is the size of the paper as defined in the file.
   - **Crop Box** is the size of the page including printer's marks.
   - **Bleed Box** is the trim size plus any defined bleed allowance.
   - **Trim Box** is the trim size as defined in the file.
   - **Art Box** is the area of the page as defined in the file.

3. **Highlight the Width field and type `8`, and make sure the Resolution field is set to `300` pixels/inch.**

   The Image Size fields default to the settings of the bounding box you select. You can change the size, resolution, color mode, and bit depth by entering new values.

   You know the live area of the ad you're building is 8″ wide, so you can import this file at a size small enough to fit into that space. Because the Constrain Proportions option is checked by default, the height changes proportionally to match the new width.
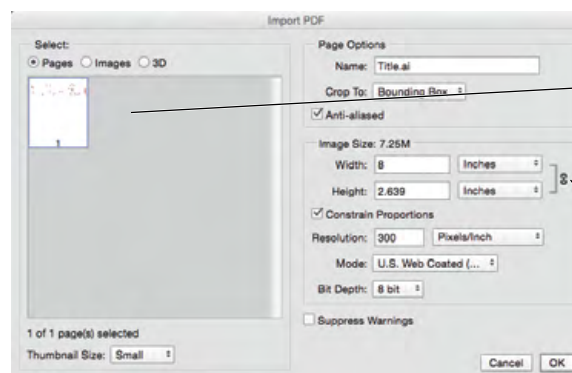
   If you're opening a multi-page PDF or an Illustrator file with more than one artboard, this window shows previews of each "page" in the file.

   When this chain icon appears, the width and height are constrained.

4. **Click OK.**

The title treatment file opens in Photoshop. The checkered area behind the text indicates that the background is transparent. If you look at the Layers panel, you will see that Layer 1 isn't locked; because it's transparent, it is not considered a background layer.

5. **Choose Select>All.**

This command creates a marquee for the entire canvas.

The gray-and-white checked pattern identifies areas of transparency in the layer content.

Using the Select>All command surrounds the entire canvas in a selection marquee.
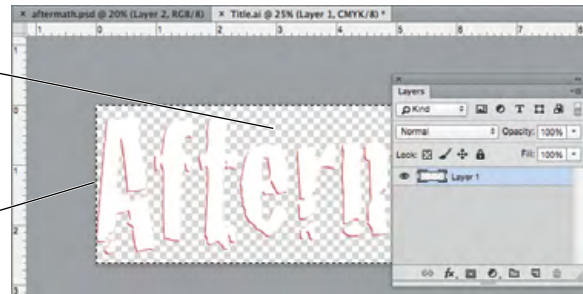
6. **Choose Edit>Copy, then click the Close button on the Title document tab to close that file. Click Don't Save if asked.**

7. **With the aftermath.psd file active, choose Edit>Paste.**
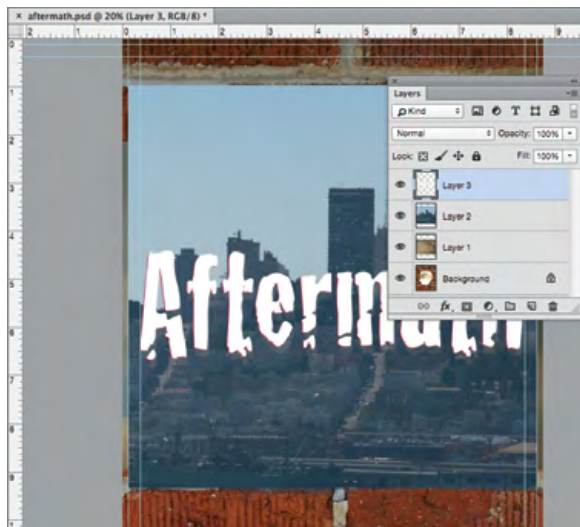
8. **Save aftermath.psd and continue to the next exercise.**

PLACE FILES AS SMART OBJECT LAYERS

As you have seen in the last few exercises, copying layer content from one file to another results in new regular layers for the pasted content. Photoshop also supports Smart Object layers, in which you place one file into another instead of pasting layer content. Smart Objects provide a number of advantages over regular layers, which you will explore later in this project. In this exercise, you will create the Smart Object layers for the remaining image elements.

1. **With `aftermath.psd` open, choose File>Place Embedded.**

Two options in the File menu — Place Embedded and Place Linked — give you have the option to embed the placed file data into active file, or to place smart objects as links to the original placed file. (See Page 49 For more about placing linked files.)

2. **Choose the Lightning.jpg file (in your WIP>Movie folder) and click Place.**

The placed file appears with bounding box handles and crossed diagonal lines. The placement isn't final until you press Return/Enter; if you press the Escape key, the file will not be placed.

In the Options bar, you can see that the placed image has been scaled to approximately 45% to fit into the document where it is being placed.

The Options bar shows that the placed image has been scaled to fit into the active canvas.

The placed image is centered in the document window.

Crossed diagonal lines and bounding box handles indicate that the placement is not yet final.
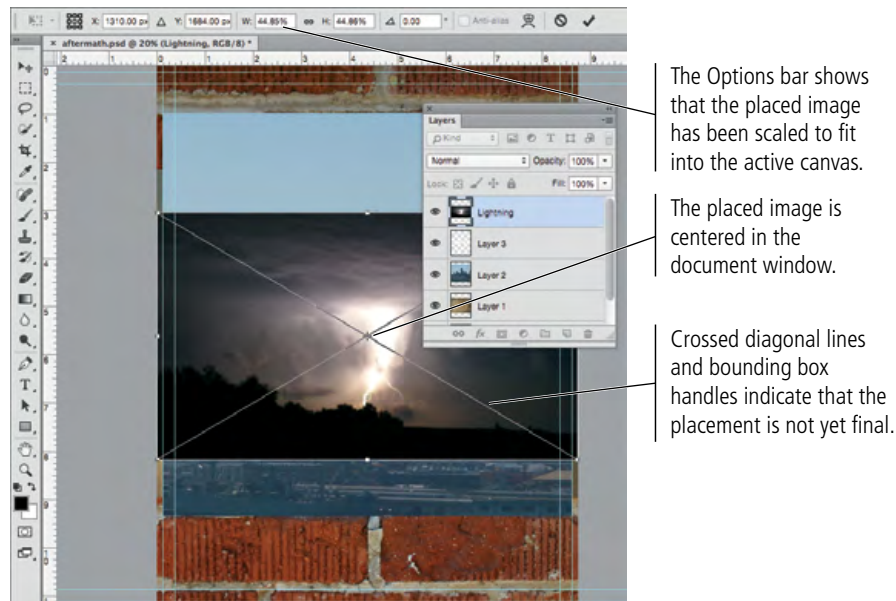
3. **Press Return/Enter to finalize the placement.**

After you finalize the placement, the bounding box handles and crossed diagonal lines disappear. In the Layers panel, the placed file has its own layer (just as the copied layers do). This layer, however, is automatically named, based on the name of the placed file.

The layer's thumbnail indicates that this layer is a **Smart Object** — it is linked to the file that you placed. Changes in the original file will also be reflected in the file where the original is placed.

The layer adopts the name of the placed file.

This icon identifies an embedded Smart Object layer.
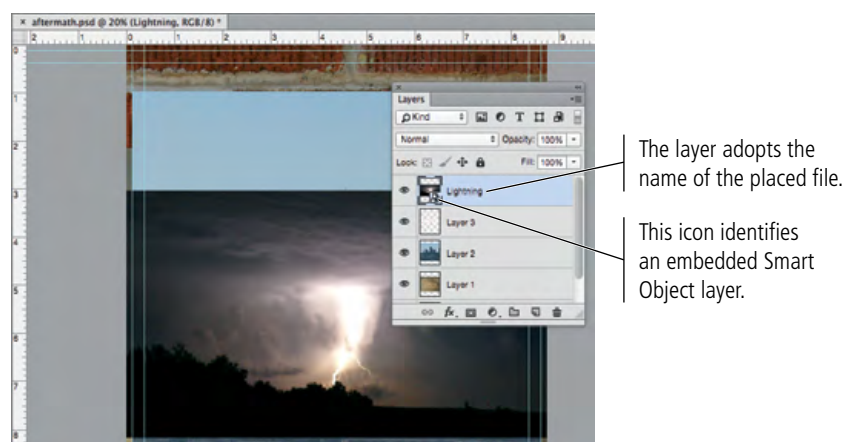
4. **Choose File>Place Embedded again. Select Rating.ai and click Place.**

Vector graphics offer several advantages over raster images, including sharper edges and free scaling without deteriorating image quality. To take advantage of these benefits, you might want to maintain vector files as vector objects instead of rasterizing them. Photoshop gives you the option to do exactly that — maintaining vector information and raster information in the same file.

5. **In the resulting dialog box, choose Bounding Box in the Crop To menu, then click OK.**

Because this is a native Illustrator file (identified by the ".ai" extension), you have the same Crop To options as when you actually open an Illustrator file in Photoshop.
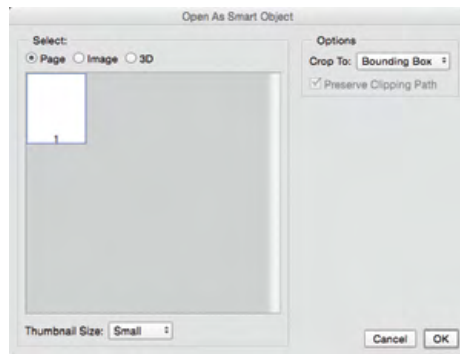
6. **In the Options bar, change the W and H fields to 100%.**

Placed files are not always scaled exactly proportionally; it's a good idea to check and (if necessary) restore the original height-to-width aspect ratio.

Change both fields to 100%.

7. **Press Return/Enter to finalize the placement of the first file.**

8. **Repeat Steps 4–7 to place Tantamount.ai as a Smart Object layer.**
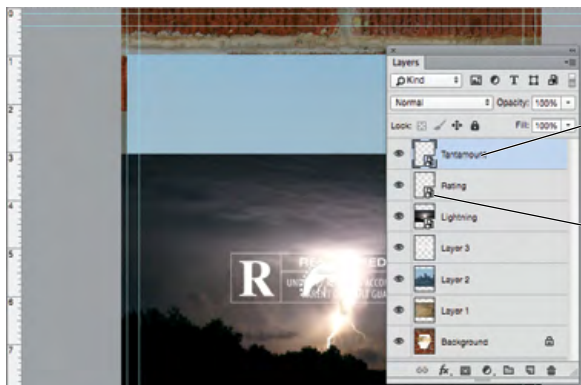
The three placed files are stored on layers whose names are based on the placed file names.

The placed files are Smart Object layers.

9. **Save the file and continue to the next stage of the project.**

Right now, you have a fairly incomprehensible mess of four raster images and three vector objects all piled on top of one another. You will start to make sense of these files in the next stage.

Working with Embedded and Linked Smart Objects

In the previous exercise you used the Place Embedded option to create Smart Object layers that contain the placed file data. Using that method the embedded file data becomes a part of the parent file.

If you double-click the thumbnail icon of an embedded Smart Object, the embedded file opens in an application that can edit the stored data — AI files open in Illustrator; PSD, TIFF, and JPEG files open in Photoshop.

When you first open a Smart Object file, the application provides advice for working with Smart Objects:

After you make necessary changes, you can save the file and close it, then return to Photoshop (if necessary). Your changes in the Smart Object file will automatically reflect in the parent file where the Smart Object layer is placed.

Important note: Do not use the Save As option when editing Smart Object layers. The changes will not reflect in the parent file if you save changes with a different file name.

If you choose the Place Linked option in the File menu, Smart Object layer stores a link to the original file data rather than embedding that data inside the parent file.
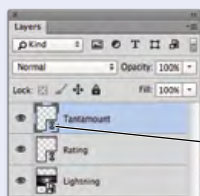

This icon identifies a linked Smart Object layer.

This provides an opportunity for maintaining consistency because you only need to change one instance of a file to reflect those changes anywhere the file is placed.

Say you place a logo created in Illustrator into a Photoshop file. The same logo is also placed as a link in a number of InDesign documents. If you open the logo in Illustrator and change the main color (for example), then save the changes in the original logo file, the new color automatically reflects in any file — whether InDesign or Photoshop — that is linked to the edited logo.

If you use the Place Embedded option in Photoshop, the Smart Object layer is not linked to the original, edited logo file; you would have to open the embedded Smart Object and make the same color change a second time.

Linked files also have potential disadvantages. As we mentioned previously, double-clicking a Smart Object layer thumbnail opens the linked or embedded file in an application that can edit the relevant data. If you are working with *linked* Smart Object layers, any changes you make affect the original file data. This means your changes appear not only in the parent Photoshop file where it is linked, but also any other file that links to the same data.

For a file to output properly, linked Smart Object layers must be present and up to date at the time of output.

If the linked file has been modified while the parent file is open, the changes automatically reflect in the parent file when you return to that document. If the parent file is not open in Photoshop when the linked file is edited, you will see a Modified icon for the linked Smart Object layer.

If the linked file is deleted or moved to another location after it has been placed, the parent file will show a Missing icon for the linked Smart Object layer.

If a linked Smart Object has been moved while the parent file is not open, you will see a warning dialog box when you open the parent Photoshop file. You can use that dialog box to locate the missing link, or close it and use the options in the Layers panel to correct the problem.

Control/right-clicking a linked Smart Object layer name opens a contextual menu with options to update modified content and resolve broken links.
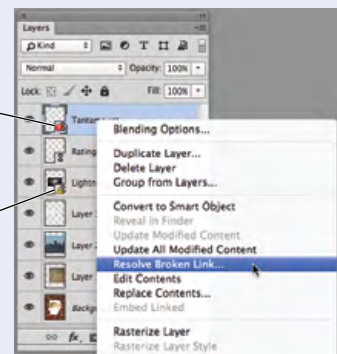
This icon identifies a linked, missing Smart Object layer.

This icon identifies a linked, modified Smart Object layer.

To avoid potential problems with missing linked files, you can use the File>Package command to create a job folder. The parent file is copied to a new folder, along with a Links subfolder containing any files that are placed as linked Smart Object layers.
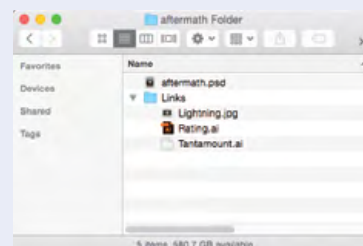
Stage 2 **Managing Layers**

Your ad file now has most of the necessary pieces, but it's still not an actual design — just a pile of images. When you composite images into a cohesive design, you almost certainly need to manipulate and transform some of the layers to make all of the pieces work together.

Photoshop includes a number of options for managing layers: naming layers for easier recognition, creating layer groups so multiple layers can be manipulated at once, moving layers around on the canvas, transforming layers both destructively and non-destructively, controlling individual layer visibility, and arranging the top-to-bottom stacking order of layers to determine exactly what is visible. You will use all of these options in this stage of the project.

NAME LAYERS AND LAYER GROUPS

It's always a good idea to name your layers because it makes managing the file much easier — especially when you work with files that include dozens of layers. Even with only four unnamed layers in this file (counting the Background layer), it would be tedious to have to toggle each layer on to find the one you want.

1. **With aftermath.psd open, review the Layers panel.**

2. **Option/Alt-click the eye icon for Layer 1 to hide all other layers.**

   Toggling layer visibility is an easy way to see only what you want to see at any given stage in a project.

   Clicking the eye icon for a specific layer hides that layer; clicking the empty space where the eye icon should be shows the hidden layer. To show or hide a series of consecutive layers, click the visibility icon (or empty space) for the first layer you want to affect, hold down the mouse button, and drag down to the last layer you want to show or hide.

The checked pattern shows transparent areas of the visible layer(s).

Click an empty space to show a hidden layer.

Click the eye icons to hide individual layers.

Option/Alt-click an eye icon to hide all other layers.
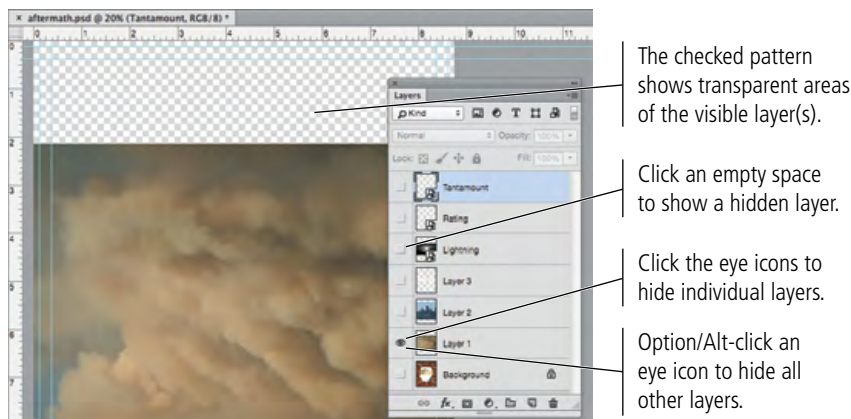
3. **Double-click the Layer 1 layer name, and then type Storm.**

   You can rename any layer by simply double-clicking the name and typing.

Double-click the layer name to access it.

Press Return/Enter after typing to finalize the new name.
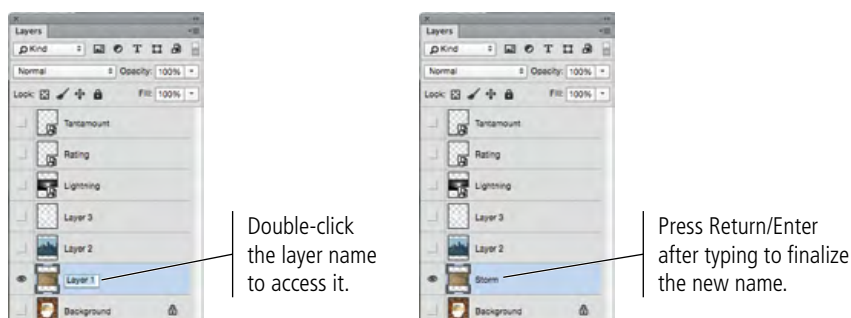
4. **Click the eye icon to hide the renamed Storm layer, and then click the empty space to the left of Layer 2 to show only that layer.**

5. **Double-click the Layer 2 name and then type Skyline to rename the layer.**

6. **Repeat Steps 4–5 to rename Layer 3 as Title.**

7. **Click the spaces on the left side of the Layers panel (where the eye icons were) to show all hidden layers.**

8. **In the Layers panel, click the Tantamount layer to select it.**

9. **Press Shift and click the Rating layer to select that layer as well.**

   Since the Tantamount layer was already selected, the Rating layer should now be a second selected (highlighted) layer.

10. **Click the button in the top-right corner of the panel to open the Layers panel Options menu. Choose New Group from Layers.**
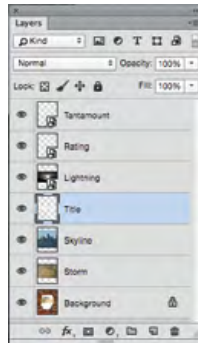
    This option creates a group that automatically contains the selected layers.

    You can also create an empty group by choosing New Group (this option is available even when no layer is selected) or by clicking the New Group button at the bottom of the panel. In this case, the new group is automatically named "Group N" (N is a placeholder for a sequential number); of course, you can rename a layer group just as easily as you can rename a layer.

Note:

Press Shift and click to select consecutive layers in the Layers panel.

Press Command/Control and click to select non-consecutive layers in the Layers panel.

Click here to open the panel Options menu.

Two layers are selected.

New Group button
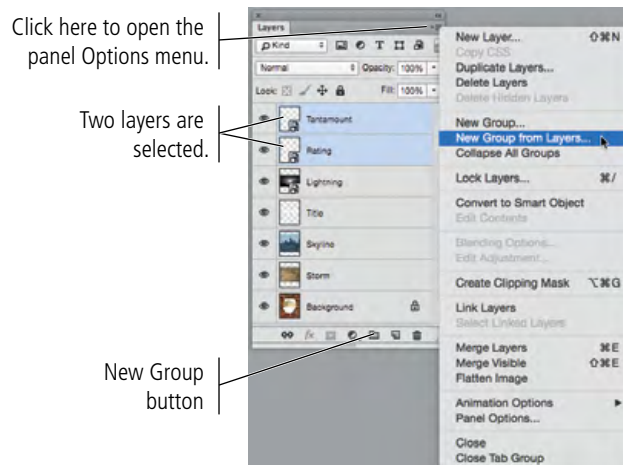
11. **In the New Group from Layers dialog box, type Logos in the Name field and click OK.**

As with any other layer, you should name groups based on what they contain so you can easily identify them later.
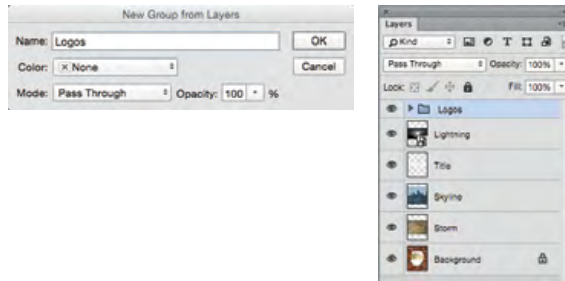
12. **Click the arrow to the left of the Logos group name to expand the layer group.**

You have to expand the layer group to be able to access and edit individual layers in the group. If you select the entire layer group, you can move all layers within the group at the same time. Layers in the group maintain their position relative to one another.

13. **Save the file and continue to the next exercise.**

## MOVE AND TRANSFORM SMART OBJECT LAYERS

Photoshop makes scaling, rotating, and other transformations fairly easy to implement, but it is important to realize the potential impact of your transformations.

1. **With aftermath.psd open, click the Tantamount layer (in the Logos folder) in the Layers panel to select only that layer.**

2. **Choose the Move tool in the Tools panel.**

As the name suggests, the Move tool is used to move a selection around on the canvas. You can select a specific area, and then click and drag to move only the selection on the active layer. If there is no active selection area, you can click and drag to move the contents of the entire active layer.

3. **In the Options bar, make sure the Auto-Select option is not checked.**

When Auto-Select is checked, you can click in the image window and drag to move the contents of the layer containing the pixels where you click; you do not need to first select the layer in the Layers panel before moving the layer content. This is very useful in some cases, as you will see later in this project. However, the Auto-Select option is *not* very useful when the contents of multiple layers are stacked on top of each other (as is the case in your file as it exists now).

4. **Click in the image window and drag until the Tantamount layer content snaps to the bottom-right live-area guides.**

   If you toggled off the Snap feature when you used the Crop tool, you should turn it back on now by choosing View>Snap.

   This option should not be checked.

   Move tool

   With no marching ants in the image window, select the layer you want to move, then click and drag in the document window to move the layer's contents.
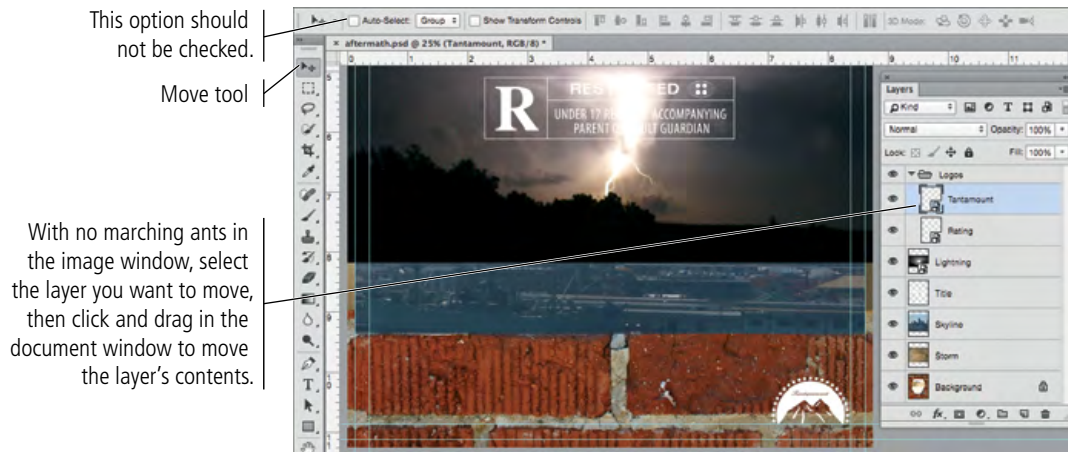
5. **Click the Rating layer in the Layers panel to select that layer.**

6. **Click in the image window and drag until the Rating layer content snaps to the bottom-left live-area guides.**

7. **With the Rating layer still active, choose Edit>Free Transform.**

   When you use the transform options, bounding box handles surround the selection.

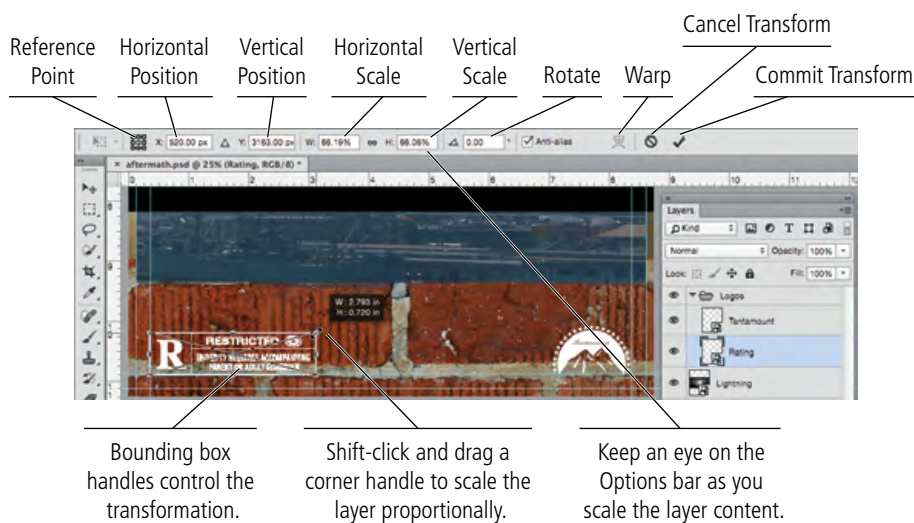8. **Press Shift, click the top-right bounding box handle, and then drag down and left until the layer content is approximately two-thirds the original size.**

   The selection (in this case, the entire Rating layer) dynamically changes as you scale the layer. Pressing Shift while you drag a handle constrains the image proportions as you resize it. When you release the mouse button, the handles remain in place until you finalize ("commit") the transformation.

   The live cursor feedback shows the new dimensions of the transformed selection.

   Reference Point   Horizontal Position   Vertical Position   Horizontal Scale   Vertical Scale   Rotate   Warp   Cancel Transform   Commit Transform

   Bounding box handles control the transformation.

   Shift-click and drag a corner handle to scale the layer proportionally.

   Keep an eye on the Options bar as you scale the layer content.

   While you're manually transforming a layer or selection, the Options bar shows the specifics. You can also type into these fields to apply specific numeric transformations.

9. **Press Return/Enter to finalize the transformation.**

   After finalizing the transformation, the bounding-box handles disappear.

10. **With the Rating layer still active, press Command/Control-T to enter Free Transform mode again and look at the Options bar.**

    Because the rating layer is a Smart Object layer, the W and H fields still show the scaling percentage based on the original.

    The W and H fields still show the scaling you applied in Step 8.
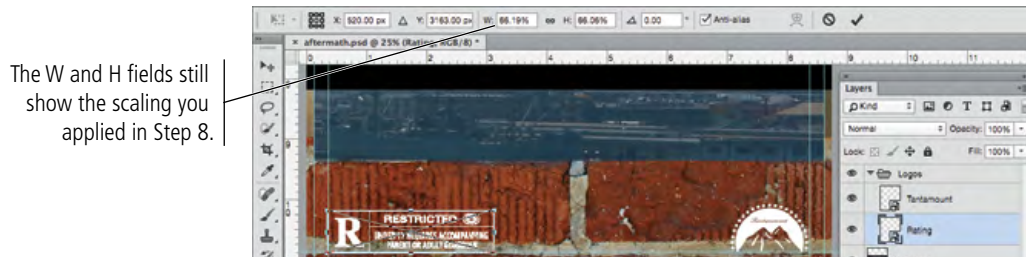
11. **In the Options bar, choose the bottom-left reference point location.**

    The selected reference point defines the point around which transformations are made. By selecting the bottom-left point, for example, the bottom-left corner of the active selection will remain in place when you scale the selection in the next steps; the top-right corner will move based on the scaling you define.

12. **Click the Link icon between the W and H fields to constrain proportions during the transformation.**

13. **Type 50 in the Options bar W field.**

    The bottom-left reference point is selected.

    Click the Lock icon to constrain the height and width proportionally.
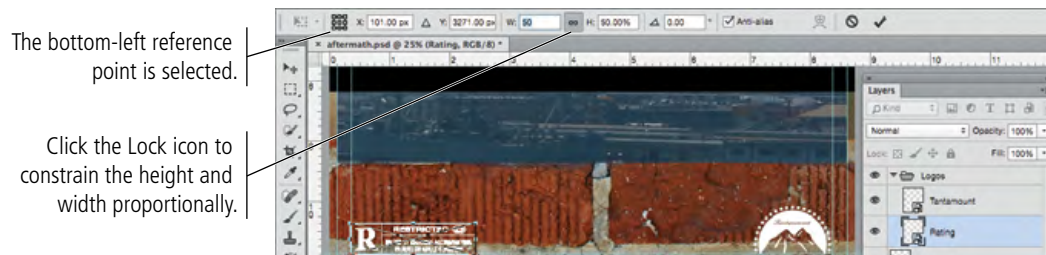
14. **Click the Commit Transform button on the Options bar (or press Return/Enter) to finalize the transformation.**

    If you press Return/Enter, you have to press it two times to finalize the transformation. The first time you press it, you apply the change to the active field; the second time, you finalize the transformation and exit Free Transform mode.

15. **Collapse the layer group by clicking the arrow at the left of the group name.**
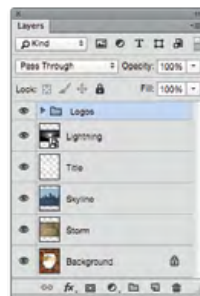
16. **Save the file and continue to the next exercise.**

TRANSFORM A REGULAR LAYER

Smart Object layers enable non-destructive transformations, which means those transformations can be changed or undone without affecting the quality of the layer content. Transforming a regular layer, on the other hand, is destructive and permanent.
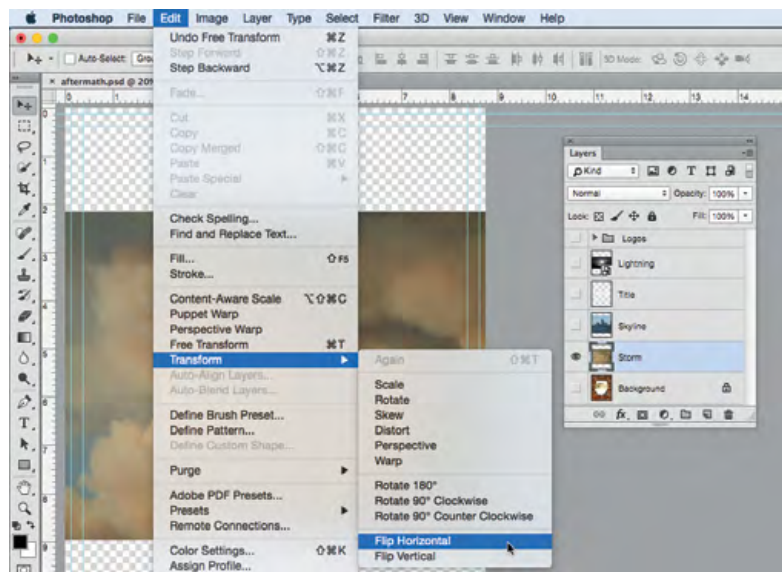
1. **With aftermath.psd open, hide all but the Storm layer. Click the Storm layer in the Layers panel to select it.**

2. **If necessary, drag the layer content so it is approximately centered on the canvas.**

3. **Choose Edit>Transform>Flip Horizontal.**

    The Transform submenu commands affect only the selected layer.

4. **Press Command/Control-T to enter Free Transform mode.**

    Some handles might not be visible within the boundaries of the document window. If necessary, zoom out so you can see all eight handles of the layer content.

The edge of the bounding box shows that some parts of the layer do not fit within the current file dimensions.
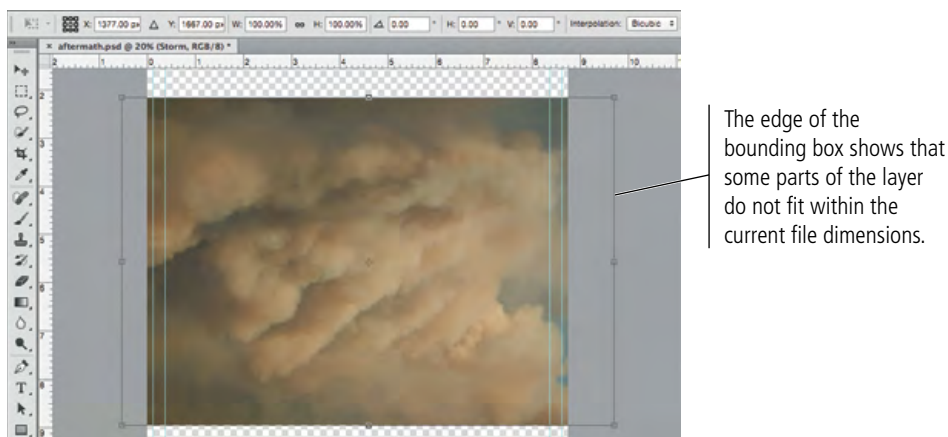
5. **In the Options bar, choose the center reference point if it is not already selected.**

6. **Click the Link icon between the W and H fields to constrain the proportions.**

7. **Place the cursor over the W field label to access the scrubby slider for that field.**

When you see the scrubby slider cursor, you can drag right to increase or drag left to decrease the value in the related field.

The center reference point is selected.

Click the Link icon to constrain proportions.

Place the cursor over a field label to access the "scrubby slider" for that field.
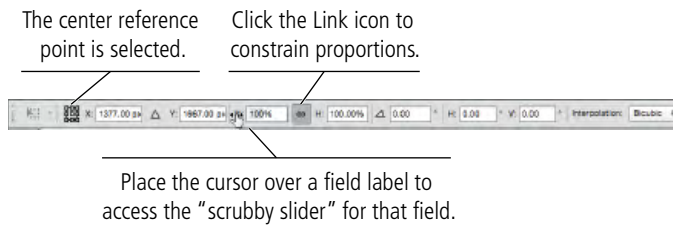
8. **Click and drag left until the W field shows 90%.**
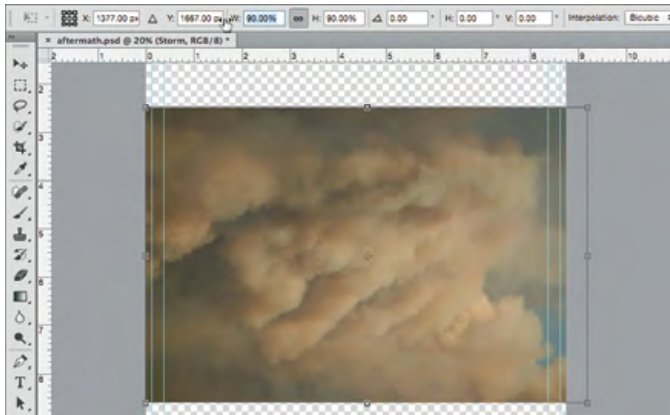
9. **Press Return/Enter to finalize the transformation.**

10. **With the Storm layer still active, press Command/Control-T to re-enter Free Transform mode.**

Once you commit the transformation on a regular layer, the transformation is final. Looking at the Options bar now, you can see that it shows the layer at 100% instead of the 90% from Step 8.

If you transform a Smart Object layer, the scale percentage is maintained even after you finalize the change — unlike scaling a regular layer, where the layer re-calibrates so the new size is considered 100% once you finalize the scaling.

Re-entering Free Transform mode shows that the regular layer is again 100%, even after scaling.
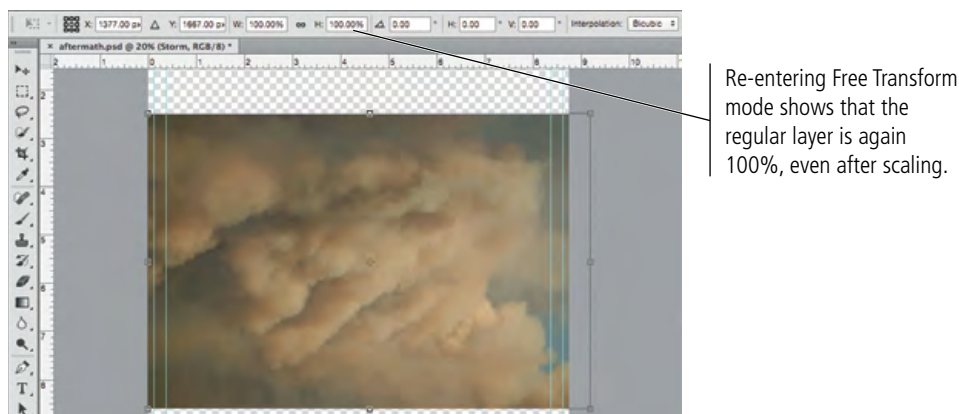
11. **Press Esc to exit Free Transform mode without changing anything.**

12. **Save the file and continue to the next exercise.**

✍ TRANSFORM THE BACKGROUND LAYER

Your file currently has a number of layers, most of which were created by pasting or placing external files into the original file. Because every photograph and scan (and some images that you create from scratch in Photoshop) begins with a default locked Background layer, it is important to understand the special characteristics of that layer:

- You can't apply layer transformations, styles, or masks to the Background layer.

- You can't move the contents of the Background layer around in the document.

- If you delete pixels from the Background layer, you must determine the color that will be used in place of the deleted pixels.

- The Background layer cannot include transparent pixels, which are necessary for underlying layers to be visible.

- The Background layer is always the bottom layer in the stacking order; you can't add or move layers lower than the Background layer.

In the final composite file for this project, you need to flip the bricks image from top to bottom, remove the desert area from the hole in the bricks, and place the other photographs to appear through the hole in the wall. For any of these options to work properly, you need to convert the default Background layer to a regular layer.

1. **With `aftermath.psd` open, hide the Storm layer and then show the Background layer.**

2. **Click the Background layer to select it and then choose Edit>Transform.**
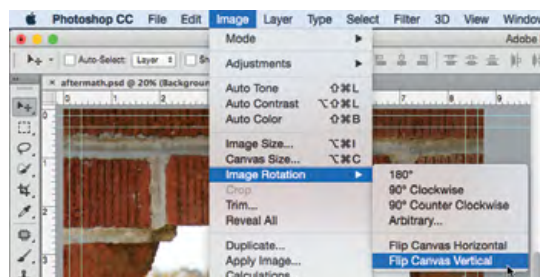
   The Transform submenu commands are not available for the locked Background layer.
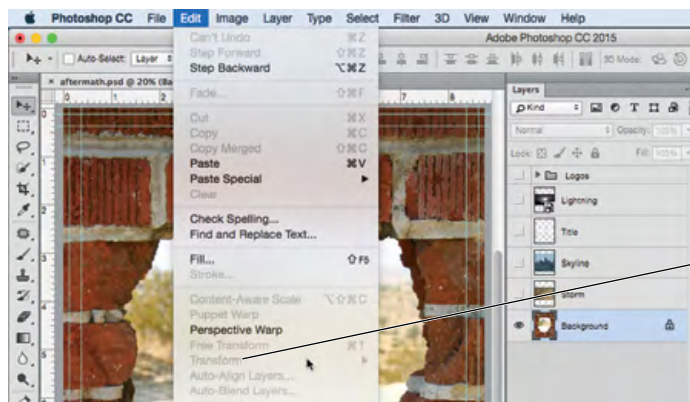
Many commands are not available because the Background layer is locked.

3. **With the Background layer still selected, choose Image>Image Rotation> Flip Canvas Vertical.**

   To affect the locked background layer, you have to flip the actual canvas.

4. **Show the Logos layer group.**

Because you flipped the canvas, the Tantamount and Ratings layers are also flipped upside-down. Rotating or flipping the entire canvas affects all layers in the file; this is obviously not what you want to do.
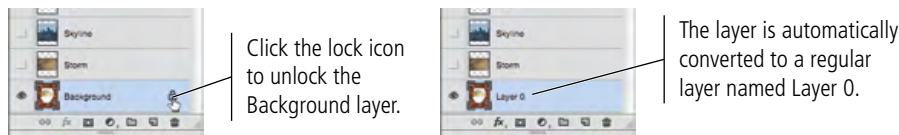

Because you flipped the canvas, the logos are now upside-down.

Showing the layer group shows all layers in that group.
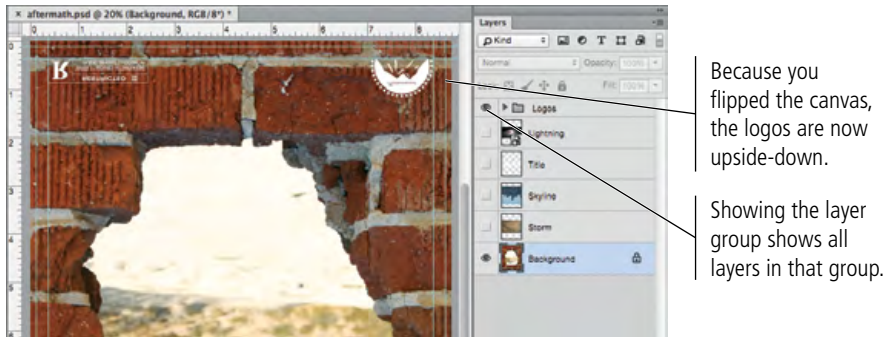
5. **Choose Edit>Undo Flip Canvas Vertical.**

The Undo command affects the last action you performed; the actual command changes to reflect the action that will be undone. Showing or hiding a layer is not considered an "action," so the Undo command simply un-flips the canvas. The Logos group is again hidden, as it was when you flipped the canvas in Step 3.
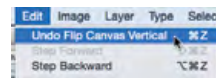
6. **In the Layers panel, click the Lock icon on the Background layer.**

Clicking the Lock icon unlocks the layer and immediately converts the previous Background layer to a regular layer named "Layer 0."

Click the lock icon to unlock the Background layer.

The layer is automatically converted to a regular layer named Layer 0.

7. **Double-click the Layer 0 layer name to highlight it, then type** `Bricks` **to rename the layer.**

8. **With the Bricks layer selected in the panel, choose Edit>Transform>Flip Vertical.**

Because the layer is no longer locked, you can now access and apply the transform commands that affect only the selected layer.

9. **Show the Logos layer group again.**

Because you flipped only the selected layer, the Tantamount and Ratings layers are not flipped; they appear in the correct position and orientation.
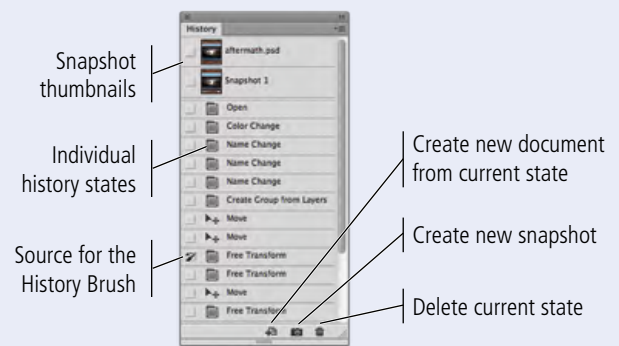

10. **Show all layers in the file.**

11. **Save the file and continue to the next stage of the project.**

The Undo command (Edit>Undo or Command/Control-Z) only steps back to the last action completed; after you use the Undo command, it toggles to Redo. You can also use the Step Backward command (Edit>Step Backward or Command-Option-Z/Control-Alt-Z) to move back in the history one step at a time, or use the History panel (Window>History) to navigate back to earlier stages.

Every action you take is recorded as a state in the History panel. You can click any state to return to that particular point in the document progression. You can also delete specific states or create a new document from a particular state using the buttons at the bottom of the panel.

Snapshot thumbnails

Individual history states

Source for the History Brush

Create new document from current state

Create new snapshot

Delete current state

By default, the History panel stores the last 20 states; older states are automatically deleted. You can change that setting in the Performance pane of the Preferences dialog box. Keep in mind, however, that storing a larger number of states will increase the memory that is required to work with a specific file.
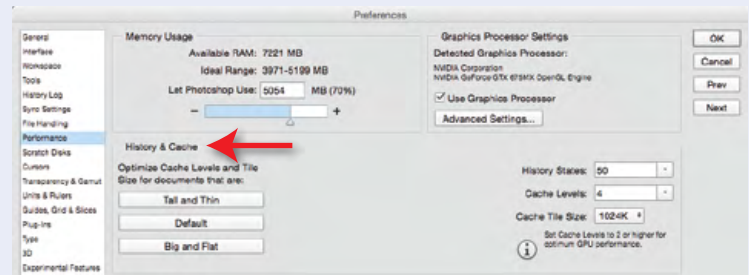
Keep the following in mind when using the History panel:

- The default snapshot is the image state when it was first opened.

- The oldest state is at the top of the list; the most recent state appears at the bottom.

- The History State slider identifies the active state.

- You can save any particular state as a snapshot to prevent it from being deleted when that state is no longer within the number of states that can be stored.

- The history is only stored while the file is open; when you close a file, the history and snapshots are not saved.

- When you select a specific state, the states below it are dimmed so you can see which changes will be discarded if you go back to a particular history state.

- Selecting a state and then changing the image eliminates all states that come after it.

- Deleting a state deletes that state and those after it. If you choose Allow Non-Linear History in the History Options dialog box (accessed in the History panel Options menu), deleting a state deletes only that state.
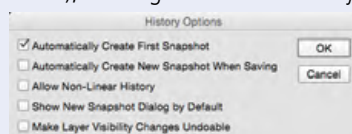
If you need to keep a record of a file's history even after you close the file, you can activate the History Log option in the History Log pane of the Preferences dialog box. When this option is checked, you can save the history log as metadata, in a text file, or both. You can also determine the level of detail that will be recorded in the history log.

- Sessions Only records each time you launch or quit and each time you open and close individual files.

- Concise adds the text that appears in the History panel to the Sessions information.

- Detailed gives you a complete history of all changes made to files.

Stage 3 Creating Complex Selections

At this stage of the project, you still have a few issues to resolve: some of the images are still randomly stacked on top of one another, and some images have areas that are hiding other images (the blue sky in the Skyline layer, for example). In this stage, you start fixing these problems.

Virtually any Photoshop project involves making some kind of selection. Making selections is so important, in fact, that there are no fewer than nine tools dedicated specifically to this goal, as well as a whole Select menu and a few other options for making and refining selections.

In an earlier lesson you learned how to use the Rectangular Marquee tool to draw simple selections. In the next series of exercises, you use several other selection methods to isolate pixels from their backgrounds (called **silhouetting**).

MAKE A FEATHERED SELECTION IN A SMART OBJECT

Smart Object layers are actually links to the files that are placed. If you open the linked file and make changes, those changes are automatically reflected in the file where the Smart Object layer exists. In this exercise, you will explore one of the advantages and disadvantages of Smart Object layers.

1. **With `aftermath.psd` open, hide all but the Lightning layer.**

2. **Double-click the Lightning layer thumbnail to open the Smart Object file in its own window. If you see a warning message, click OK.**

   This message tells you that you must save the Smart Object with the same name for the changes to reflect in the aftermath file. You can't use the Save As function to save the file with a different name or in a different location.


   Double-click the Smart Object layer thumbnail to open the linked file.
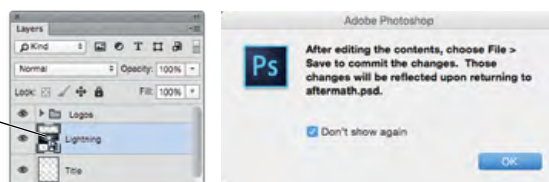
   Note:

   If you don't see this message, you can open the General pane of the Preferences dialog box and click the Reset All Warning Dialogs button.

   The Lightning.jpg file opens separately, appearing by default as a separate tab at the top of the document window. This is a JPEG file, which means it is a flat file with only a locked Background layer.
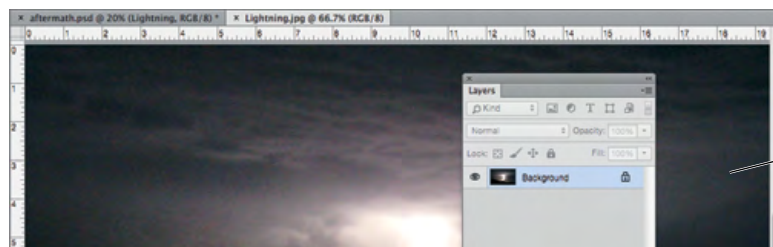
   The Lightning image is a flat image, which means it has only a Background layer that is locked.

3. **Close the Lightning.jpg file.**

   Your goal in this exercise is to create a transparent area around the actual lightning bolt.

   Flat files (including JPEG) do not support transparency. To save the file with transparency, you should save it as a native Photoshop file with the PSD extension. However, as the warning message indicated, you must save the Smart Object file with the same name — which includes the file extension.
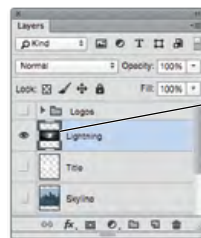
   Because you can't save transparency in a JPEG file, you need to break the link to the original JPEG file before you can create that transparency in the composite file.

4. **With aftermath.psd still open, Control/right-click the Lightning layer name in the Layers panel. Choose Rasterize Layer in the contextual menu.**
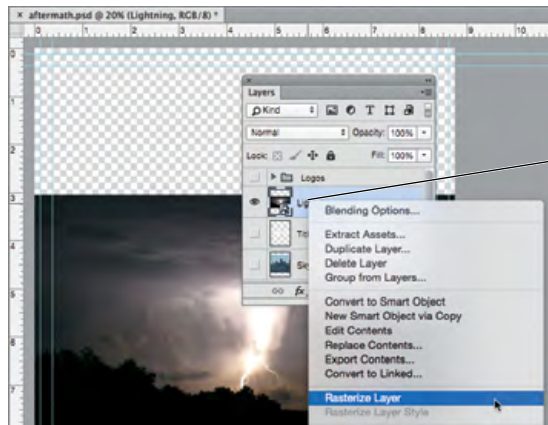
Contol/right-click the layer name to open the layer's contextual menu.

Rasterizing the Smart Object basically removes the link to any external file, making the Smart Object a part of the file in which it has been placed.

Note:

If the original placed file was a native Photoshop file, you would not need to rasterize the Smart Object layer to accomplish your goal.

After rasterizing the layer, the thumbnail shows that this layer is a regular image layer instead of a Smart Object layer.

5. **Select the Lasso tool in the Tools panel.**

6. **Drag a rough shape around the lightning in the photo.**

The lasso tools allow you to make irregular selections — in other words, selections that aren't just rectangular or elliptical. When you release the mouse button, the end point automatically connects to the beginning point of the selection.

Lasso tool

Open ends of the selection automatically connect when you release the mouse button.

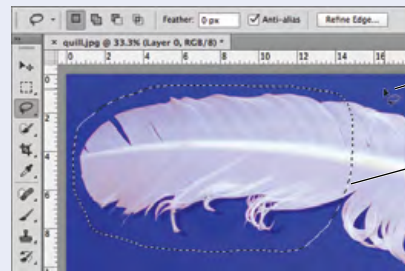Marching ants identify the selected area.
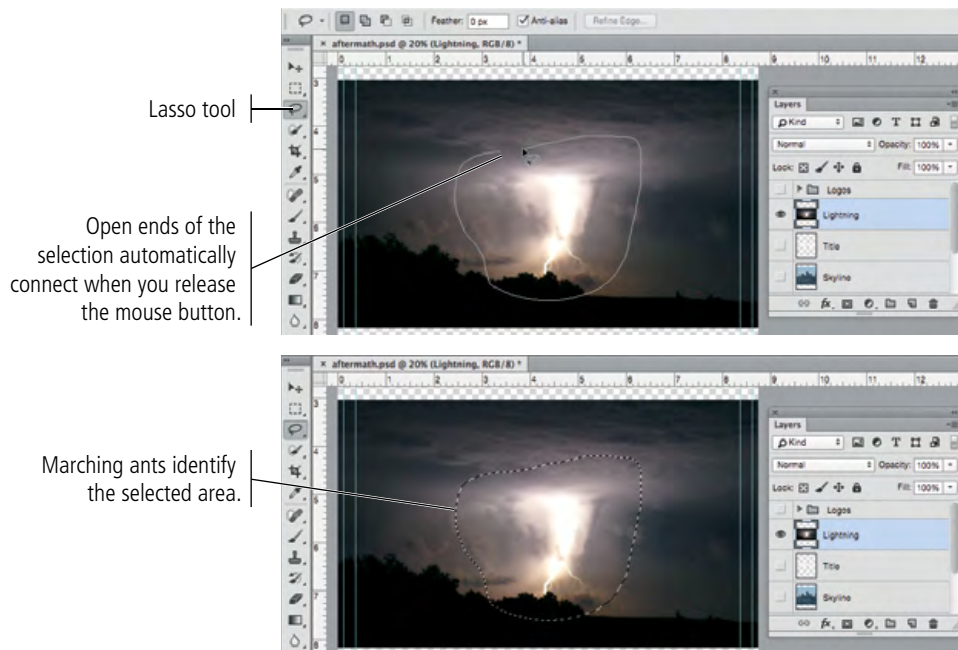
The basic **Lasso tool** works like a pencil, following the path where you drag the mouse.

The **Polygonal Lasso tool** creates selections with straight lines, anchoring a line each time you click the mouse. To close a selection area, you must click the first point in the selection.

The **Magnetic Lasso tool** snaps to high-contrast edges; you can use the Options bar to control the way Photoshop detects edges of an image.

- **Width** is the distance away from the edge the cursor can be and still detect edges; if you set this value higher, you can move the cursor farther from edges.

- **Contrast** is how different the foreground can be from the background and still be detected; if there is a sharp distinction between the foreground and background, you can set this value higher.

- **Frequency** is the number of points that will be created to make the selection; setting this number higher creates finer selections, while setting it lower creates smoother edges.
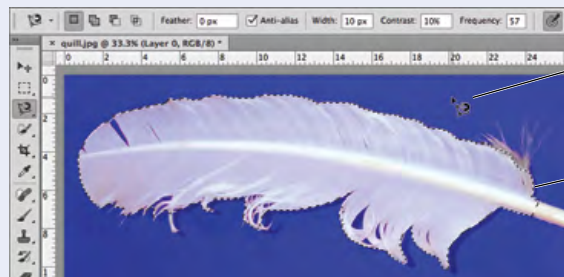
Lasso tool cursor

Drag any shape to make a selection.
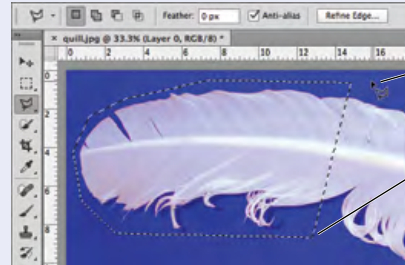
Polygonal Lasso tool cursor

Click each spot to anchor the selection line.

Magnetic Lasso tool cursor

Drag near the edges of the object and the selection snaps to the edges.

It isn't uncommon for a mouse to unexpectedly jump when you don't want it to — which can be particularly troublesome if you're drawing a selection with the Polygonal or Magnetic Lasso tools. If you aren't happy with your Polygonal or Magnetic Lasso selection, press Escape to clear the selection and then try again.

7. **With the marching ants active, choose Select>Modify>Feather.**

Photoshop offers a number of options for modifying an exiting selection marquee. In the Select>Modify menu:

Border creates a selection of a defined number of pixels around the edge of the active marquee.

Smooth helps to clean up stray pixels at the edge of a selection. Within a defined radius from the selection edge, pixels with less than half of the surrounding pixels are excluded from the selection.

Expand and **Contract** enlarge and shrink a selection (respectively) by a defined number of pixels.

Feather creates a blended edge to the active selection area.

Select>Grow expands the selection to include all adjacent pixels that fall within the tolerance defined for the Magic Wand tool.

Select>Similar expands the selection to include all pixels throughout the image that fall within the tolerance range, even if they are not adjacent to the active selection.

Select>Transform Selection shows bounding box handles around the selection marquee, which you can use to transform the selection just as you would transform layer content.
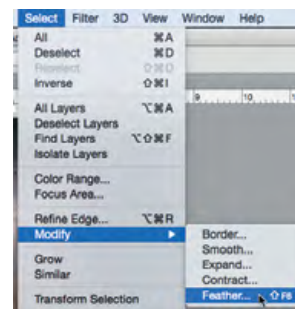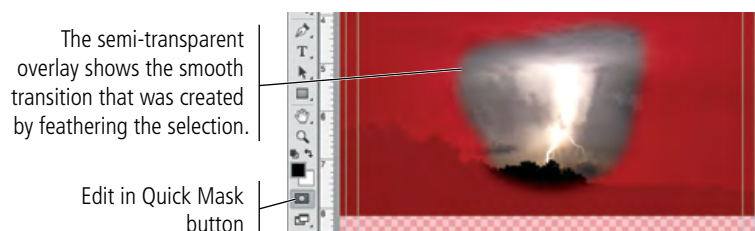
8. **In the resulting dialog box, type 35 in the Feather Radius field. Click OK to return to the image window.**

   Feathering means to soften the edge of a selection so the image blends into the background instead of showing a sharp line around the edge. The Feather Radius defines the distance from solid to transparent. In the image window, there's no apparent difference in the selection because the marching ants can't show shades of a selection.
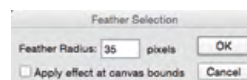
9. **Click the Edit in Quick Mask button at the bottom of the Tools panel to toggle into Quick Mask mode.**

   This mode creates a temporary red overlay (called an Alpha channel) that shows the feathered selection. By default, the overlay is semi-transparent, which allows you to see the underlying image.

   The semi-transparent overlay shows the smooth transition that was created by feathering the selection.

   Edit in Quick Mask button

10. **Click the Edit in Standard Mode button at the bottom of the Tools panel to toggle off the Quick Mask.**

    When Quick Mask mode is active, the Edit in Quick Mask mode toggles to become the Edit in Standard Mode button.

11. **Choose Select>Inverse.**

    You want to remove the area around the lightning, so you have to select everything *other than* what you originally selected — in other words, the inverse of the previous selection.

    Marching ants surround the image edge and the original selection.
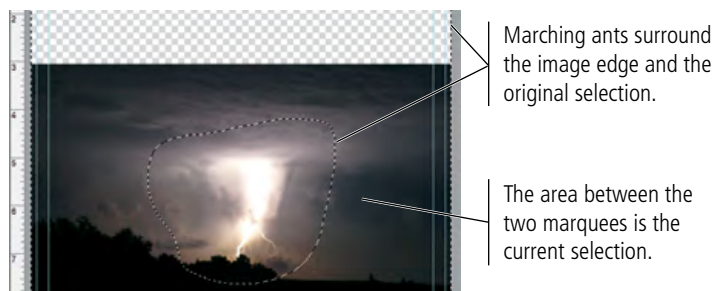
    The area between the two marquees is the current selection.

12. **With the Lightning layer selected in the Layers panel, press Delete/Backspace.**

    Selection marquees are not particular to a specific layer. You have to make sure the correct layer is active before you use the selection to perform some action.

    Pixels in the selection area are permanently removed from the layer.
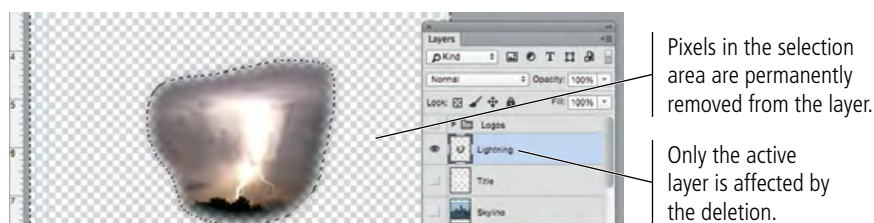
    Only the active layer is affected by the deletion.

13. **Choose Select>Deselect to turn off the active selection (marching ants).**

14. **Save the file and continue to the next exercise.**

You need a bit of background about channels to understand what's happening in the Quick Mask you will use in the next exercise. (You will use channels extensively in later projects.)

Every image has one channel for each component color. An RGB image has three channels: Red, Green, and Blue; a CMYK image has four channels: Cyan, Magenta, Yellow, and Black. Each channel contains the information for the amount of that component color in any given pixel.

An RGB image has three channels, one for each additive primary.

In RGB images, the three additive primaries can have a value of 0 (none of that color) to 255 (full intensity of that color). Combining a value of 255 for each primary results in white; a value of 0 for each primary results in black.

A CMYK image has four channels, one for each subtractive primary plus one for black.

In CMYK images, the three subtractive primaries plus black are combined in percentages from 0 (none of that color) to 100 (full intensity of that color) to create the range of printable colors. Channels in a CMYK image represent the printing plates or separations required to output the job.
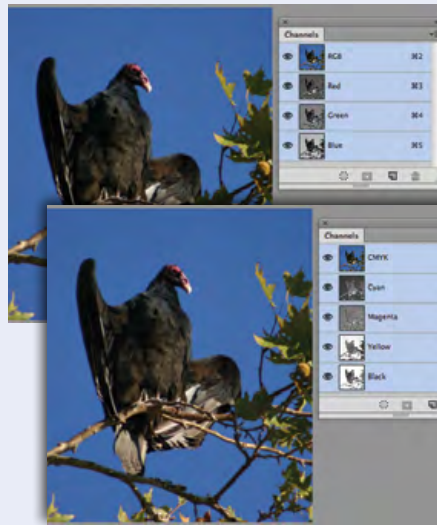
When you work in Quick Mask mode, an extra Alpha channel is created to temporarily store the selection area. An Alpha channel functions like a regular channel, in that it has the same range of possible values (0–255 in an RGB image, 0–100 in a CMYK image). However, the Alpha value determines the degree of transparency of a pixel. In other words, a 50% value in the Alpha channel means that area of the image will be 50% transparent.

The Quick Mask channel stores the degree of transparency based on the current selection.

The semi-transparent red overlay shows areas being masked (i.e., the areas outside the current selection).

Alpha channels allow you to design with degrees of transparency. You can blend one image into another, blend one layer into another, or blend an entire image into a background in a page-layout application.

You can change the appearance of Alpha channel masks by double-clicking the Quick Mask button in the Tools panel, or double-clicking the Quick Mask thumbnail in the Channels panel.

Change the mask to overlay the masked area instead of the selected area.

Click here to change the color of the mask in the image window.

Use this option to make the mask more or less transparent. (This setting only affects the appearance of the mask in Photoshop.)
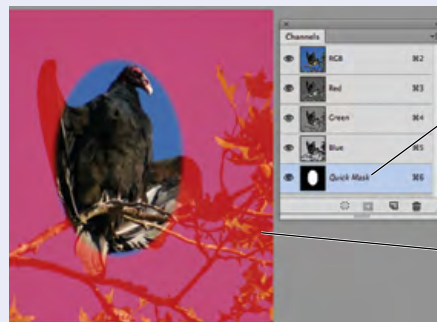
Quick Masks are useful when you need to work with a temporary selection or if you are still defining the exact selection area. As long as you stay in Quick Mask mode, the temporary Alpha channel remains in the Channels panel (listed in italics as "Quick Mask"). If you return to Standard mode, the Quick Mask disappears from the window and the panel.

Once you have created a complex selection, you can save it as a permanent Alpha channel by dragging the Quick Mask channel onto the New Channel button at the bottom of the Channels panel. This adds a channel named "Quick Mask copy" (not in italics), which will be a permanent part of the file even if you exit Quick Mask mode.
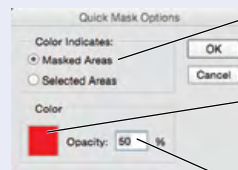

Permanent Alpha channel

Temporary Quick Mask channel

New Channel button

SELECT A COLOR RANGE AND CREATE A LAYER MASK

As we said earlier, there are many selection options in Photoshop, each with its own advantages and disadvantages. You have already used the marquee tools and lasso tools to select general areas of images.

Many images have both hard and soft edges, and/or very fine detail that needs to be isolated from its background (think of a model's blowing hair overlapping the title on the cover of a magazine). In this type of image, other tools can be used to create a very detailed selection based on the color in the image.

Rather than simply deleting pixels, as you did for the lightning image, another option for isolating an object with a path is to create a **layer mask** that hides unwanted pixels. Areas outside the mask are hidden but not deleted, so you can later edit the mask to change the visible part of the image.

1. **With `aftermath.psd` open, hide all but the Skyline layer. Click the Skyline layer to make it active.**

2. **Choose the Magic Wand tool (under the Quick Selection tool). In the Options bar, make sure the New Selection button is active and set the Tolerance field to 32.**

   The Magic Wand tool is an easy way to select large areas of solid color. The first four options in the Options bar are the same as those for the Marquee tools (New Selection, Add to Selection, Subtract from Selection, and Intersect with Selection).
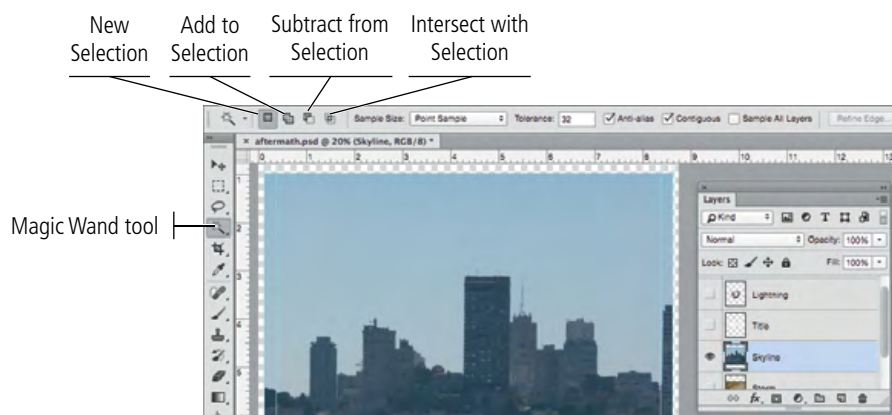
Tolerance is the degree of variation between the color you click and the colors Photoshop will select; higher tolerance values select a larger range based on the color you click. If you're trying to select a very mottled background (for example), you should increase the tolerance; be careful, however, because increasing the tolerance might select too large a range of colors if parts of the foreground object fall within the tolerance range.

The **Anti-alias** check box, selected by default, allows edges to blend more smoothly into the background, preventing a jagged, stair-stepped appearance.

When **Contiguous** is selected, the Magic Wand tool only selects adjacent areas of the color; unchecking this option allows you to select all pixels within the color tolerance, even if some pixels are non-contiguous (for example, inside the shape of the letter Q).

By default, selections relate to the active layer only. You can check **Sample All Layers** to make a selection of all layers in the file.

The **Refine Edge** button opens a dialog box where you can use a number of tools to fine-tune the selection edge.

Note:

Anti-aliasing is the process of blending shades of pixels to create the illusion of sharp lines in a raster image.

3. **Click anywhere in the blue sky area of the image.**
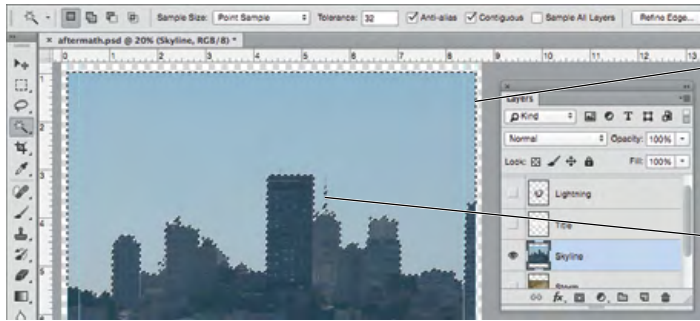
Marching ants indicate the selection area.

Fine areas of detail can't be distinguished by the marching ants, so you don't know if they're selected.

4. **Choose Select>Deselect to turn off the current selection.**

Although you could keep adding to the selection with the Magic Wand tool, the marching ants can't really show the fine detail.

5. **Choose Select>Color Range.**

6. **Make sure the Localized Color Clusters option is unchecked.**

7. **Choose White Matte in the Selection Preview menu (if it is not already).**

By changing the Selection Preview, you can more easily determine exactly what is selected. You can preview color range selections in the image window as:

- **None** shows the normal image in the document window.
- **Grayscale** shows the entire image in shades of gray; selected areas are solid white and unselected areas are solid black.
- **Black Matte** shows unselected areas in solid black; selected areas appear in color.
- **White Matte** shows unselected areas in solid white; selected areas appear in color.
- **Quick Mask** adds a partially transparent overlay to unselected areas.

8. **Set the Fuzziness value to 25 and click anywhere in the blue sky (in the document window).**

Fuzziness is similar to the Tolerance setting for the Magic Wand tool. Higher Fuzziness values allow you to select more variation from the color you click.

Depending on where you clicked, your selection might not exactly match what you see in our screen shot. For now, the important point is to know that the visible areas indicate the current selection.

Note:

Because the dialog box preview is so small, we prefer to rely on the preview in the document window, which is controlled in the Selection Preview menu at the bottom of the dialog box.
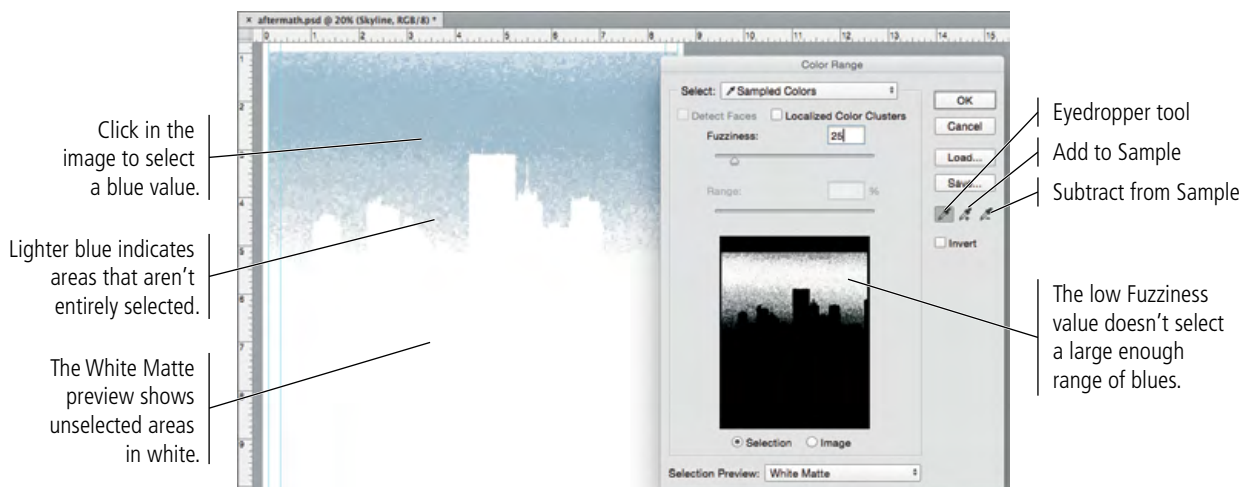
Click in the image to select a blue value.

Lighter blue indicates areas that aren't entirely selected.

The White Matte preview shows unselected areas in white.

Eyedropper tool
Add to Sample
Subtract from Sample

The low Fuzziness value doesn't select a large enough range of blues.

Selecting Localized Color Clusters

The **Localized Color Clusters** option in the Color Range dialog box can be used to select specific areas of a selected color. When this option is checked, the Range slider defines how far away (in physical distance) a color can be located from the point you click and still be included in the selection.
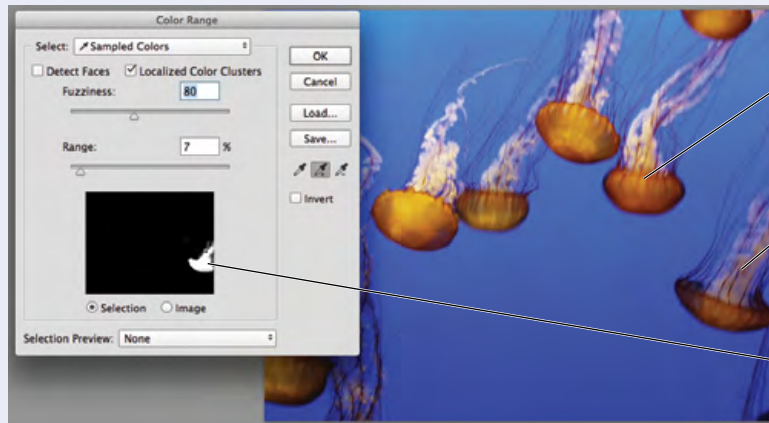
The same colors in other jellyfish are not selected because they are outside the reduced Range value.

We used a number of clicks with different Fuzziness values to sample the colors in this jellyfish.

Using Localized Color Clusters and a reduced Range value, we were able to isolate this jellyfish from its school.

Selection Presets

The Select menu at the top of the dialog box includes several presets for isolating specific ranges of primary colors (Reds, Yellows, Greens, Cyans, Blues, or Magentas), or specific ranges of color (highlights, midtones, or shadows).

If you select the **Skin Tones** preset, you can then activate the Detect Faces option at the top of the dialog box. By adjusting the Fuzziness slider, you can use this dialog box to make reasonably good selections of people's skin.

As you can see in this example, however, no automatic option is a perfect substitute when subjective decision-making is required. The tones in several of the models' shirts are very close to the color of skin, so some of those areas are included in the selection. This automatic selection method is still a good starting point, though, for making the complex selection of only a person's (or people's) skin.
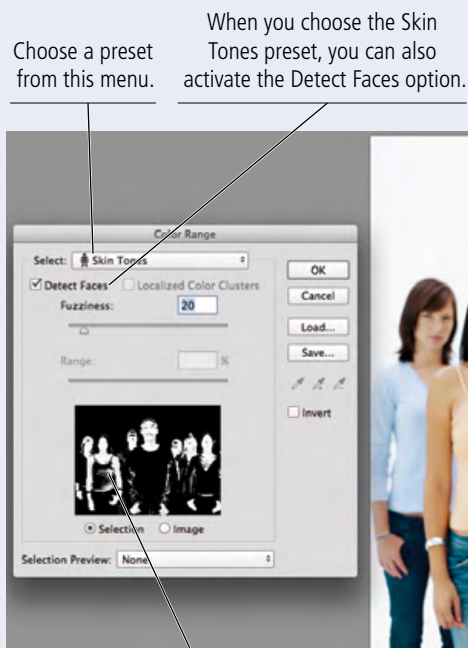
Choose a preset from this menu.

When you choose the Skin Tones preset, you can also activate the Detect Faces option.


Some colors are close to skin tones, but are are not skin. You will have to manually edit the mask to correct these areas.

9. **Change the Fuzziness value to 80 and watch the effect on the dialog box preview.**

Changing the Fuzziness value expands (higher numbers) or contracts (lower numbers) the selection. Be careful, though, since higher fuzziness values can eliminate fine lines and detail.
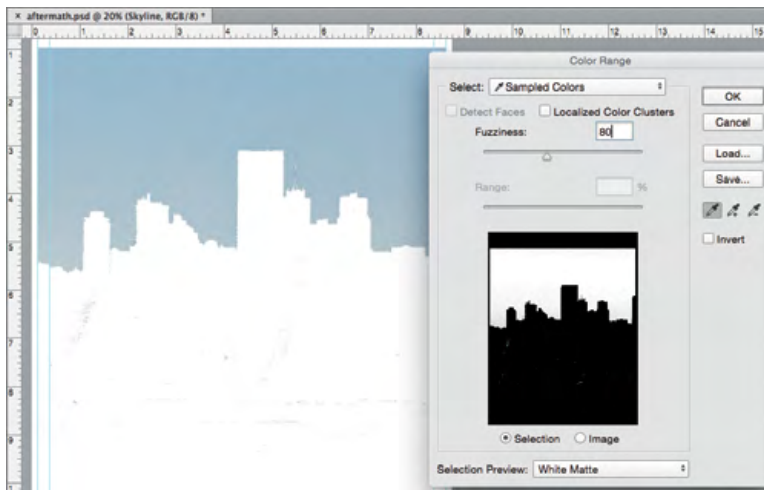
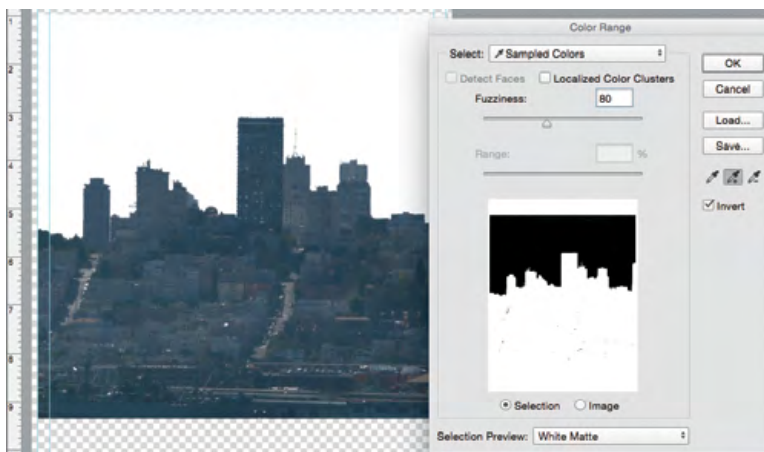10. **In the Color Range dialog box, click the Add to Sample eyedropper.**
    In the document window, click where parts of the blue sky are not shown in full strength.

Add to Sample eyedropper
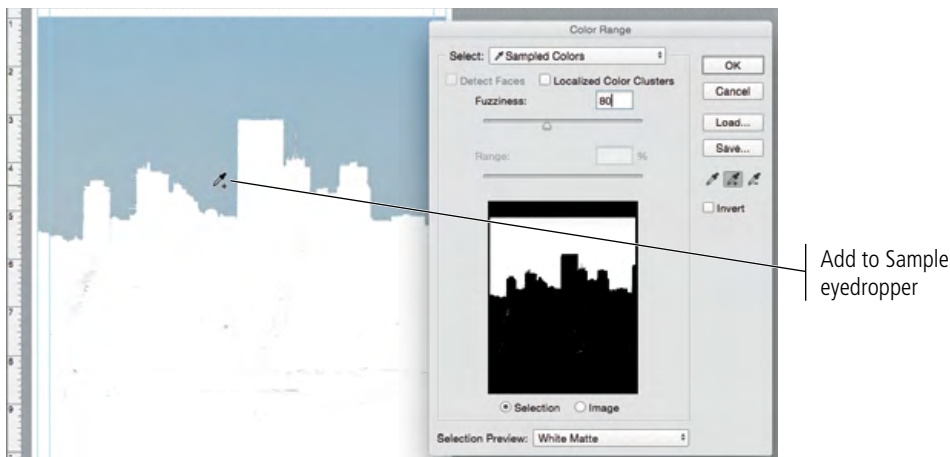
11. **Check the Invert box in the Color Range dialog box.**

Because your goal is to isolate the city and not the sky, it helps to look at what you want to keep instead of what you want to remove.

12. Continue adding to (or subtracting from, if necessary) your selection until you are satisfied that all the blue sky is gone.

You can also adjust the Fuzziness slider if necessary, but be sure you don't adjust it too far to include areas of the city.

13. Click OK when you're satisfied with your selection.

When you return to the image window, the marching ants indicate the current selection. In the Color Range dialog box, you selected the blue and inverted the selection — in other words, your selection is everything that isn't blue.

If you zoom out to see the entire file, you see the marching ants surround the canvas as well as the blue sky. Since the transparent area is not blue, it is included in the selection.

Marching ants surround the image edge.
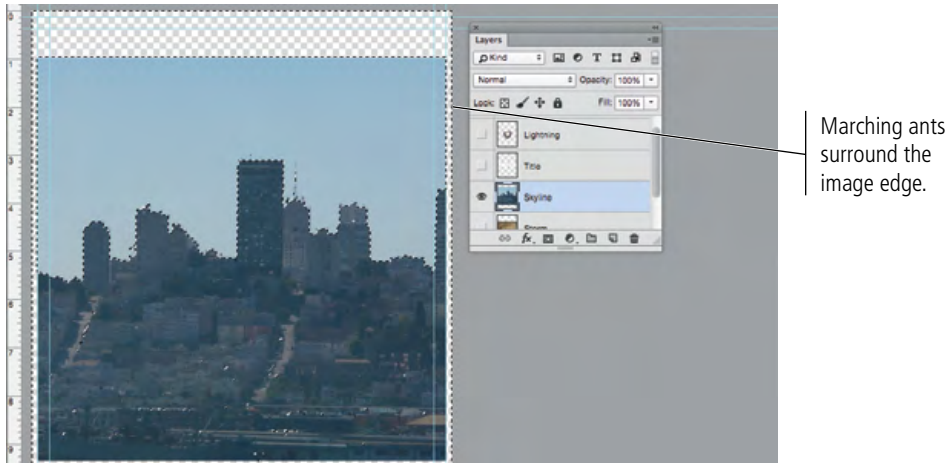
14. Choose the Magic Wand tool in the Tools panel and choose the Subtract from Selection option on the Options bar.

15. Click anywhere in the transparent area (the gray-and-white checkerboard) to remove that area from the selection.

New Selection   Add to Selection   Subtract from Selection   Intersect with Selection

Magic Wand tool

Magic Wand cursor in Subtract from Selection mode

Marching ants no longer surround the background.
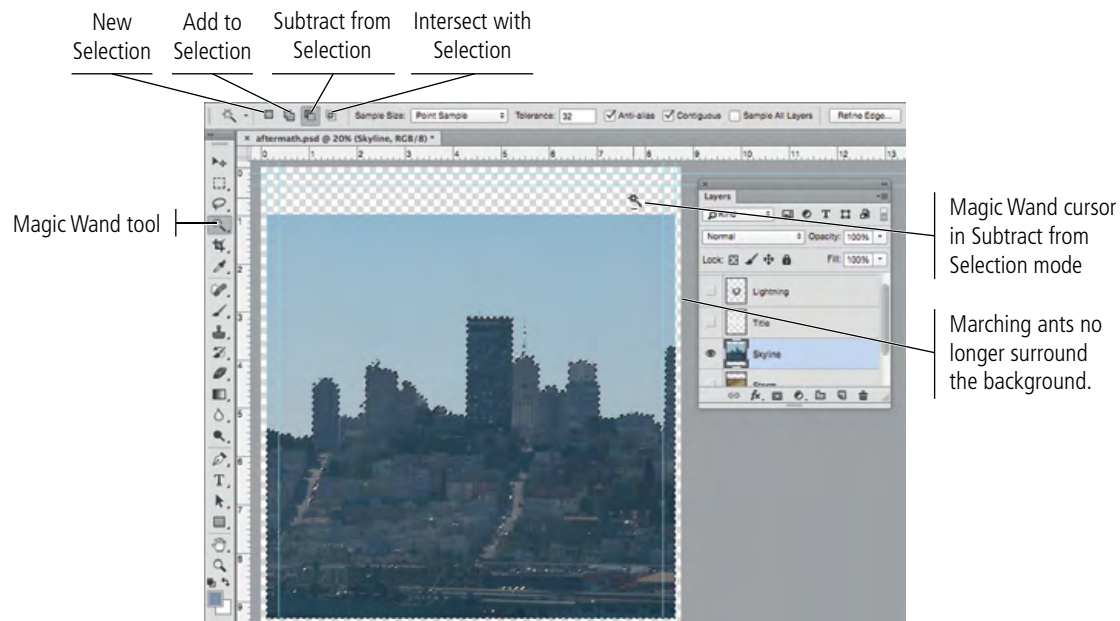
16. **In the Layers panel, click the Add Layer Mask button.**

A **layer mask** is a map of areas that will be visible in the selected layer. The mask you just created is a raster-based pixel m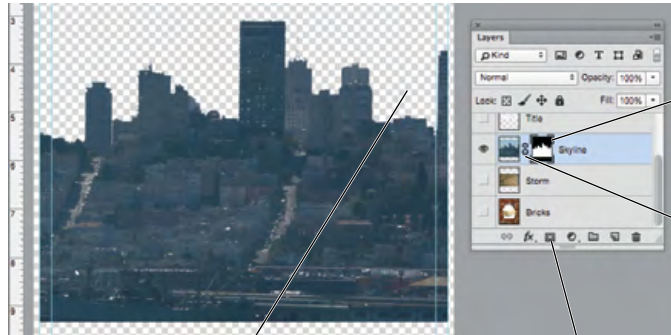ask, based on the active selection when you created the mask. This is a non-destructive way to hide certain elements of a layer without permanently deleting pixels; you can edit or disable the layer mask at any time.

The layer mask thumbnail shows the masked (hidden) areas in black.

As long as the mask is linked to the layer, the mask will move along with the layer. You can click this icon to unlink the layer from its mask.

On the masked layer, pixels outside the original selection are hidden.

Add Layer Mask button

17. **Control/right-click the mask thumbnail and choose Disable Layer Mask from the contextual menu.**

You have to click the mask thumbnail to open the contextual menu for the mask.
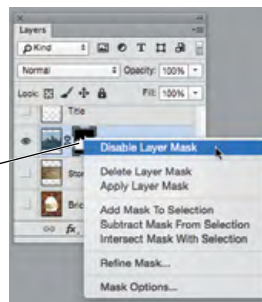
When you disable the mask, the background pixels are again visible. This is one of the advantages of using masks — the background pixels are not permanently removed, they are simply hidden.
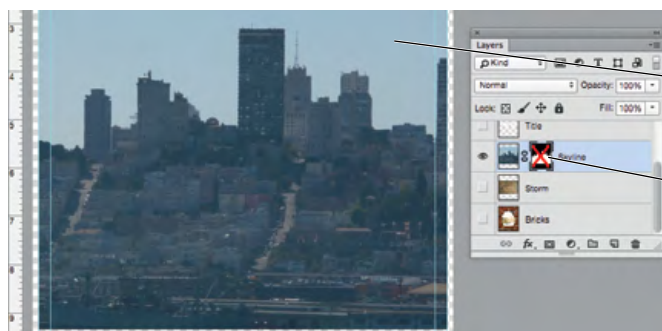
When the mask is disabled, the masked pixels are visible.

A red X indicates that the mask is disabled.

18. **Control/right-click the mask thumbnail and choose Apply Layer Mask from the contextual menu.**
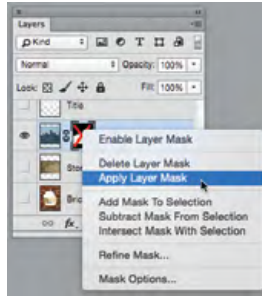
This option applies the mask to the attached layer, permanently removing the masked pixels from the layer.
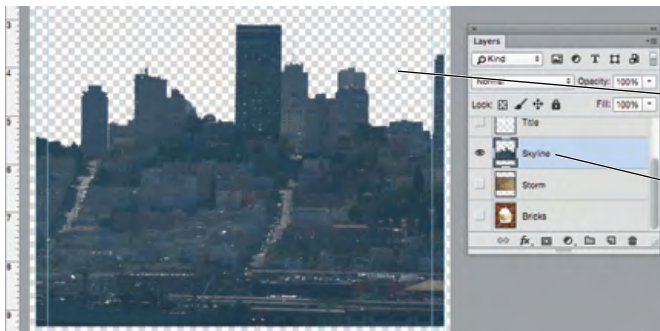
The masked pixels are permanently removed from the layer.

The mask is removed from the layer.

19. **Choose Edit>Undo Apply Layer Mask to restore the layer mask.**

As you saw in the previous step, applying a mask permanently removes the masked pixels. This essentially defeats the purpose of a mask, so you are restoring it in this step.

20. **Control/right-click the mask thumbnail and choose Enable Layer Mask from the contextual menu.**
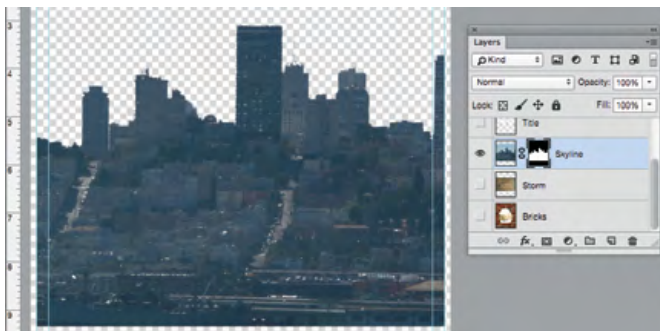
21. **Save the file and continue to the next exercise.**

EDIT A LAYER MASK

In the previous exercise, you created a mask based on a selected color range. Depending on how you clicked to select the color range, you might have small areas of selected color in the city area, or small areas of unselected color in the sky. Rather than trying to isolate small spots of color in the Color Range dialog box, you can manually edit the mask using the built-in painting tools.

1. **With `aftermath.psd` open, click the Skyline layer mask thumbnail to select it.**

These corner icons indicate that the base layer is selected.

Clicking the layer mask thumbnail selects the mask so you can edit it.

2. **In the Channels panel (Window>Channels), make the Skyline Mask channel visible.**

   Layer masks are not visible by default; you have to turn them on in the Channels panel to see them. This isn't strictly necessary, since you can paint a mask without seeing it, but it is easier (at least whe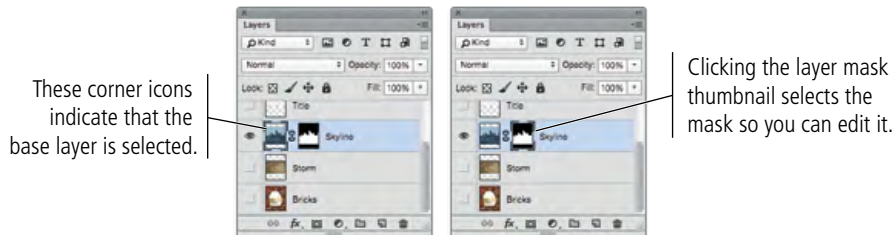n you're first learning) to be able to see what you're painting. By painting on a layer mask, you're not really "painting" anything; instead, you're actually "painting" the visibility of the associated layer.

Making the mask channel visible allows you to see the red overlay in the image.
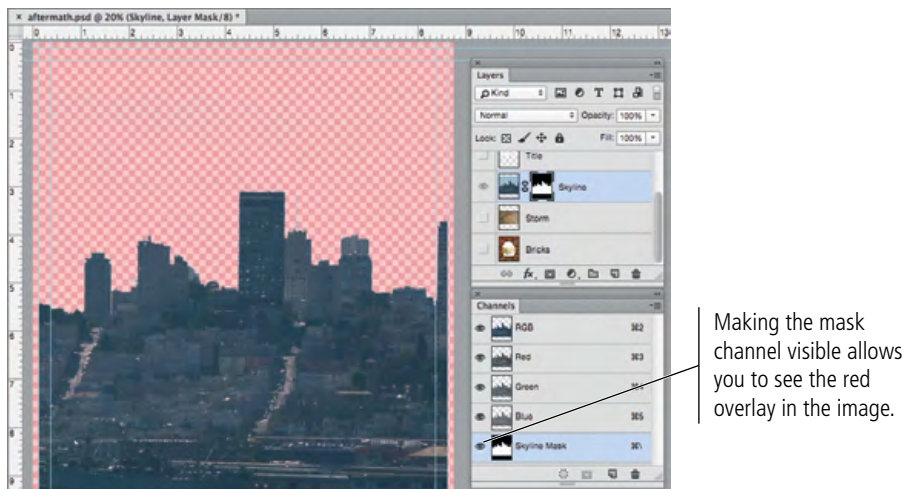
3. **In the Channels panel, double-click the Skyline Mask channel thumbnail. Change the Opacity value to 100% in the Layer Mask Display Options dialog box, then click OK.**
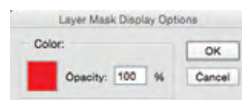
   Remember, this change only affects the transparency of the mask, not the degree of transparency applied to the layer. By setting the mask opacity to 100%, you know that anything solid red will be hidden and anything with no red will be visible.

4. **Carefully review the image to find any problems with the existing mask.**

Changing the mask opacity makes it easier to find areas in the sky that need to be masked, as well as areas in the city that need to be removed from the mask.

These areas should be added to the mask.

These areas should be removed from the mask.

5. **Choose the Brush tool in the Tools panel.**

6. **Click the Default Foreground and Background Colors button at the bottom of the Tools panel.**

If you look at the layer mask thumbnail for the layer, you can see it's just a black-and-white shape. White areas of the thumbnail show which parts of the layer are visible in 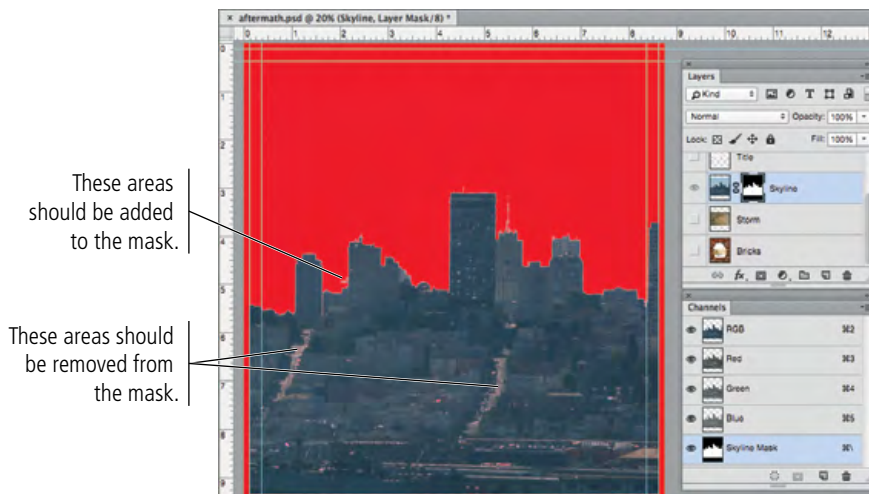the main document; the black parts of the mask hide the associated areas of the layer. This is an important distinction: painting with black on a layer mask hides those areas; painting with white on a layer mask reveals those areas.
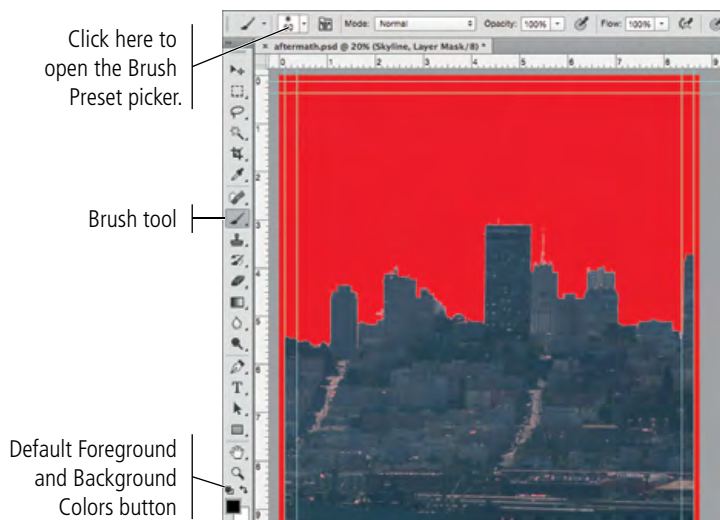
Click here to open the Brush Preset picker.

Brush tool

Default Foreground and Background Colors button

7. **In the Options bar, open the Brush Preset picker to access the tool options.**

This panel shows the different brushes that are included with Photoshop. The default brush set includes a number of specific-diameter hard- and soft-edge brushes, as well as some artistic options. A number below a brush icon shows the size of the brush; if you click a specific brush in the panel, the same number displays in the Size field.

8. **In the top half of the Brush Preset picker, change the Size value to `50 px` and change the Hardness value to `100%`.**
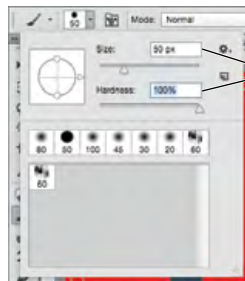
Define the brush size and hardness in theses fields.

9. **Press Return/Enter to dismiss the Brush Preset picker.**

10. **With the Brush tool active and Black as the active foreground color, click and drag over those pixels to add to the mask area.**

   The Brush tool paints with whatever is defined as the foreground color, which is black in this case. Remember: When painting on a mask, black adds to the mask and hides pixels on the masked layer.
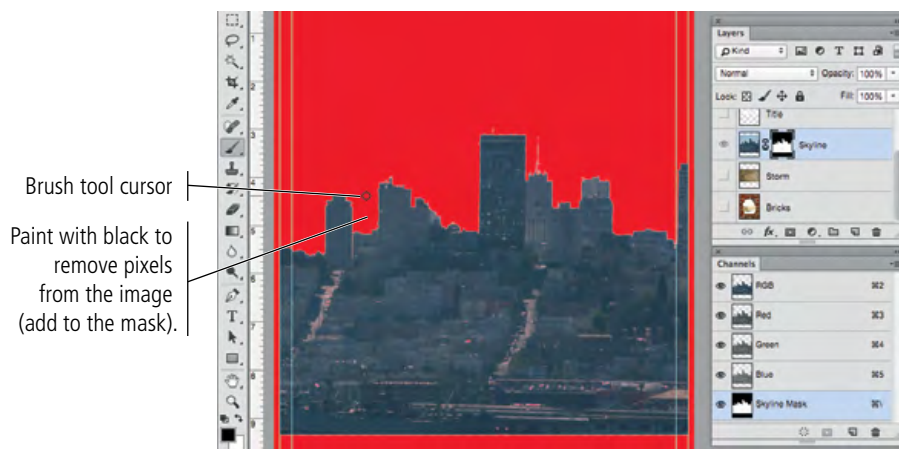
Brush tool cursor

Paint with black to remove pixels from the image (add to the mask).

11. **Click the Switch Foreground and Background Colors button near the bottom of the Tools panel.**

12. **Paint over any masked areas inside the city area.**

   Painting on a mask with white removes from the mask area, revealing the masked layer's pixels.

   As you paint to fine-tune a mask, keep the following points in mind:

   - You can use the bracket keys to enlarge (]) or reduce ([) the brush size.

   - You can press X to switch the current foreground and background colors. This is very useful to remember when you are painting on a mask, because you can reset the default (black and white) colors and switch them as necessary depending on what you want to accomplish.

Paint the mask with white to reveal areas.

The Brush tool cursor reflects the size of the brush.

Switch Foreground and Background Colors button

   - You can also use the Eraser tool on a mask. Be careful, though, because erasing an area of the mask when the foreground color is white has the same effect as painting with the background color.
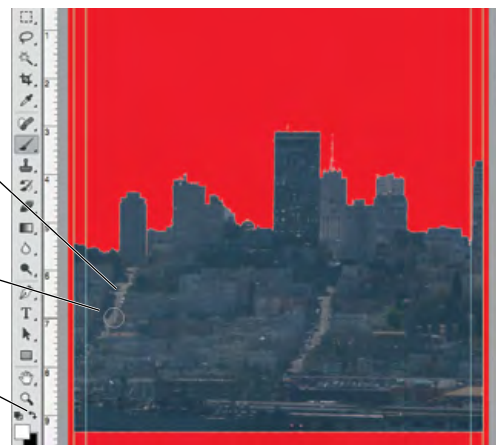
13. **Open the Properties panel (Window>Properties).**

The Properties panel contains different options for different types of selections. When a mask is available for the active layer, the panel shows options related to that mask. You can use the buttons at the top of the panel to select the mask on the active layer, or add a new vector mask.

The Density slider changes the opacity of the overall mask. If you reduce the density to 80%, for example, underlying layers will be 20% visible through the mask. (Don't confuse this with the opacity of an alpha channel, which only affects the appearance of the mask on screen.)

14. **In the Properties panel, change the Feather value to `25 px`.**

If you feather a selection and then make a layer mask from that selection, the feathering becomes a permanent part of the mask.

The Properties panel allows you to adjust the feathering of a hard-edge mask, and then later change or even remove the feathering if necessary, without painting on the mask.
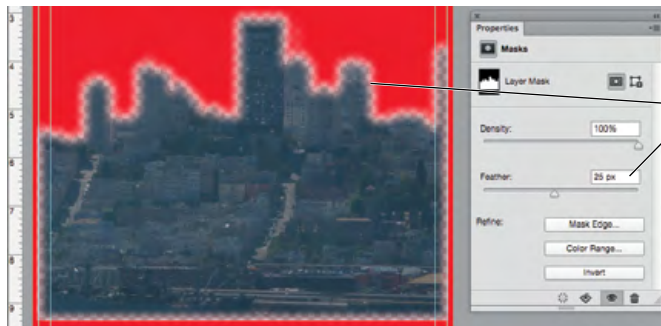
Use the Properties panel to feather the mask edge non-destructively.

15. **Change the Feather value to `1 px`.**

This small feathering value will help to remove (or at least minimize) any remaining background artifacts around the edges of your mask.
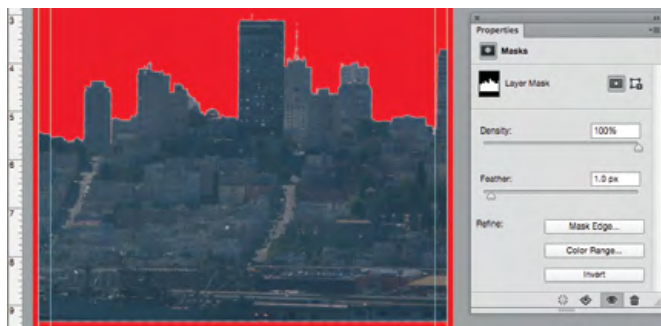
16. **Save the file and continue to the next exercise.**

MAKE AND REFINE A QUICK SELECTION

As you just saw, you can make selections based on the color in an image. This technique is useful when you want to select large areas of solid color, or in photos with significant contrast between the foreground and background. When the area you want to select has a complex edge, refining the selection edge can produce very detailed results.

1. **With aftermath.psd open, hide all but the Bricks layer. Click the Bricks layer to select it as the active layer.**

2. **Choose the Quick Selection tool (nested under the Magic Wand tool).**

3. **In the Options bar, make sure the Sample All Layers option is not checked.**

    You only want to select the area in the bricks layer (the hole in the wall), so you do not want to make a selection based on the content of other layers in the file.

4. **Click at the top area of the hole in the wall and drag down to the bottom edge of the hole.**

    The Quick Selection tool essentially allows you to "paint" a selection. As you drag, the selection expands and automatically finds the edges in the image.

New Selection · Add to Selection · Subtract from Selection · Click to change the brush size and attributes.

Quick Selection tool

Click here...

...and drag to here.

Marching ants surround the selected area.

5. **Click the Refine Edge button in the Options bar.**
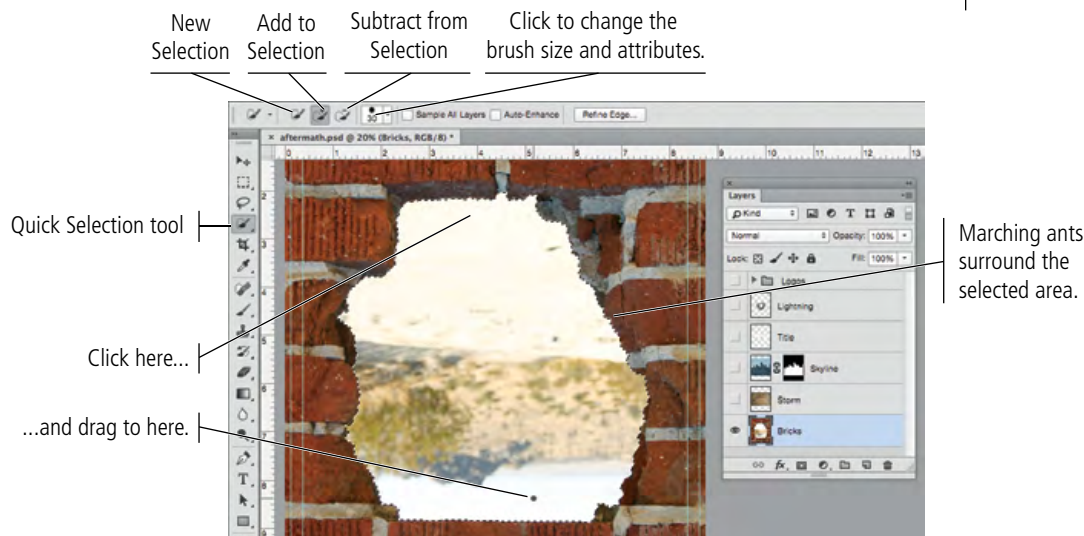
6. **Click the View button. Choose the On White option from the menu if it is not already selected.**

    The preview options allow you to change the way your image appears in the document window while you refine the edges within the dialog box.

    - **Marching Ants** shows the basic standard selection.
    - **Overlay** shows the unselected areas with a Quick Mask overlay.
    - **On Black** shows the selection in color against a black background.
    - **On White** shows the selection in color against a white background.
    - **Black & White** shows the selected area in white and the unselected area in black.
    - **On Layers** shows only the selected area; unselected areas are hidden.
    - **Reveal Layer** shows the entire layer, with no visual indication of the selection.
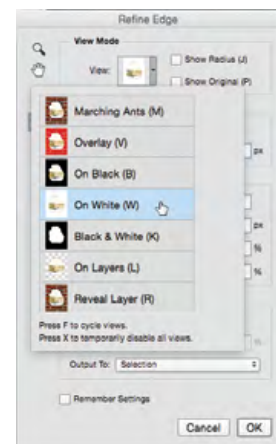
7. **Experiment with the adjustments until you're satisfied with the selection edge.**

You want to include a small amount of darkness around the edge so that when you invert the selection to remove the hole in the wall, there is no light halo effect left by the selection edge. We used the Shift Edge slider to slightly expand the selection edge.

- **Radius** is the number of pixels around the edge that are affected. Higher radius values (up to 250 pixels) improve the edge in areas of fine detail.

- **Smooth** reduces the number of points that make up your selection and, as the name suggests, makes a smoother edge. You can set smoothness from 0 (very detailed selection) to 100 (very smooth selection).

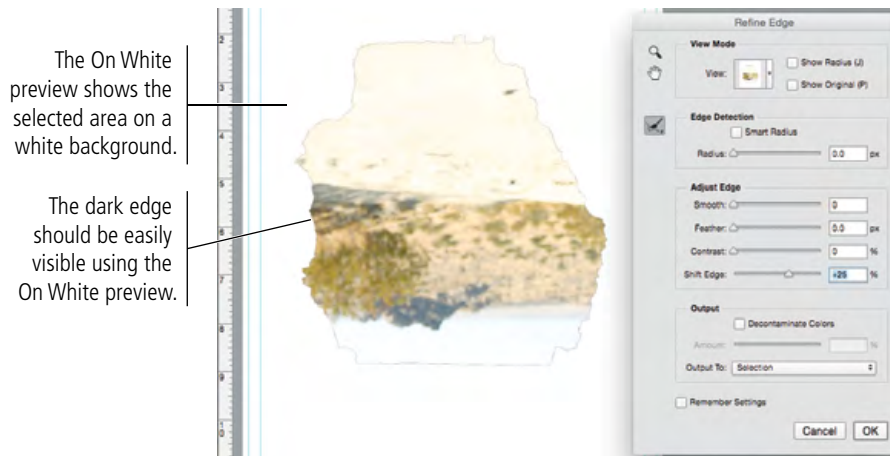- **Feather** softens the selection edge, resulting in a transition that does not have a hard edge (in other words, blends into the background). You can feather the selection up to 250 pixels.

- **Contrast** is the degree of variation allowed in the selection edge. Higher Contrast values (up to 100%) mean sharper selection edges.

- **Shift Edge** shrinks or grows the selection edge by the defined percentage (from –100% to 100%).

- **Decontaminate Colors** can be checked to remove a certain percentage of color from the edge of a selection.

The On White preview shows the selected area on a white background.

The dark edge should be easily visible using the On White preview.

8. **At the bottom of the dialog box, choose the Layer Mask option in the Output To menu.**

This menu can be used to create a new layer or file (with or without a mask) from the selection. You want to mask the existing layer, so you are using the Layer Mask option.
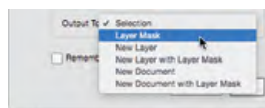
9. **Click OK to accept your refined selection.**

The resulting layer mask hides areas that were not selected.
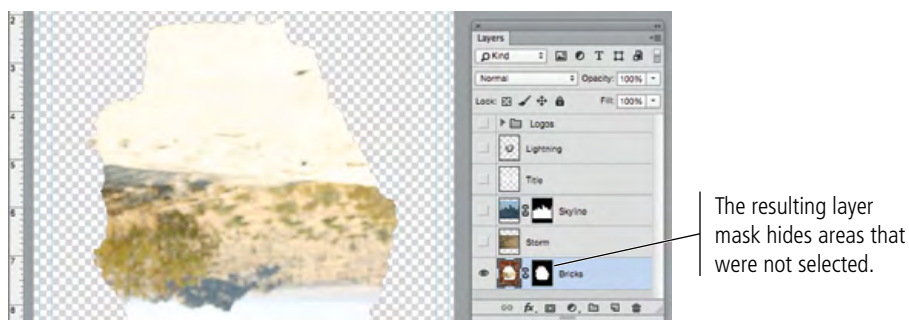
10. **Click the mask thumbnail in the Layers panel to select only the mask, and then open the Properties panel (Window>Properties).**

    As you know, you want to remove the hole in the wall and not the wall. You selected the area in the hole to create the mask, but you now need to invert the mask.

    Like the Options bar, the Properties panel is contextual. Different options are available in the panel depending on what is selected in the Layers panel.

    When a layer mask is selected, you can manipulate a variety of properties related to the selected mask. (You will use different aspects of the Properties panel in later projects.)

11. **In the Properties panel, click the Invert button.**

    This button reverses the mask, so now only the bricks are visible.

The layer mask must be selected in the Layers panel.

The Properties panel can be used to edit the selected mask.

12. **Save the file and continue to the next exercise.**

ARRANGE LAYER POSITION AND STACKING ORDER

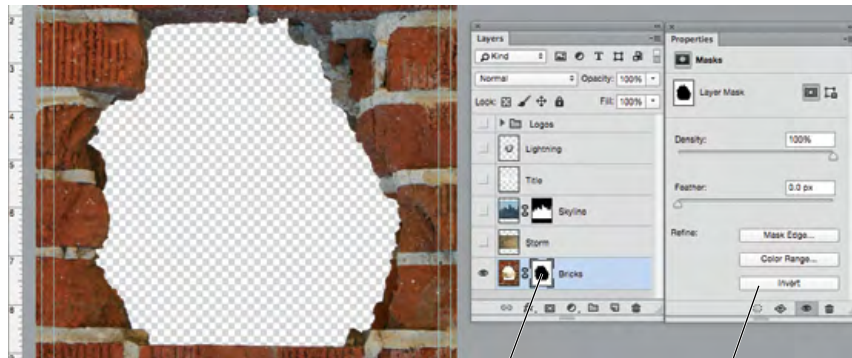The ad is almost final, but a few pieces are still not quite in position. You already know you can use the Move tool to move the contents of a layer around on the canvas. You can move a layer to any position in the **stacking order** (the top-to-bottom position of a layer) by simply dragging it to a new position in the Layers panel.

1. **With aftermath.psd open, make all layers visible.**

2. **Click the Bricks layer in the Layers panel and drag up. When a heavy bar appears below the Title layer, release the mouse button.**

The heavy line indicates where the layer will be positioned when you release the mouse button.
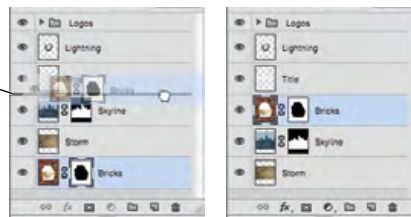
Be careful when dragging layers near a layer group: If the border appears around a layer group, releasing the mouse button would place the dragged layer inside of the group.

3. **Repeat the process to move the Lightning layer below the Skyline layer.**

Note:

Press Command/ Control-[(left bracket) to move a layer down in the stacking order.

Press Command/ Control-] (right bracket) to move a layer up in the stacking order.

4. **Choose the Move tool, and check the Auto-Select option in the Options bar. Open the attached menu (to the right of the Auto-Select check box) and choose Layer.**

   When Layer is selected in the Auto-Select menu, only the relevant layer will move even if it is part of a layer group. If you want all layers in a group containing the selected layer to move, you can choose Group in the menu.

5. **In the document window, click any pixel in the movie title and drag down until the title appears in the bottom half of the canvas.**

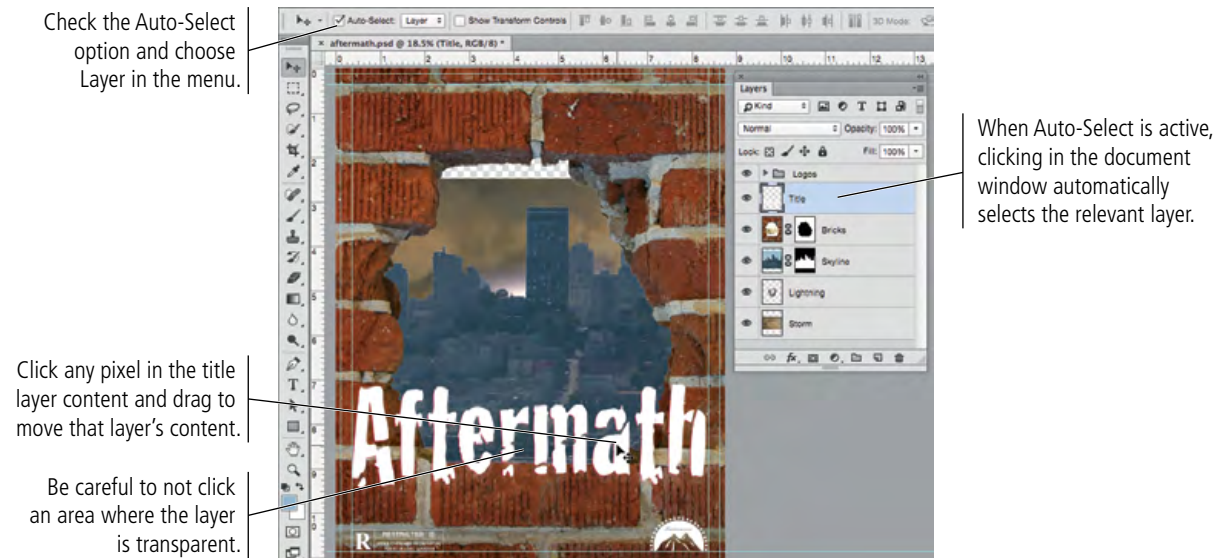   Your layers should appear in the same order as shown in the following image, with the Logos layer group at the top of the layer stack.

   Check the Auto-Select option and choose Layer in the menu.

   When Auto-Select is active, clicking in the document window automatically selects the relevant layer.

   Click any pixel in the title layer content and drag to move that layer's content.

   Be careful to not click an area where the layer is transparent.

6. **If necessary, drag the Storm layer until the image fills any transparent area behind the bricks and skyline.**

   Make sure you click an area where no pixels from another layer are visible.

7. **With the Move tool still active, uncheck the Auto-Select option in the Options bar.**

8. **Click the Lightning layer in the Layers panel to select that layer. Click and drag in the document window to move the layer content so the lightning appears to strike one of the buildings.**

   Uncheck the Auto-Select option.

   When Auto-Select is not active, remember to first select the layer you want to move.

   Note:

   When the Move tool is active, you can move the selected object or layer 1 pixel by pressing the Arrow keys. Pressing Shift with any of the Arrow keys moves the selected object/layer by 10 pixels.
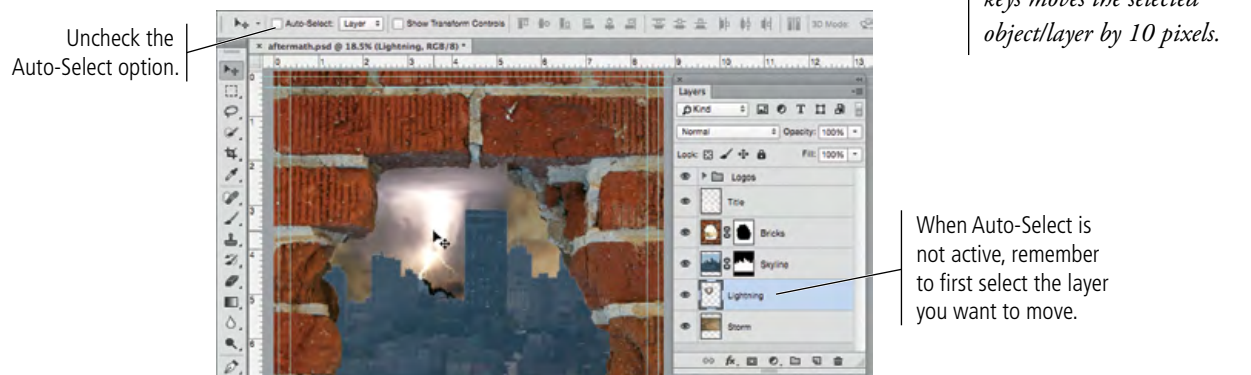
9. **Save the file and continue to the final stage of the project.**

Filtering Layers

When you work with complex files, you might find yourself with dozens — or even hundreds — of layers. Descriptive names can help you navigate through the layers, but you still have to scroll through the panel to find what you need.

Layer filtering, available at the top of the Layers panel, allows you to narrow down the panel to only layers that meet certain criteria — making it much easier to locate a specific layer.

Use this menu to filter layers by kind, name, effect, mode, attribute, or color.

Filter for:

Smart objects

Shape layers

Type layers

Adjustment layers

Pixel layers

When **Kind** is selected in the menu, you can use the associated buttons to show only certain types of layers (adjustment layers, smart objects, etc.).
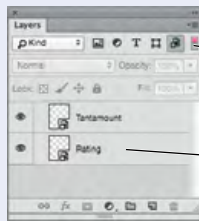
Use this switch to turn filtering on and off.

Only layers matching the applied filter appear in the panel.

When **Name** is selected, you can type in the attached field to find layers with names that include the text you enter in the field. The defined text string does not need to be at the beginning of the layer name; for example, typing "ti" would return both Rating and Title layers in the file for this project.
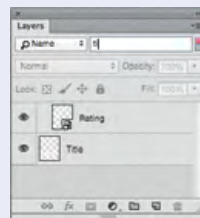
When **Effect** is selected, you can use the secondary menu to find only layers with a specified effect (applied using the Layer>Layer Style submenu).
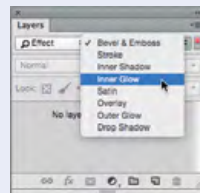
When **Attribute** is selected, you can choose from a number of layer attributes — visible, linked, clipped, masked, etc.
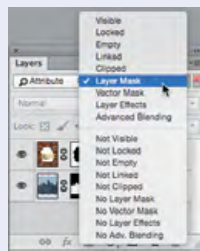
When **Color** is selected, you can choose any of the built-in colors from the secondary menu. (These colors, which appear around the layer's visibility icon, can be assigned to individual layers in each layer's contextual menu.)

When **Mode** is selected, you can use the secondary menu to find only layers to which a certain blending mode has been assigned.
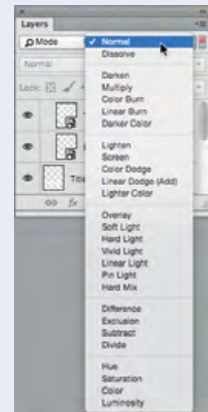
When **Smart Object** is selected, you can use the buttons at the top of the panel to find linked layers, layers with modified source data, layers with missing source data, or embedded layers. These buttons are non-exclusive, which means you can select more than one option at a time (for example, all layers with missing and modified source data).
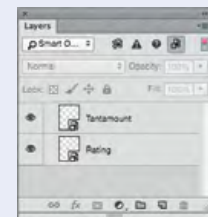
The **Selected** option shows a subset of layers that exist in Isolation mode, a new option in Photoshop CC. To create a subset, select one or more layers in the Layers panel and then choose Select>Isolate Layers. The Layers panel automatically shows a subset of only the selected layers, and Selected appears in the Filter By menu.
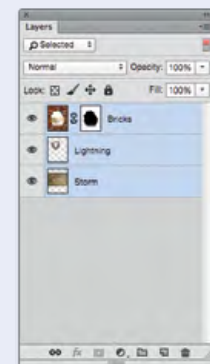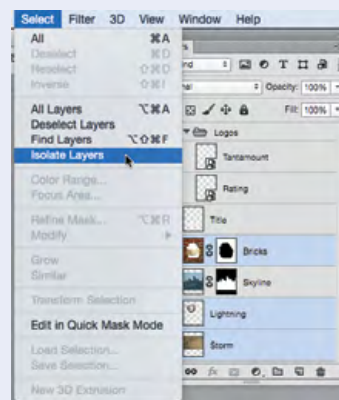
Stage 4 Saving Photoshop Files for Print

At the beginning of the project, you saved this file in Photoshop's native format (PSD). However, many Photoshop projects require saving the completed file in at least one other format. Many artists prefer to leave all files in the PSD format since there is only one file to track. Others prefer to send only flattened TIFF files of their artwork because the individual elements can't be changed. Ultimately, the format (or formats, if the file is being used in multiple places) you use will depend on where and how the file is being placed.

Many Photoshop projects are pieces of a larger composition; the overall project defines the format you need to use when you save a complete project. The ad you just created, for example, will be placed in magazine layouts, which will be built in a page-layout application such as Adobe InDesign. Although the current versions of both industry-standard page-layout applications can support native layered PSD files, older versions can't import those native files. As the Photoshop artist, you have to save your work in a format that is compatible with the magazine layout.

As you know, the ad you created will be placed in multiple magazines, and different publishers have provided different file requirements. You need to save two different versions of the ad to meet those requirements.

Photoshop can save files in a number of commonly used formats, including:

- **Photoshop**, with the extension PSD, is the native format.

- **Photoshop EPS** can maintain vector and raster information in the same file, and can maintain spot-color channels.

- **JPEG** is a lossy compressed file format that does not support transparency.

- **Large Document Format**, using the extension PSB, is used for images larger than 2 GB; this format supports all Photoshop features including transparency and layers.

- **Photoshop PDF** can contain all required font and image information in a single file, which can be compressed to reduce file size.

- **Photoshop Raw** supports CMYK, RGB, and grayscale images with alpha channels, and multichannel and LAB images without alpha channels; this format does not support layers.

- **PNG** is a raster-based format that supports both continuous-tone color and transparency. It is sometimes used for print applications, but is more commonly used in digital publishing (specifically, Web design).

- **TIFF** is a raster-based image format that supports layers, alpha channels, and file compression.

SAVE A LAYERED TIFF FILE

Some software that can't use native PSD files can use layered TIFF files, which allow you to maintain as much of the native information as possible in the resulting file.

1. **With `aftermath.psd` open, choose File>Save As.**

2. **If necessary, navigate to your WIP>Movie folder as the target location.**

    The Save As dialog box defaults to the last-used location. If you continued the entire way through this project without stopping, you won't have to navigate.

3. **In the Save As field, type `_layered` at the end of the current file name (before the .psd extension).**

4. **Click the Format menu and choose TIFF.**

5. **Make sure the Layers check box is selected in the lower half of the dialog box.**

Because this file contains layers, this option is probably checked by default. If your file contained alpha channels, annotations, or spot colors, those check boxes would also be available. The As a Copy check box can be used if you want to save multiple versions of the same file with different options (which you will do in the next exercise).
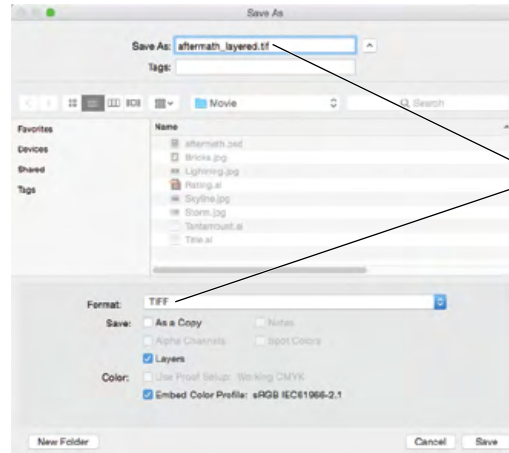
Choosing a different format automatically changes the file's extension.

6. **Leave the remaining options at their default values and click Save.**

7. **In the resulting TIFF Options dialog box, make sure the None image compression option is selected.**

TIFF files can be compressed (made smaller) using one of three methods:

- **None** (as the name implies) applies no compression to the file. This option is safe if file size is not an issue, but digital file transmission often requires files to be smaller than a full-page, multi-layered Photoshop file.

- **LZW** (Lempel-Ziv-Welch) compression is **lossless**, which means all file data is maintained in the compressed file.

- **ZIP** compression is also lossless, but is not supported by all desktop-publishing software (especially older versions).

- **JPEG** is a **lossy** compression scheme, which means some data will be thrown away to reduce the file size. If you choose JPEG compression, the Quality options determine how much data can be discarded. Maximum quality means less data is thrown out and the file is larger. Minimum quality discards the most data and results in a smaller file size.
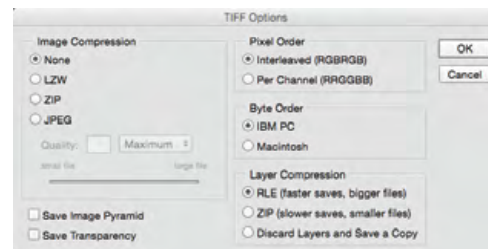
8. **Leave the Pixel Order radio button at the default value, and choose the Byte Order option for your operating system.**

Pixel Order determines how channel data is encoded. The Interleaved (RGBRGB) option is the default; Per Channel (RRGGBB) is called "planar" order.

Byte Order determines which platform can use the file, although this is somewhat deceptive. On older versions of most desktop-publishing software, Macintosh systems can read the PC byte order but Windows couldn't read the Macintosh byte order — which is why even the Macintosh system defaults to the IBM PC option. This option is becoming obsolete because most newer software can read either byte order.

Save Image Pyramid creates a tiered file with multiple resolution versions; this isn't widely used or supported by other applications, so you can typically leave it unchecked.

If your file contains transparency, the **Save Transparency** check box will be available. If you don't choose this option, transparent areas will be white in the saved file.

Note:

Some experts argue that choosing the order for your system can improve print quality, especially on desktop output devices.

9. **In the Layer Compression area, make sure the RLE option is selected.**

These three options explain — right in the dialog box — what they do.

10. **Click OK to save the file.**

    Photoshop warns you that including layers will
    increase the file size. If you don't see the warning, it's
    possible that someone checked the Don't Show Again
    check box. If you want to make sure that you see all warnings and messages, click Reset
    All Warning Dialogs in the General pane of the Preferences dialog box.
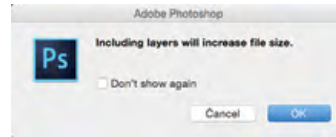
11. **Click OK to dismiss the warning and save the file.**

12. **Continue to the next exercise.**

SAVE A FLATTENED TIFF FILE

Magazines using older page-layout applications need files that no longer maintain the
layer information — called **flattened** files. You can flatten a file's layers manually using
the Layers panel Options menu, or simply flatten the file during the Save As process.

1. **With aftermath_layered.tif open in Photoshop, choose File>Save As.**

    If you continued directly from the previous exercise, this is the version you just saved. If
    you quit before you began this exercise, make sure you open the TIFF version and not
    the PSD version from your WIP>Movie folder.

    Assuming that you started this exercise with the TIFF file from the previous exercise, the
    format and file name extension already reflect the TIFF options.

2. **Uncheck the Layers check box.**

    The As a Copy box is now selected
    by default. A warning shows that the
    file must be saved as a copy when
    the Layers option is unchecked.
    This is basically a failsafe built into
    Photoshop that prevents you from
    overwriting your layered file with a
    flattened version.
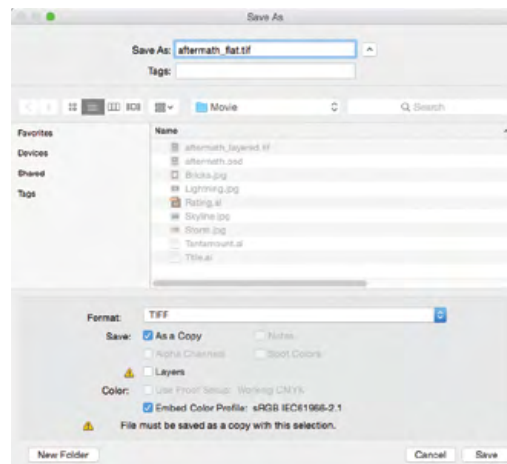
3. **In the Save As field, highlight
    the words "layered copy" and
    type flat.**

4. **Click Save. In the resulting TIFF Options dialog box, make sure the None
    compression option is selected and the Byte Order is set to IBM PC. At the
    bottom of the dialog box, make sure the Discard Layers and Save a Copy
    option is checked.**
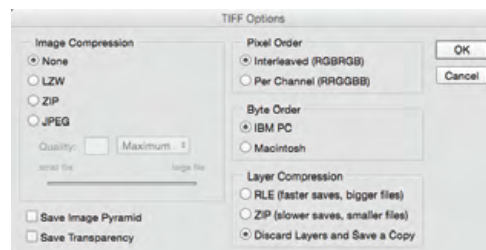
5. **Click OK to save the second version of the file.**

6. **When the save is complete, close the active file.**

fill in the blank

1. _____ is likely to cause degradation of a raster image when it's reproduced on a printing press.

2. A _____ is a linked file that you placed into another Photoshop document.

3. The _____ is context sensitive, providing access to different functions depending on what tool is active.

4. The _____ is the final size of a printed page.

5. The _____ tool is used to draw irregular-shaped selection marquees.

6. The _____ tool is used to select areas of similar color by clicking and dragging in the image window.

7. The _____ tool can be used to drag layer contents to another position within the image, or into another open document.

8. When selecting color ranges, the _____ value determines how much of the current color range falls into the selection.

9. A _____ can be used to non-destructively hide certain areas of a layer.

10. _____ is a lossy compression method that is best used when large file size might be a problem.

short answer

1. Briefly describe the difference between raster images and vector graphics.

2. Briefly explain three separate methods for isolating an image from its background.

3. Briefly explain the concept of a layer mask.

Portfolio Builder Project

Use what you learned in this project to complete the following freeform exercise.
Carefully read the art director and client comments, then create your design to meet the needs of the project.
Use the space below to sketch ideas; when finished, write a brief explanation of the reasoning behind your design.

Tantamount Studios is pleased with your work on the *Aftermath* ad, and they would like to hire you again to create the ad concept and final files for another movie that they're releasing early next year.

To complete this project, you should:

❏ Download the **Airborne_PSCC15_PB.zip** archive from the Student Files Web page to access the client-supplied title artwork and rating placeholder file.

❏ Find appropriate background and foreground images for the movie theme (see the client's comments at right).

❏ Incorporate the title artwork, logos, and rating placeholder that the client provided.

❏ Composite the different elements into a single completed file; save both a layered version and a flattened version.

The movie is titled *Above and Beyond*. Although the story is fictionalized, it will focus on the men who led the first U.S. Airborne unit (the 501st), which suffered more than 2,000 casualties in the European theater of World War II.

We don't have any other images in mind, but the final ad should reflect the time period (the 1940s) of the movie. The 501st Airborne was trained to parachute into battle, so you should probably incorporate some kind of parachute image.

This movie is a joint venture between Sun and Tantamount, so both logos need to be included in the new ad. It isn't rated yet, so please use the "This Movie Is Not Yet Rated" artwork as a placeholder.

Create this ad big enough to fit on an 8.5 × 11″ page, but keep the live area an inch inside the trim so the ad can be used in different-sized magazines.

project justification

Making selections is one of the most basic, and most important, skills that you will learn in Photoshop. Selections are so important that Photoshop dedicates an entire menu to the process.

As you created the movie ad in this project, you used a number of skills and techniques that you will apply in many (if not all) projects you build in Photoshop. You learned a number of ways to make both simple and complex selections — and you will learn additional methods in later projects. You also learned how to work with multiple layers, which will be an important part of virtually every Photoshop project you create, both in this book and throughout your career.

Composite images by dragging from one document to another

Transform a regular layer

Composite images by copying and pasting

Incorporate vector graphics into a raster image

Move layer content around on the canvas

Composite images by placing from Mini Bridge

Transform a Smart Object layer

Make a basic selection with a Marquee tool

Create a feathered selection to blend one layer into another

Create a silhouette using the Select Color Range utility

Create a silhouette using the Quick Selection tool

Refine a selection using the Refine Edges utility

Use a layer mask to hide pixels on a layer