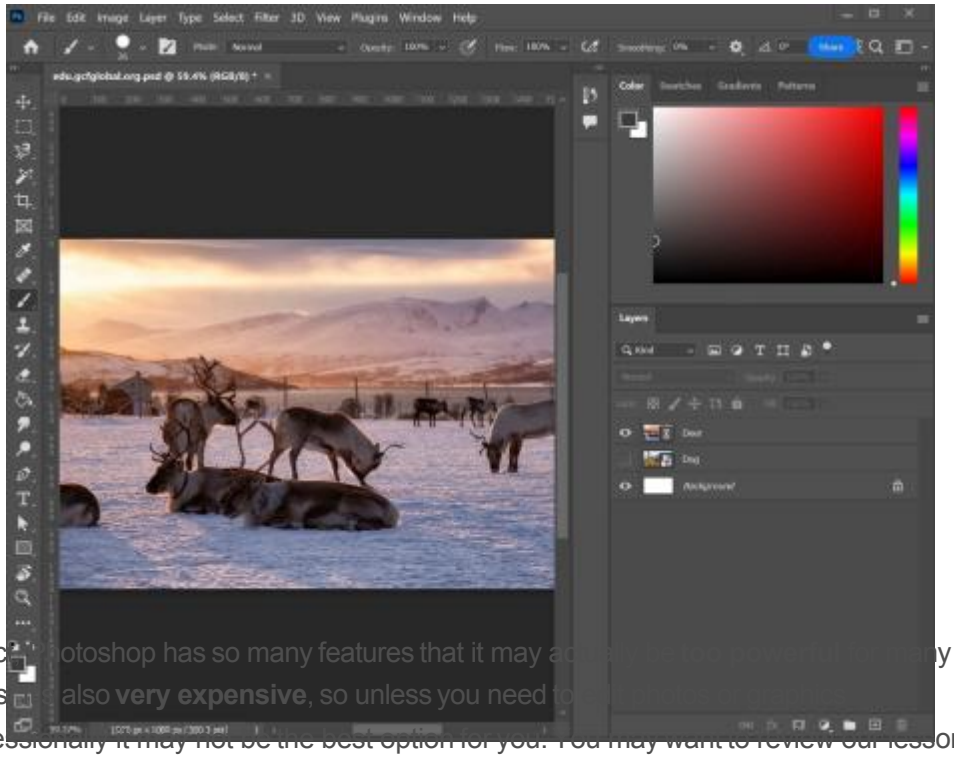
Photoshop Basics

What is Photoshop?

Even if you've never worked with images on your computer, you may have heard of Adobe Photoshop. Available for both Windows and Mac, Adobe Photoshop is an extremely powerful application that's used by many professional photographers and designers. You can use Photoshop for almost any type of **image editing**, from touching up photos to creating high-quality graphics.



In fact, Photoshop has so many features that it may actually be too powerful for many users. It's also **very expensive**, so unless you need to edit photos professionally it may not be the best option for you. You may want to review our lesson on **Photoshop alternatives** to learn about other image editing programs you can use.

About this tutorial

Because Photoshop is primarily designed for professionals, it can be somewhat

challenging to use, especially if you're learning it for the first time. However, you don't need to understand all of Photoshop's features to use it effectively. Throughout this

tutorial, we'll help you understand the most basic and essential Photoshop skills. We'll also provide links to other tutorials if you want to learn more about advanced tools and techniques.

We'll be using **Photoshop CC** throughout this tutorial to show you Photoshop's features. If you're using an older version of Photoshop—like Photoshop CS6 or earlier—some features may work a bit differently, but you should still be able to follow along. However, if you're using Photoshop Elements, it's important to note that some of the features we cover may be missing or work in a different way. We'll talk more about Photoshop Elements in the next lesson.

Lesson 2: Buying Photoshop

Buying Photoshop

If you're thinking about purchasing or upgrading to the latest version of Adobe Photoshop, there are some important things to consider before you buy. For example, you'll need to learn more about the different purchasing options and choose the version of Photoshop that's right for you.

Photoshop purchasing options

If you're interested in buying Photoshop, you have several options to choose from:

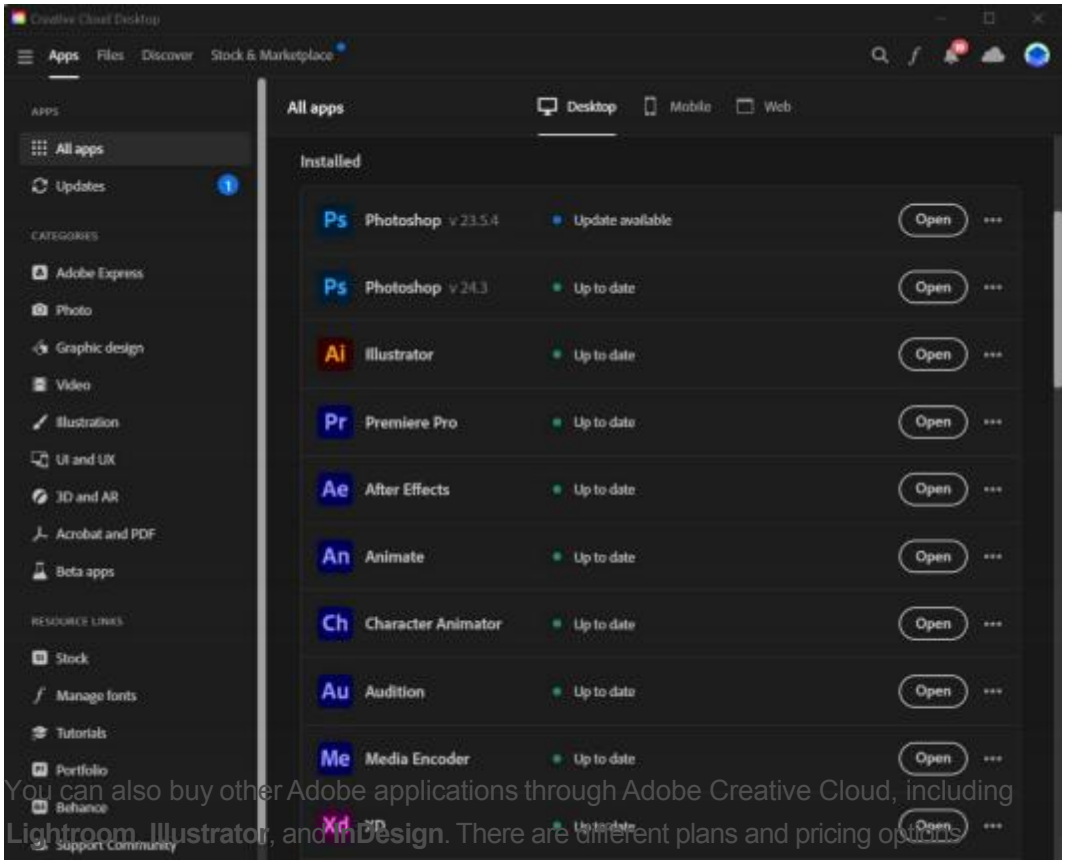
- **Photoshop CC**: If you want to buy the full version of Photoshop, you'll need to pay a monthly subscription fee for **Adobe Creative Cloud**. Photoshop CC is available for both Windows and Mac.
- **Photoshop Elements**: If you don't need all of the features of the full version of Photoshop, you might consider buying **Photoshop Elements** instead. Photoshop Elements is available for both Windows and Mac.
- **Mobile apps**: If you want to edit photos on the go, there are a few Photoshop mobile apps available for iOS and Android. However, most of these apps may be less powerful and offer less control than the full desktop version.
- **Alternative software**: If you don't need all of Photoshop's features—or if you're trying to save money—there are many other image editing applications you can use. You can review our lesson on **Photoshop**

alternatives to learn more about some free and low-cost applications you might be able to use instead.

Adobe Creative Cloud and Photoshop CC

Unlike many other applications you may have used, you cannot buy a boxed copy of Photoshop CC. Instead, you'll need a subscription plan through **Adobe Creative Cloud**, Adobe's cloud-based software service. Then, you'll download Photoshop CC to your computer. A Creative Cloud subscription includes other benefits, including **cloud-based storage** for your Photoshop projects. You'll also receive the newest version of Photoshop whenever it's made available, so you'll never have to worry about upgrading to the most recent version.

You can purchase a **monthly or annual subscription** to Creative Cloud. Previously, you could purchase a boxed copy of Photoshop without a subscription, but it would typically be pricey. While this means the cost of entry for using Photoshop is much lower than it was in the past, keep in mind that this subscription fee will add up over time, especially if you plan to keep the subscription for several years.



You can also buy other Adobe applications through Adobe Creative Cloud, including **Lightroom**, **Illustrator**, and **InDesign**. There are different plans and pricing options available depending on your needs. Visit **this page** for more information on purchasing

a Creative Cloud subscription. If you still have questions about how Creative Cloud works, you can visit Adobe's **Creative Cloud FAQ page**.

Photoshop Elements

If you don't need all of Photoshop's features, you might consider purchasing **Photoshop Elements** instead. You can think of Photoshop Elements as **Photoshop Light**. It gives you access to some of the most popular features from the full version, but it **generally costs less than $100** and **does not require a subscription**. If you don't have a lot of previous experience with image editing, Photoshop Elements may be a good option for you.

Below, you'll find a list of some of the main limitations of Photoshop Elements. These are somewhat **advanced features**, which is why they're not included in this version. If you've never heard about some of the things we mention below, don't worry—we'll cover several of them throughout the tutorial.

- **Adjustment layers**: Elements has a limited selection of **adjustment layers**. For example, you won't be able to create a **Curves** adjustment layer, though it does have a similar feature you can use.

- **Layer masks**: Elements does not allow you to create **layer masks**. However, you will be able to edit layer masks for adjustment layers. You'll also be able to edit existing layer masks when working with files created in the full version of Photoshop.
- **Layer groups**: Elements does not allow you to create **new layer groups**. However, you will be able to view existing groups when working with files created in the full version of Photoshop.
- **Color options**: Elements does not include as many advanced options for adjusting color, like the **Channels** panel. It also has limited support for working with **different color profiles** and **color spaces** (such as **CMYK**).
- **Drawing tools**: Elements does not include several of the commonly used vector-based drawing tools found in Photoshop, like the **Pen** tool and **Paths** panel.
- **8-bit mode**: Elements is mostly limited to photos that use **8-bit mode**; it offers very little support for 16- and 32-bit modes, which many photographers use to get even higher-quality photos. However, 8-bit mode still offers a high level of quality—it's actually the mode most digital cameras use—so for many people this will not be a major limitation.

Photoshop for mobile devices

If you want to edit photos on the go, Adobe offers **mobile apps**. They vary in both features and price, but you should be able to find one that meets your needs:

- **Adobe Photoshop Express**: Available for iOS, Android, and Windows Phone, this free app allows you to make quick changes to your photos, like **cropping** and **applying simple filters**. You can also purchase additional feature packs for a small price.
- **Photoshop CC on iPad**: This app is just as powerful and fully-featured as the desktop version of Photoshop, but there are some **system requirements**. It might be worth looking into if you enjoy working on your iPad.

Lesson 3: Photoshop Alternatives

Photoshop alternatives

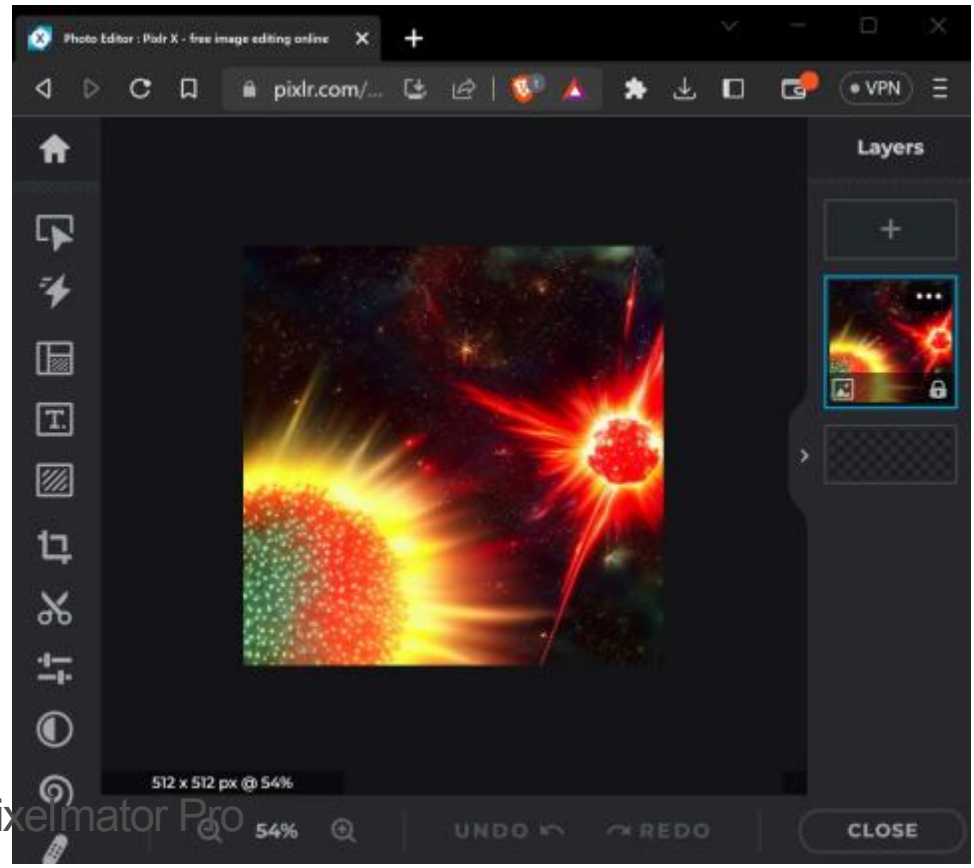
While Photoshop is an extremely powerful application, it's also expensive. Fortunately, there are many **free** and **low-cost** applications that include tools like those found in Photoshop. You can learn more about some of the most popular **Photoshop alternatives** below.

Keep in mind that none of these applications will include all of the features found in Photoshop. While you may be able to use one of these applications to follow along with the rest of this tutorial, it's important to note that many of the features covered may be missing or work in a different way.

> If you only need to make simple adjustments to your photos, like cropping and resizing, you may want to try using a more basic image editor. To learn more, review our **image editing software** lesson from our **Image Editing 101** tutorial.

Pixlr

The **Pixlr Editor** is a free application that runs in your web browser. It includes many advanced features and in many ways is similar to Photoshop. For quick edits, Pixlr also has a basic version called **Pixlr X**, and a **mobile app** for iOS and Android.



Pixelmator Pro

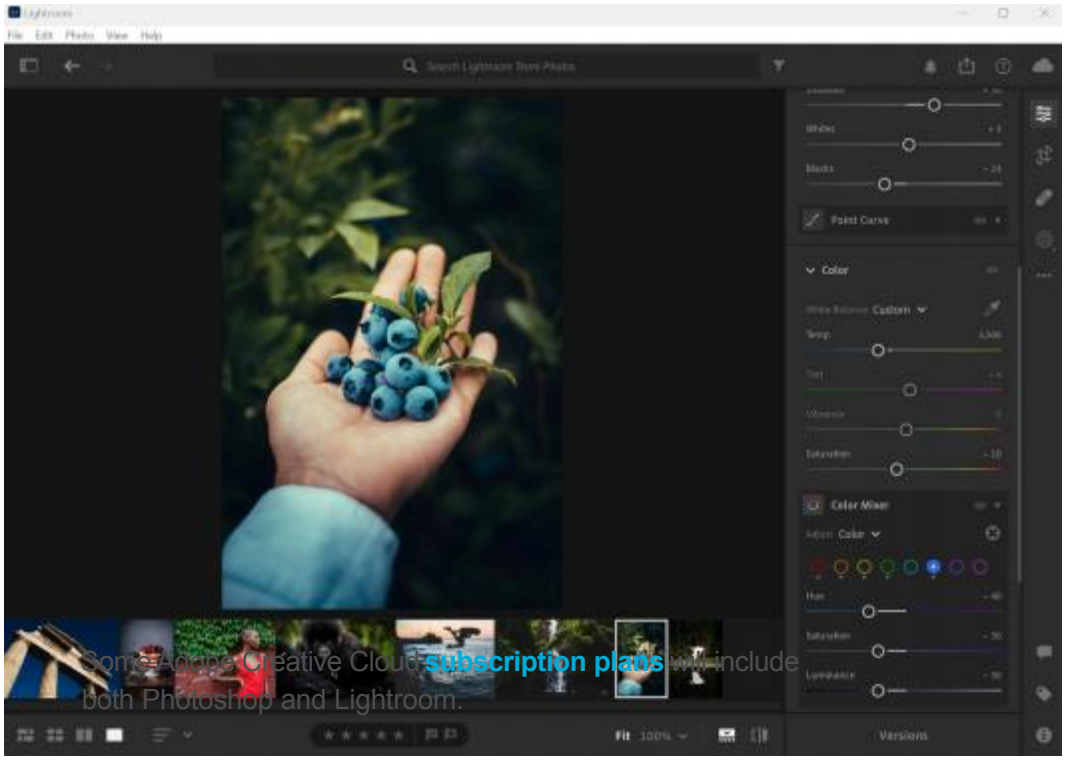
While it's only available for Mac, **Pixelmator Pro** includes many of the advanced features found in Photoshop and usually costs less than $50.

GIMP

Designed as an open-source alternative to Photoshop, **GIMP** is **free to use** on both Windows and Mac. Although it's a powerful application, you may find the interface confusing and difficult to use if you aren't somewhat familiar with other image editing software.

Photo management software

Many professional photographers prefer to use a **photo management application**, like **Adobe Lightroom**, **Microsoft Photos**, or **Apple Photos**. With organizational tools like **tagging** and **folders**, these applications make it easy to view and manage lots of photos. Conveniently, they also include many **editing tools**, which means you can use a single application for all of your image editing needs.



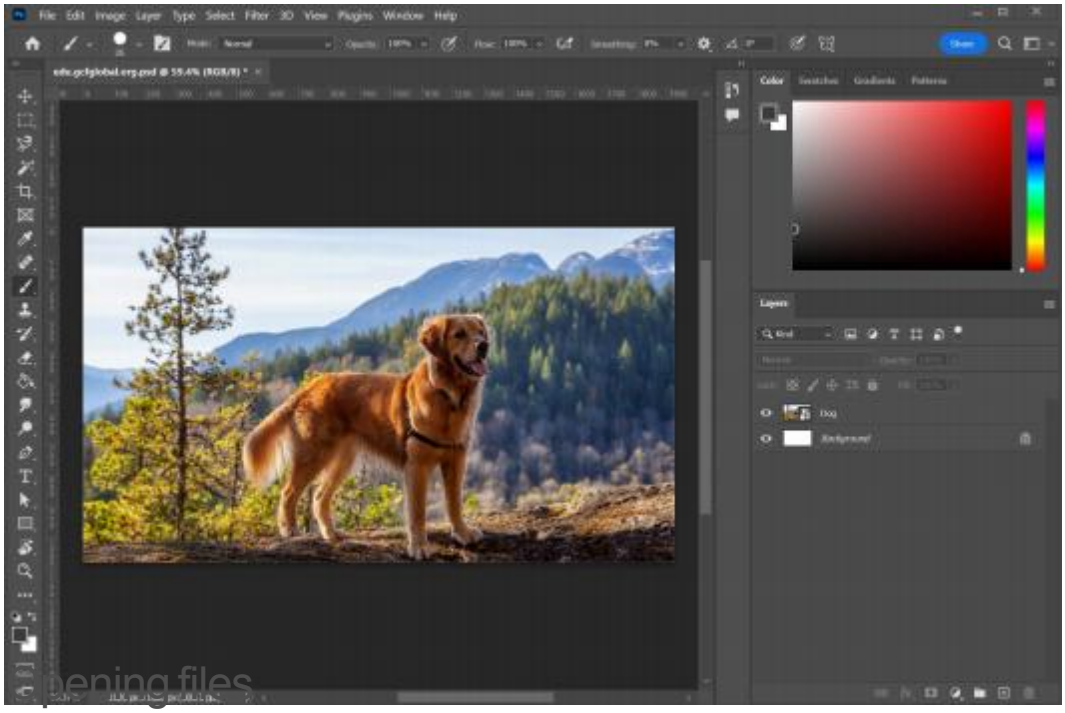
Lesson 4: Getting to Know the Photoshop Interface

Getting to know the interface

You can use Photoshop for almost any type of **image editing**, from touching up photos to creating high-quality graphics. In this lesson, we'll introduce you to the Photoshop **interface**, including how to **open files**, work with **panels**, **customize the workspace**, and **change the display size**.

Photoshop is a complex application, and it can feel a bit intimidating to use at first. Because of this, we recommend following along with the lesson by downloading our **example file** (right-click the link to save it). The more hands-on experience you have with Photoshop, the easier it will be to use.

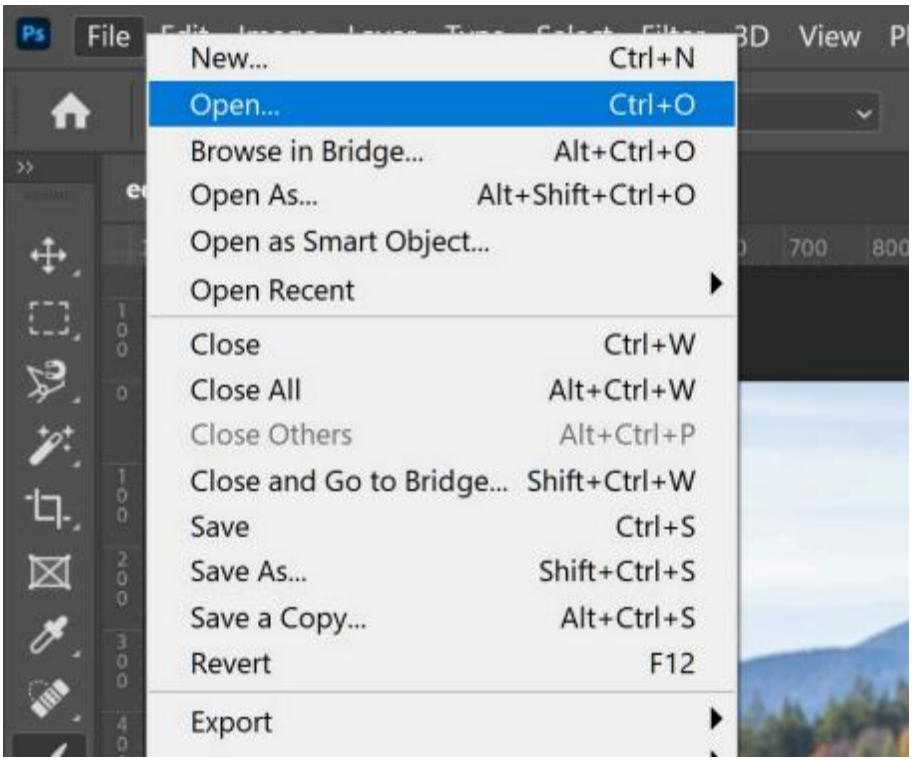
We'll be using **Photoshop CC** throughout this tutorial to show you Photoshop's features. If you're using an older version of Photoshop—like Photoshop CS6 or earlier—some features may work a bit differently, but you should still be able to follow along. However, if you're using Photoshop Elements, it's important to note that some of the features covered may be missing or work in a different way.



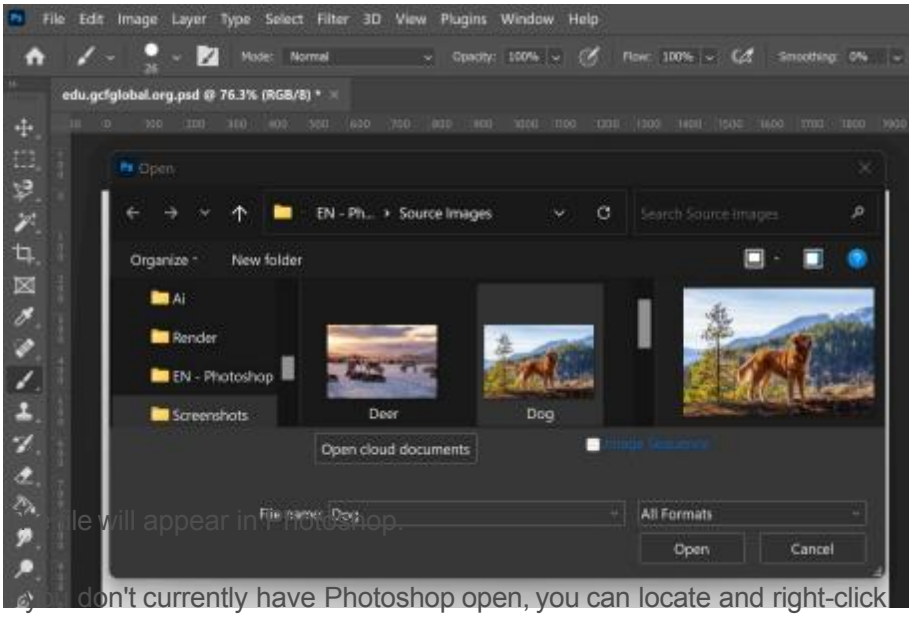
pening files

Most of the time, you'll want to start by **opening an existing photo** rather than creating a new blank image. Photoshop allows you to open and edit existing image files, including **JPEG**, **PNG**, and **PSD** (Photoshop document) files.

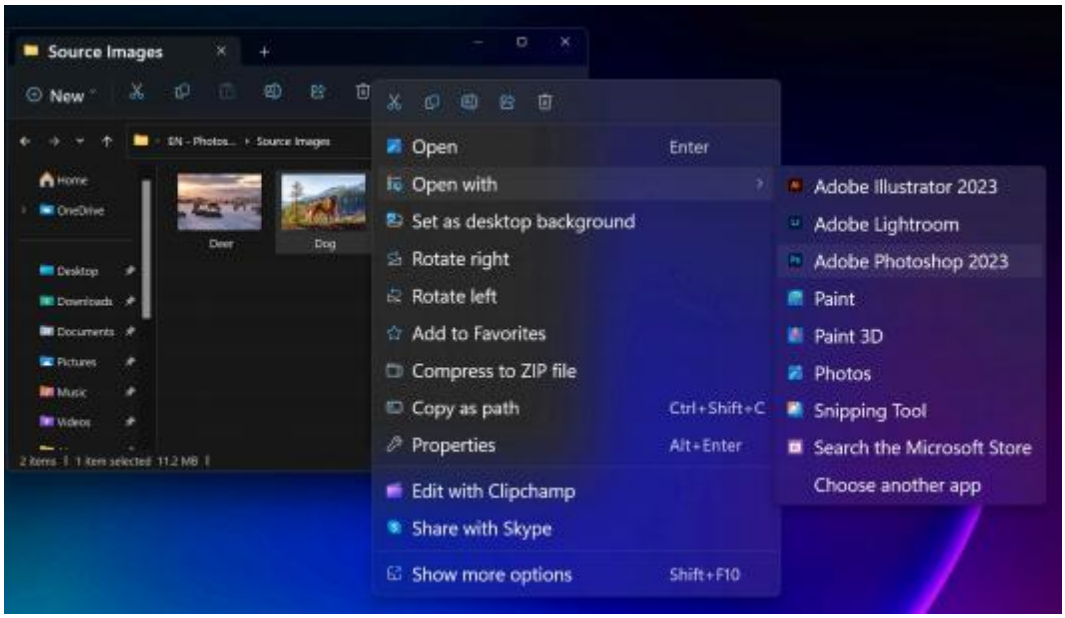
1 To open a file, select **File > Open**.



2 A dialog box will appear. Locate and select the file on your computer, then click **Open**.



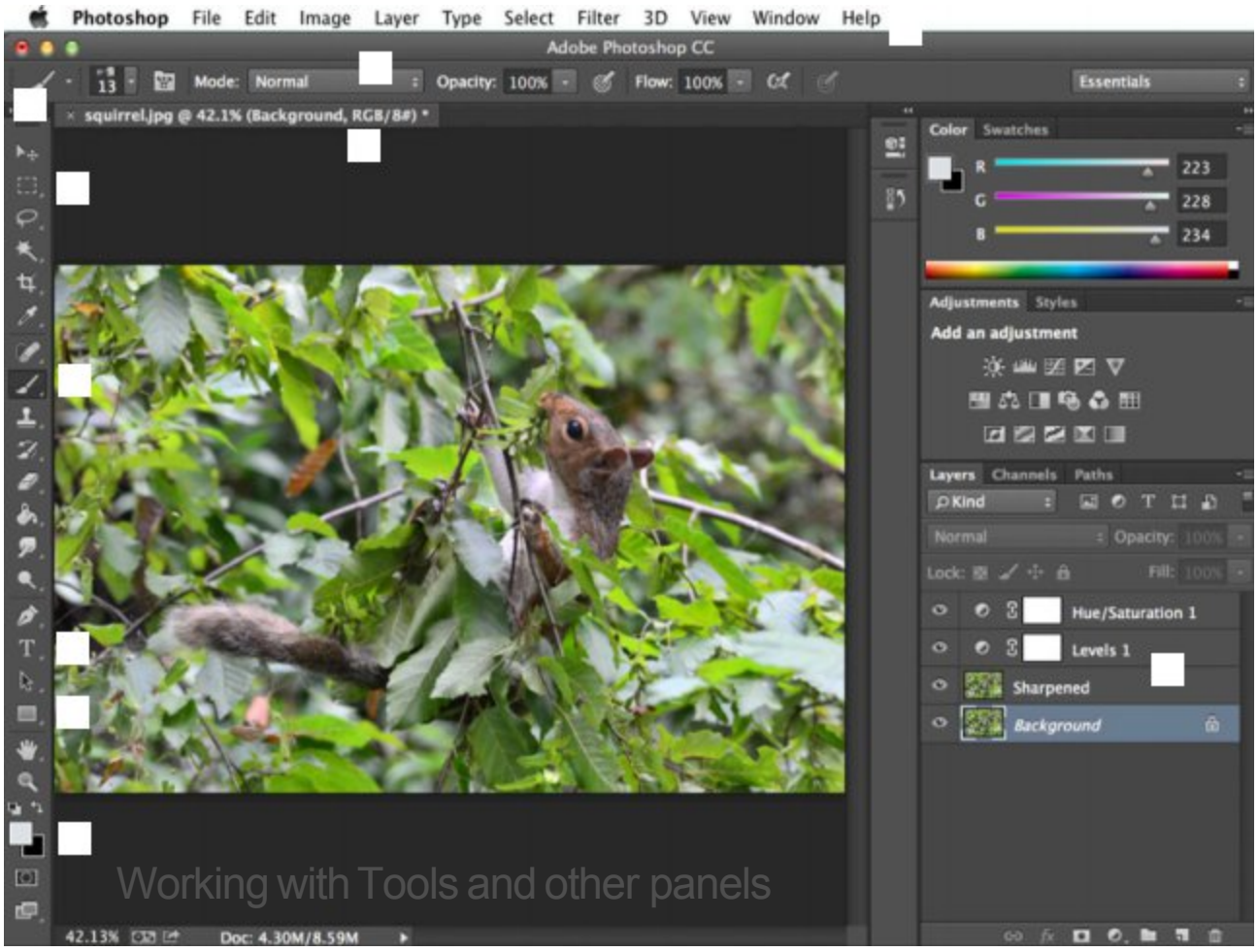
If you don't currently have Photoshop open, you can locate and right-click the file on your computer and choose **Open With > Adobe Photoshop** to open the file.



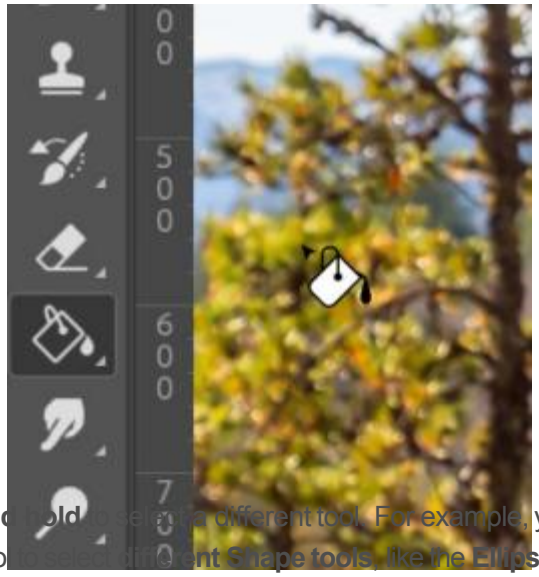
Overview of the Photoshop interface

Because Photoshop is designed primarily for professional use, the **interface** may feel a bit complex and intimidating for new users. Even if you have some experience with other image editing software, it's a good idea to become familiar with its main elements.

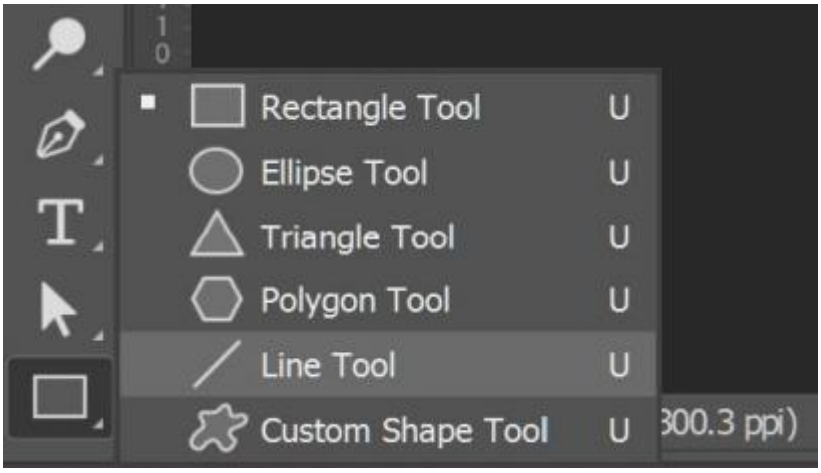
Click the buttons in the interactive below to become more familiar with the Photoshop interface.



The **Tools panel**, where you'll select different tools for editing images, is one of the most important features in Photoshop. Once you've chosen a tool, you'll be able to use it with the current file. Your **cursor** will change to reflect the currently selected tool.

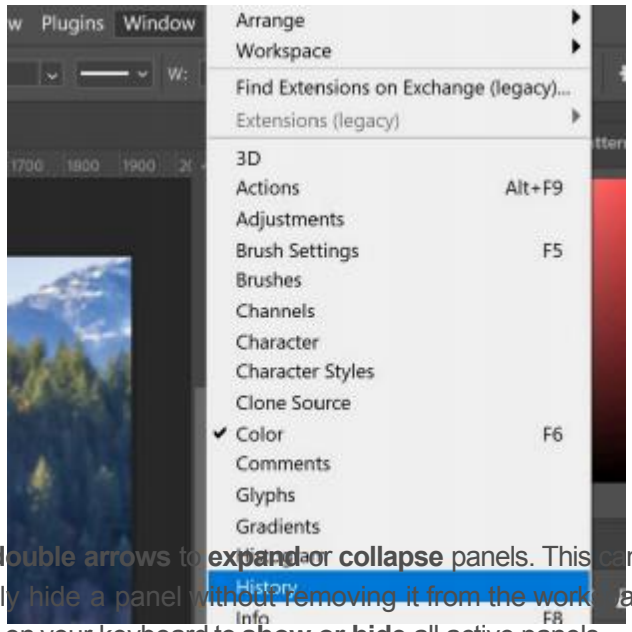


You can also **click and hold** to select a different tool. For example, you can click and hold the **Rectangle** tool to select different Shape tools, like the **Ellipse Tool**, **Line Tool**, and **Custom Shape Tool**.

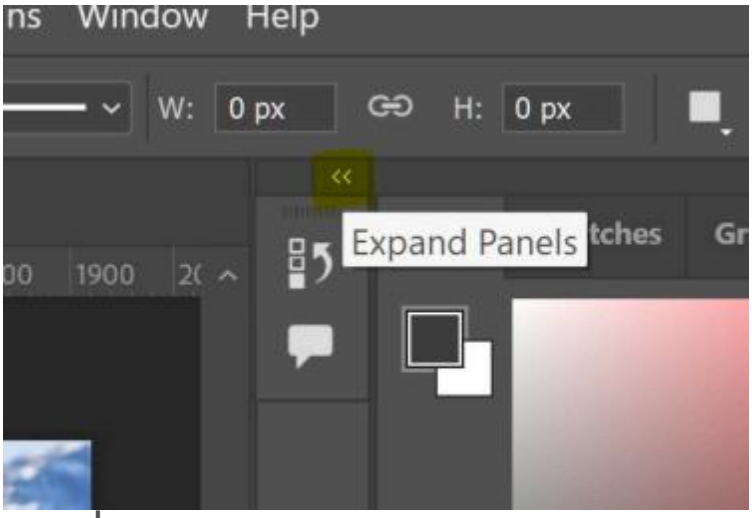


Showing and hiding panels

You'll also be able to view and modify information on the current file through the other **panels** in the workspace. For example, you can view the document's layers in the **Layers** panel. To show or hide any panel, click the **Window** menu, then select the desired panel (currently visible panels are indicated by a **check mark**). In the image below, we're using the Window menu to **turn on the History panel**.

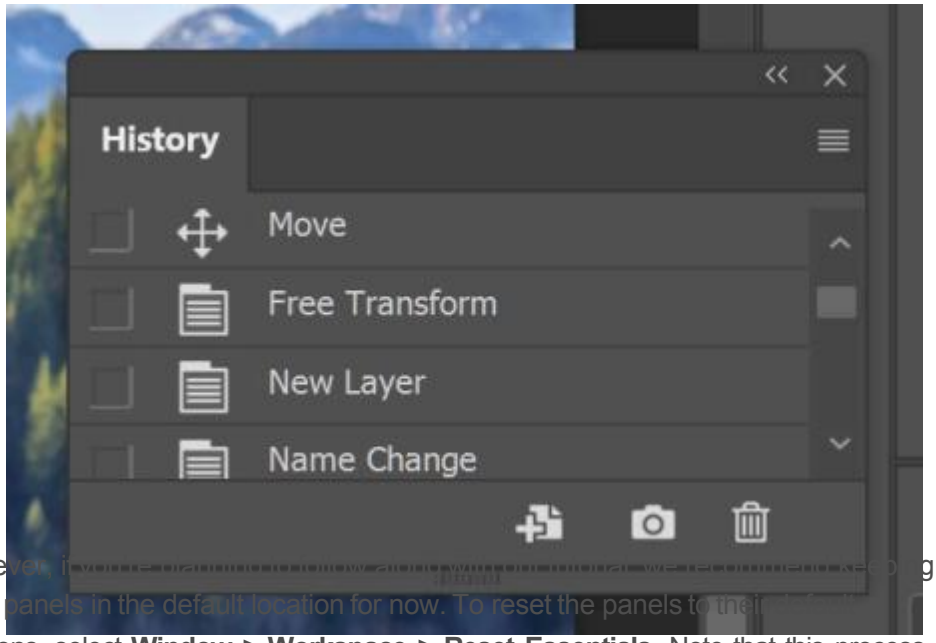


You can use the **double arrows** to **expand or collapse** panels. This can be helpful if you want to temporarily hide a panel without removing it from the workspace.You can also press the **Tab** key on your keyboard to **show or hide** all active panels.

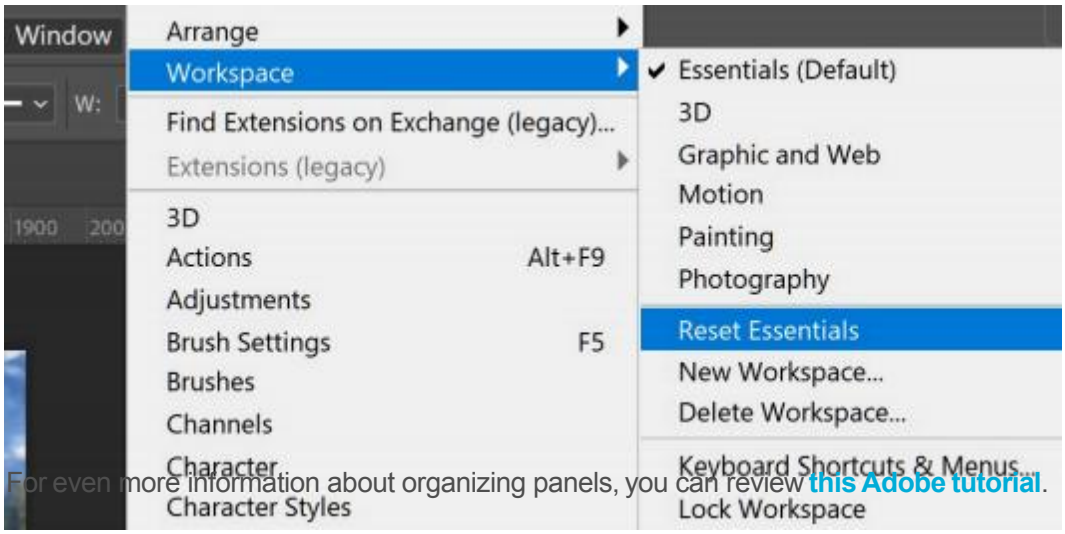


Moving panels

If you want to change a panel's location, you can **move it** by clicking and dragging the panel to a new part of the workspace.



However, i g most panels in the default location for now. To reset the panels to their positions, select **Window > Workspace > Reset Essentials**. Note that this process may vary depending on which version of Photoshop you're using. For example, in Photoshop Elements you'll select **Window > Reset Panels**.



For even more information about organizing panels, you can review **this Adobe tutorial**.

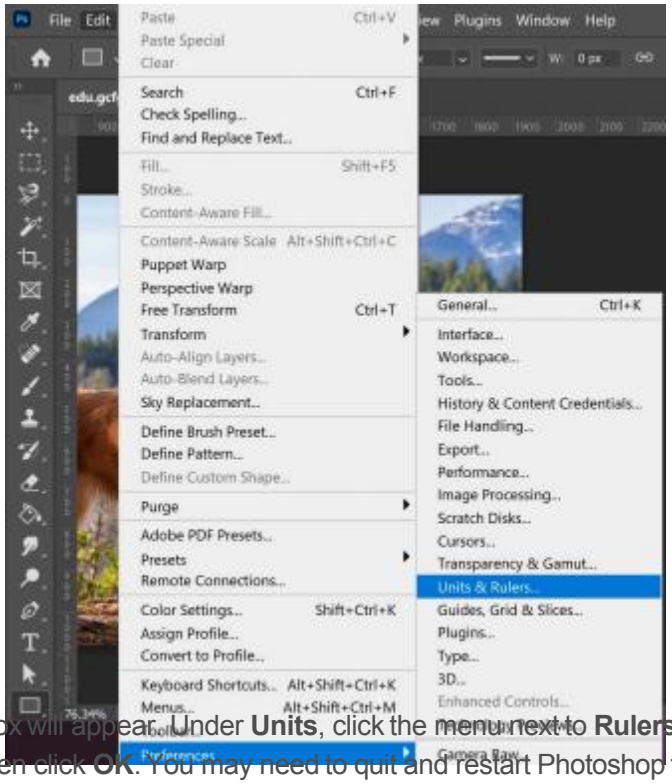
Customizing the Photoshop environment

If you want to customize Photoshop, you can adjust the default application settings. Most of these options are pretty technical, but we'd like to show you two **basic adjustments** you may find helpful.

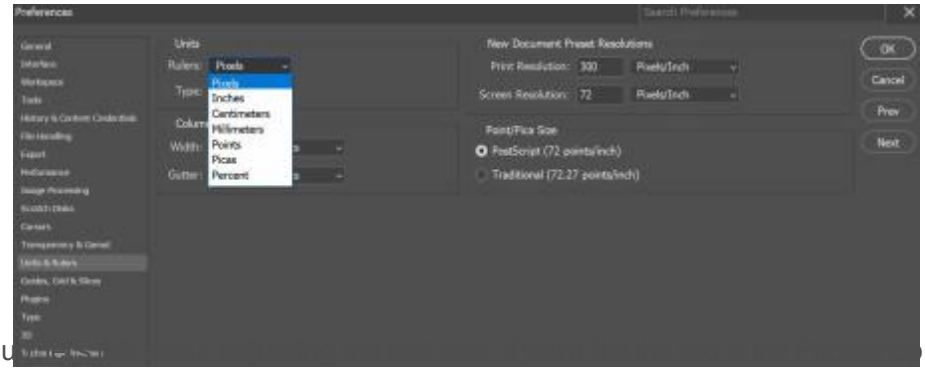
Let's go over **how to adjust the default unit**. By default, a document's dimensions are measured in **inches**. If you're not primarily editing images for print, we recommend

changing this setting to **pixels**.

1 Select **Edit > Preferences > Units & Rulers**. If you're using a Mac, select **Photoshop > Preferences > Units & Rulers**.



2 A dialog box will appear. Under **Units**, click the menu next to **Rulers**, select **Pixels**, then click **OK**. You may need to quit and restart Photoshop for the changes to take effect.

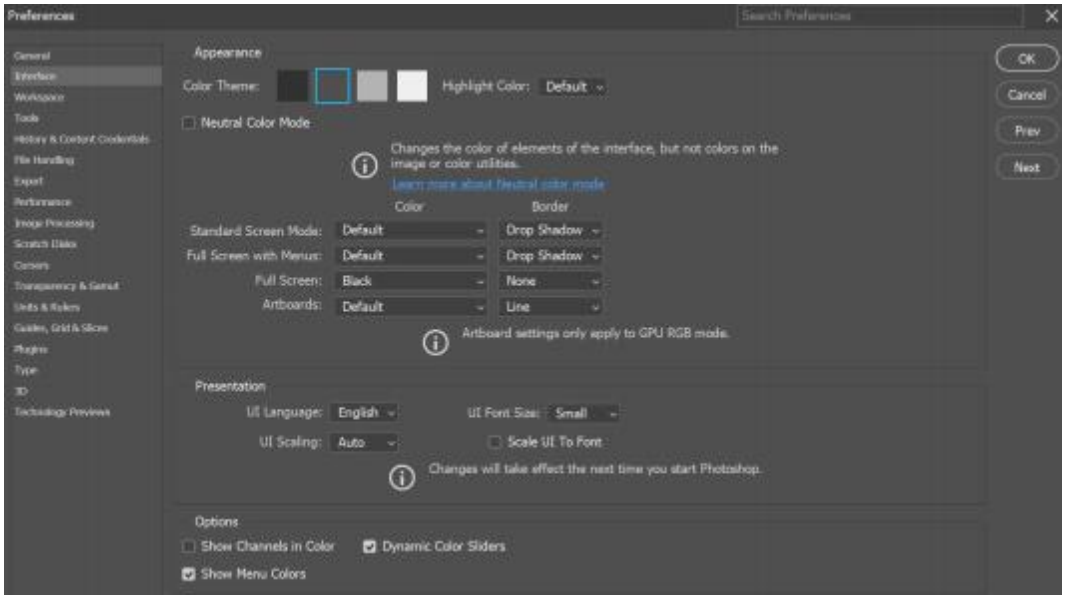


Next u
interface to be larger or smaller, you can adjust the application's text size.

1 Select **Edit > Preferences > Interface**. If you're using a Mac, select **Photoshop > Preferences > Interface**.

2 Under **Text**, click the menu next to **UI Font Size**, then select the desired size. You may need to quit and restart Photoshop for the changes to take

effect.

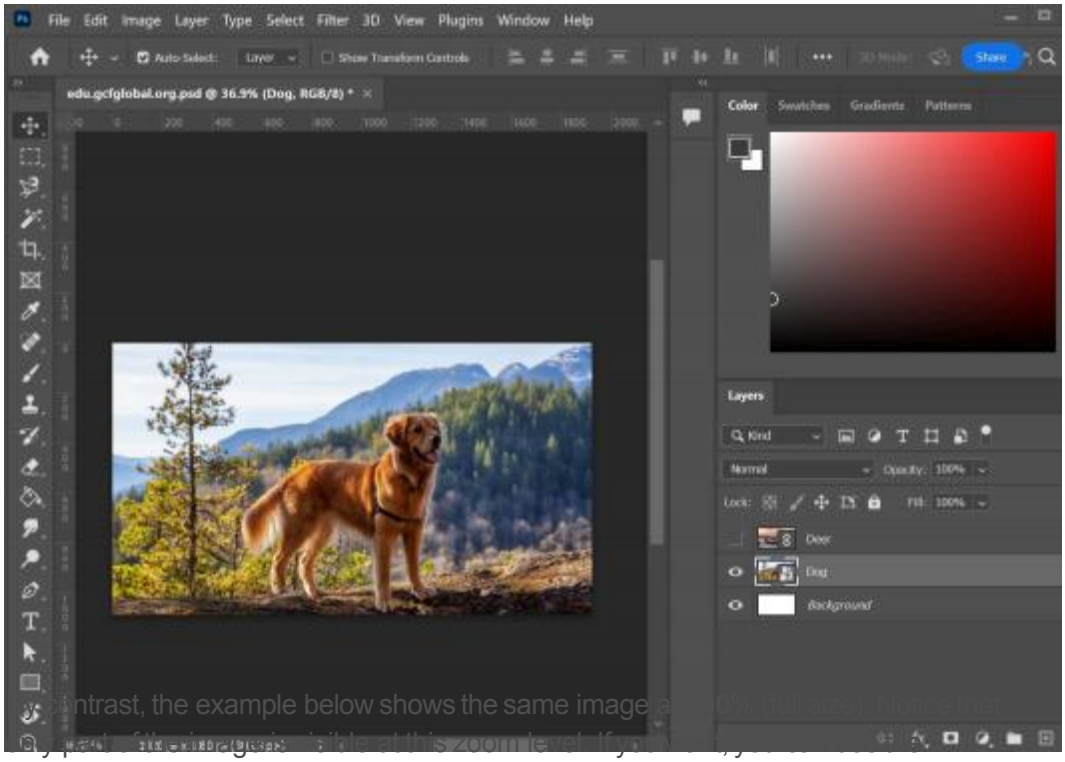


Changing the zoom level

When you're editing an image in Photoshop, you'll often be viewing it at **less than 100% of its full size**. This is because most modern digital cameras take large, high-resolution photos. These images are so large, in fact, that most computer screens can't display all of the pixels in the image at once. This is actually a good thing because it means you'll have **extra detail** to work with as you edit the image.

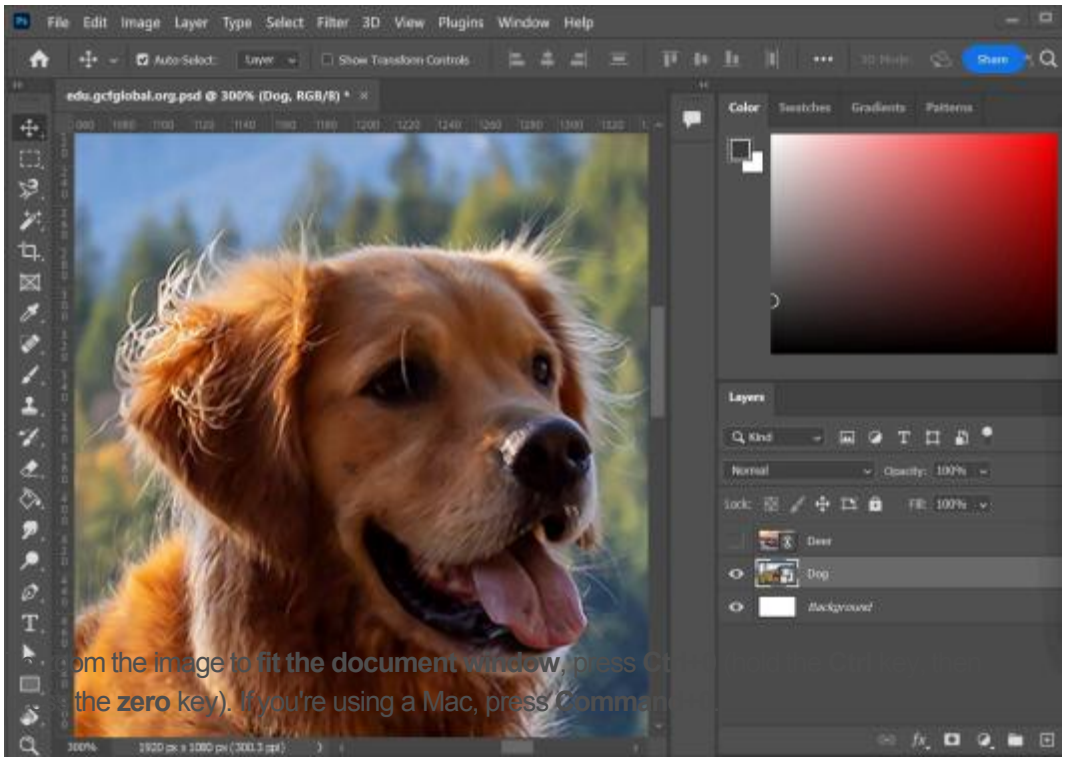
If you want to **zoom in or out**, simply press **Ctrl+** or **Ctrl-** (hold the **Ctrl** key, then press the **+** or **-** key). If you're using a Mac, press **Command+** or **Command-**.

In the example below, you can see a document at **44.4%** of its full size. Notice that you can see the current zoom level at the **top of the document window**, as well as in the **bottom-left corner** of the screen.



ntrast, the example below shows the same image a 0% full size). Notice that

horizontal and vertical **scrollbars** to view other parts of the image.



om the image to fit the document window, press C
the zero key). If you're using a Mac, press Comma

Depending on your computer's graphics card, some zoom levels, like 33.33% and 66.67%, can cause the image to appear pixelated. If this happens, you may want to zoom to 25% or 50% instead.

Try this!

Use the keyboard shortcuts above to **adjust the zoom level** of the example file.

Once you've become familiar with the Photoshop interface, you're ready to start **editing images**. We'll talk more about some of the most basic adjustments you can make—like cropping, resizing, and rotating—in the **next lesson**.

Lesson 5: Basic Tasks in Photoshop

Basic tasks in Photoshop

There's almost no limit to what you can do in Photoshop, but first you'll need to learn the fundamentals. We'll cover some of the most **basic image adjustments** you can make in Photoshop, including:

- **Cropping**: If you want to remove parts of an image, you can **crop** it. You can think of cropping like using a pair of scissors to **cut out** the parts you no longer want.
- **Resizing**: If you want to make an image smaller or larger, you can **resize** it. However, keep in mind that making an image larger than its original size generally does not make the image look good.
- **Rotating**: If you want to change the **orientation** of an image, you can **rotate** it to the left or right.

If you're new to image editing, you may want to review our lesson on **making basic adjustments** from our **Image Editing 101** tutorial to learn more about common problems that can occur when making these changes.

If you'd like to follow along, you can download our **example file** (right-click the link to save it). We're planning to place this image into an online newsletter, but it's much larger than we actually need so we're going to **crop** the image and then **resize** to it be 800px by 600px.

Cropping

There are two main ways to crop an image in Photoshop. You can either use the **Crop** tool or make a selection with the **Rectangular Marquee** tool. These methods work a bit differently, and you may find that you prefer using one method over the other.

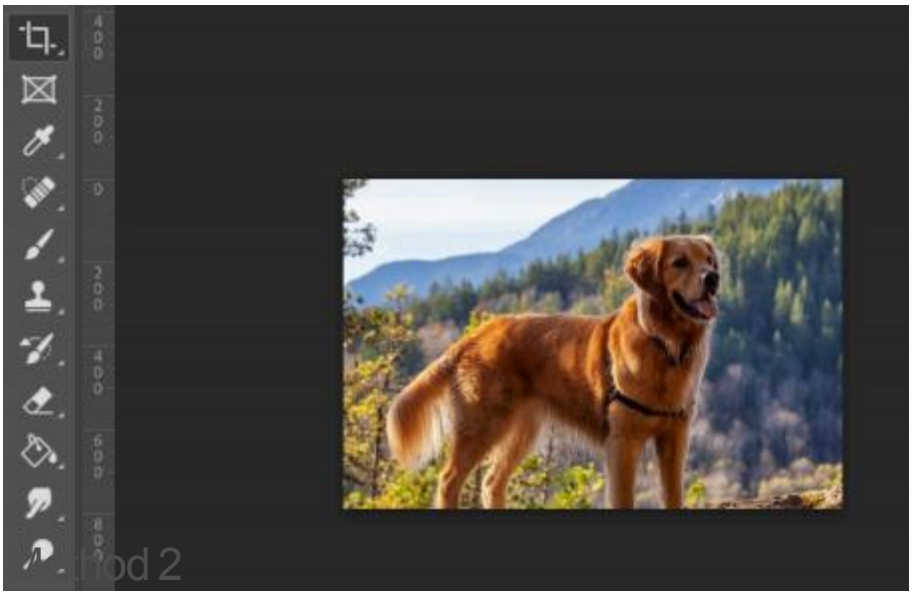
Method 1

1 With the image open in Photoshop, select the **Crop** tool from the **Tools** panel.

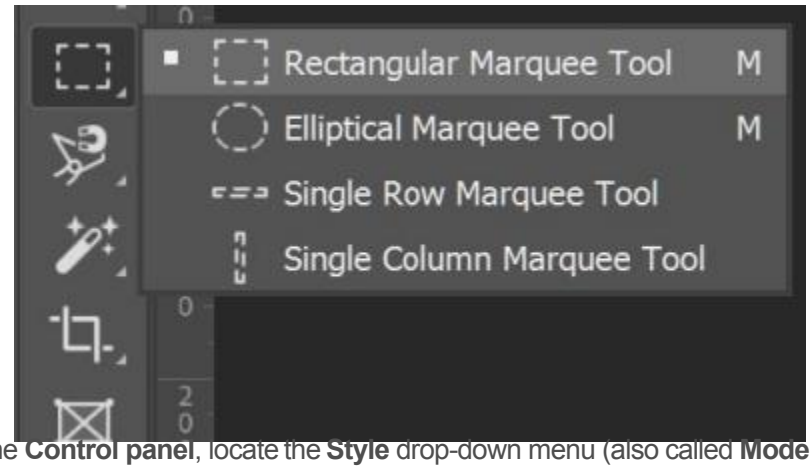
2 Click and drag to select the part of the image you want to keep, then release the mouse.

3 Adjust the **cropping handles** if necessary.

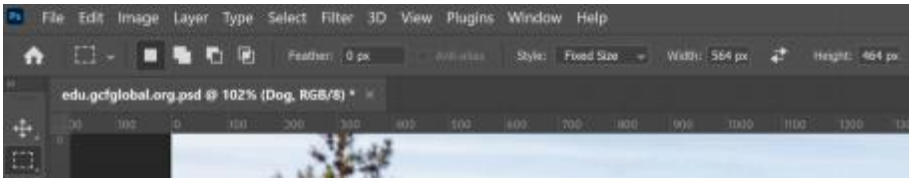
4 Enter on your keyboard to crop the image. You can also **double-click** the image.



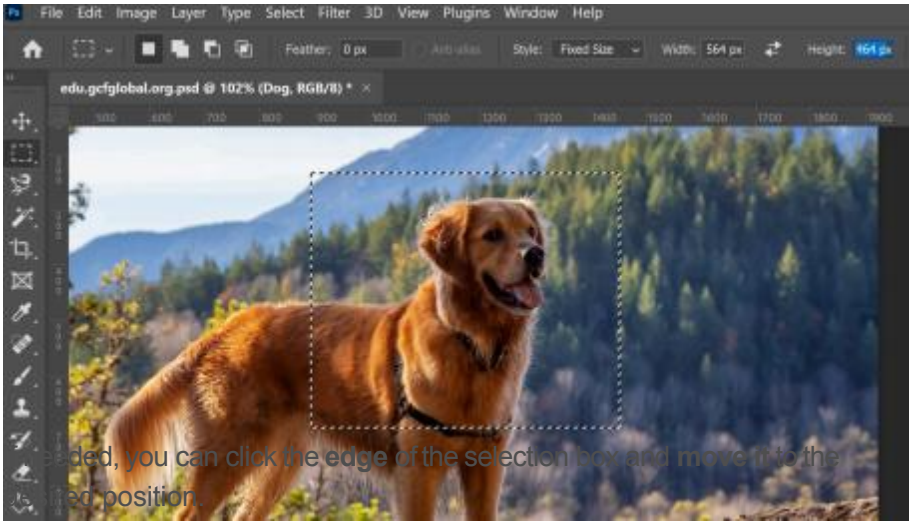
1 With the image open in Photoshop, choose the **Rectangular Marquee** tool from the **Tools** panel.



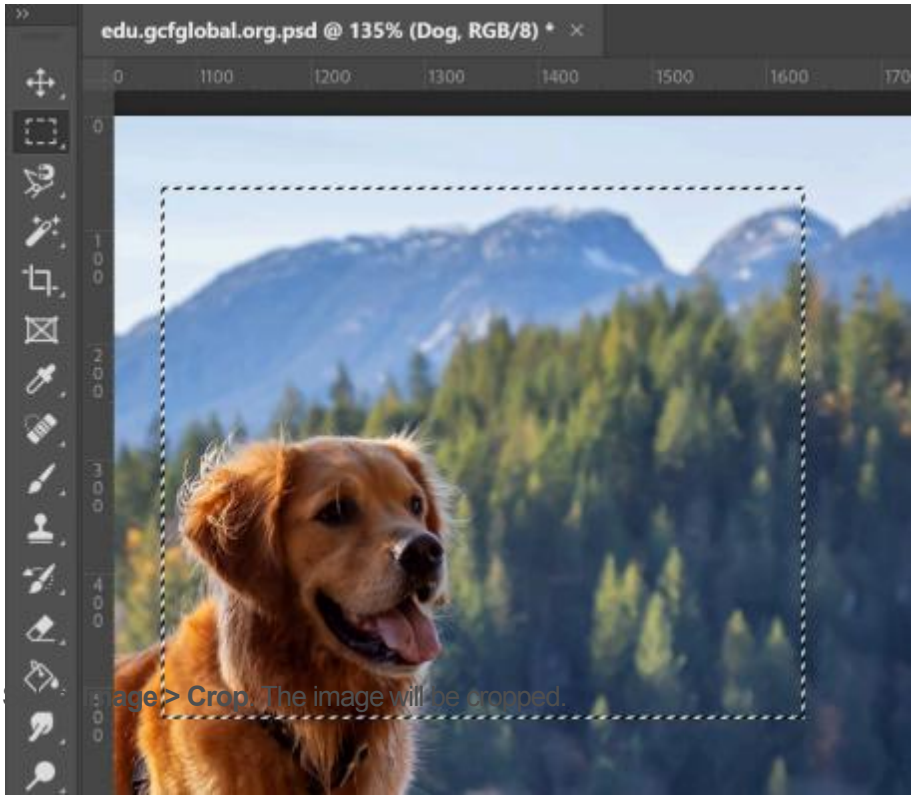
2 In the **Control panel**, locate the **Style** drop-down menu (also called **Mode** in some versions). If you want the image to be a specific **aspect ratio**, select **Fixed Ratio** and type the desired width and height. Otherwise, make sure the Style is set to **Normal**. In this example, we'll crop the image to a **4-by-3** aspect ratio.



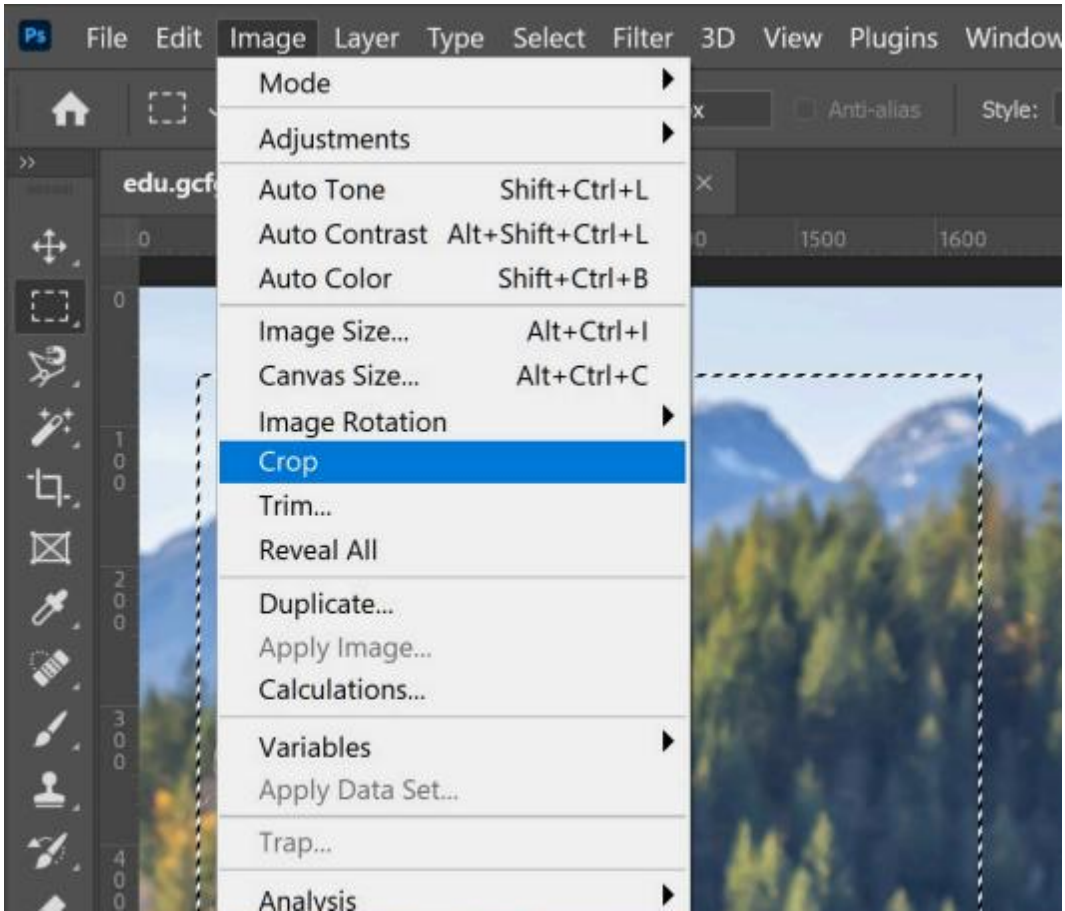
3 Click and drag to select the part of the image you want to keep, then release the mouse.



4 ...ded, you can click the edge of the selection box and move it to the ...ed position.



5 Image> Crop. The image will be cropped.



You can also move the entire selection box while making a selection. To do this, click and drag to select the area you want to select, but **do not release** the mouse. Next, press and hold the **spacebar** on your keyboard and move the mouse to move the selection box to a new location. When you're done, release the spacebar.

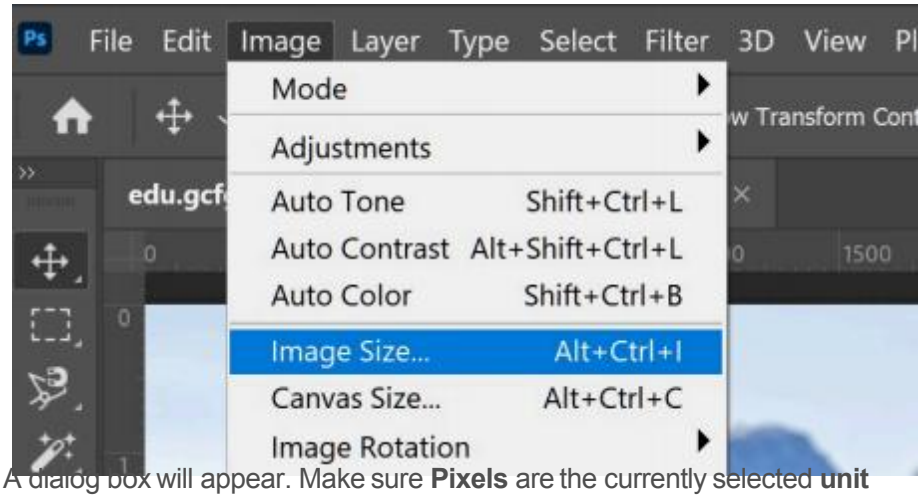
Try this!

Use Method 2 to **crop** the example file as in the example above. Choose a **Fixed Ratio** from the Control panel with a **width of 4** and a **height of 3** before making the selection.

Resizing and rotating

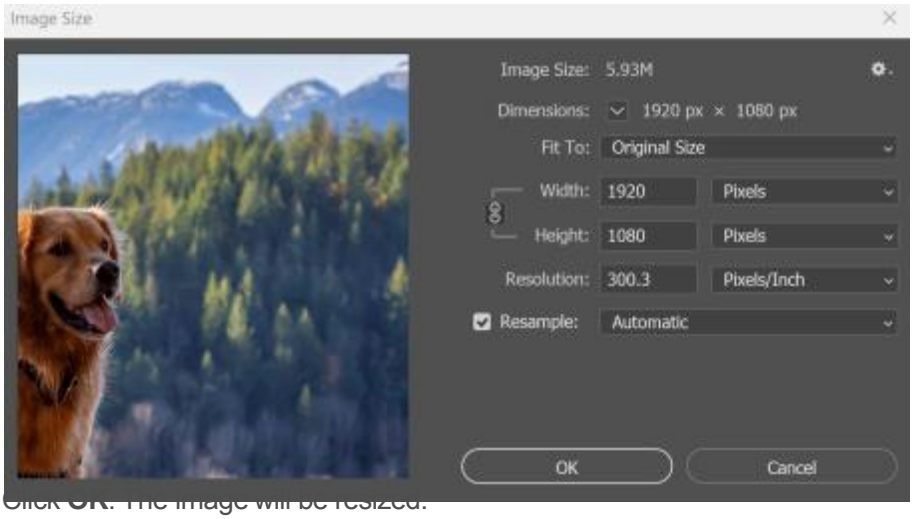
You should **avoid making images larger** than their original size. When you do this, the image simply won't have enough detail to look good at the larger size. You can review **Image Editing 101** to learn more.

1 Let's talk about **resizing** first. With the image open in Photoshop, select **Image > Image Size**.



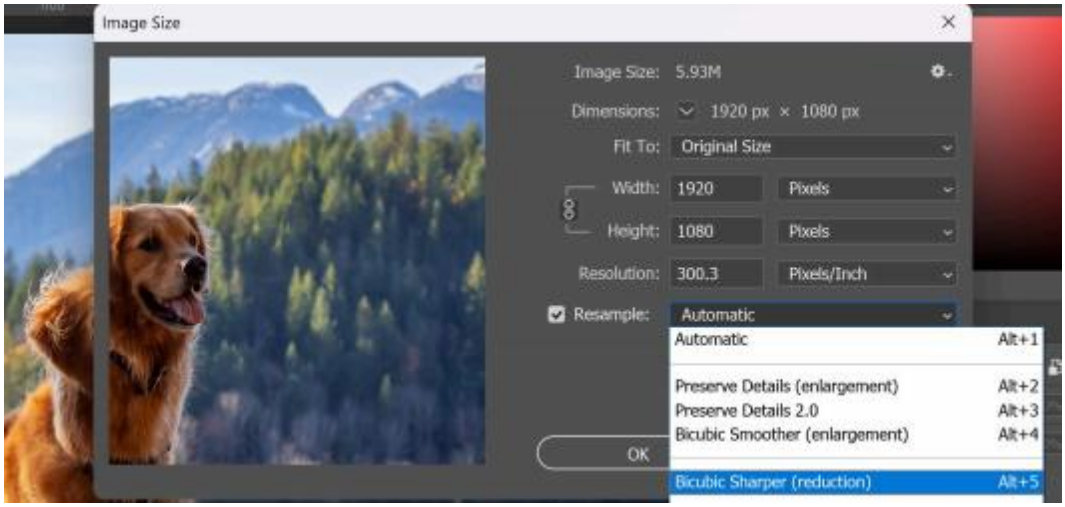
2 A dialog box will appear. Make sure **Pixels** are the currently selected **unit size** and that the **Resample** box is checked. The **Lock** icon next to the Width and Height should also be turned on, which will ensure that the **aspect ratio** stays the same to avoid distorting the image.

3 Type the desired **dimensions** for the new image. When you enter the new image width, the height should be adjusted **automatically** to maintain the original **aspect ratio**.



4 Click **OK**. The image will be resized.

If there is no **Automatic** option available from the Resample menu, we recommend choosing one of the **bicubic** resizing modes, which will give the best results in most situations.

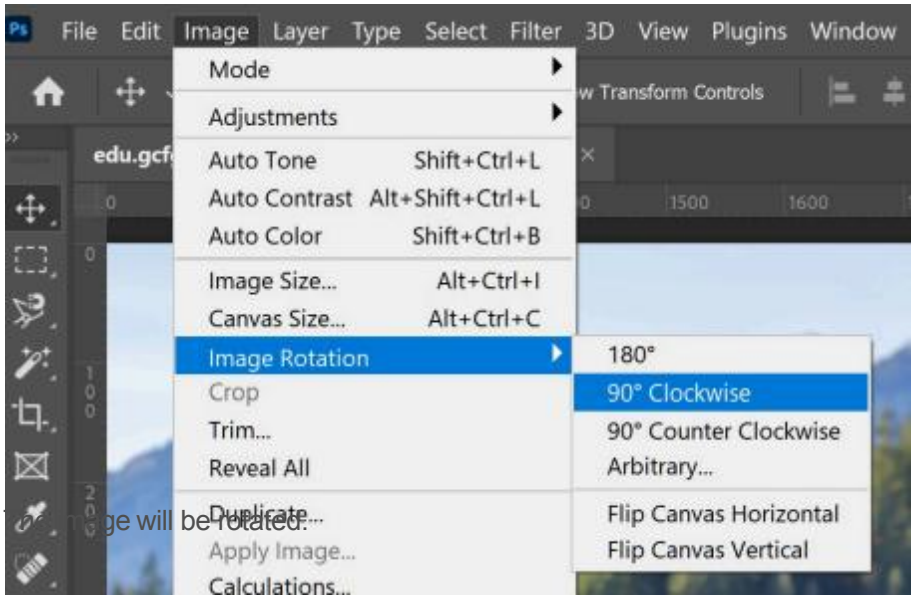


Try this!

Resize the example file to be **800px wide**. The height should adjust automatically to **600px**. Note that you must have already cropped the image using Method 2 as described on the previous page for this to work correctly.

It's easy to rotate an image in Photoshop. You can **rotate images** clockwise (CW) or counter-clockwise (CCW), **flip the image** horizontally or vertically, and even rotate by an **arbitrary** amount to choose a specific rotation. However, most modern digital cameras will adjust the rotation of images automatically, so you may not need to use this feature very often.

1 With the image open in Photoshop, select **Image > Image Rotation**, then select the desired rotation option.

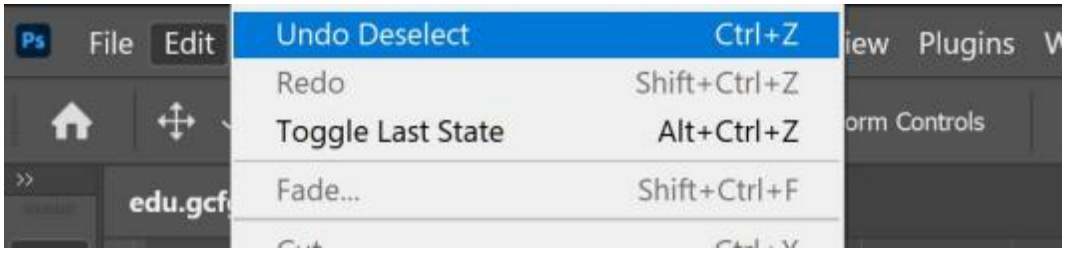


2 The image will be rotated.

Undoing changes

If you make a mistake, press **Ctrl+Z** (or **Command+Z** on a Mac) to undo your most recent change. To redo a change, just press **Ctrl+Shift+Z** (or **Command+Shift+Z** on a Mac).

In older versions of Photoshop, undoing works a bit differently. You can press **Ctrl+Z** (or **Command+Z** on a Mac) to undo your most recent change. However, if you press Ctrl+Z again, the change will be redone. If you want to undo several changes in a row, you'll need to select **Edit > Step Backward** or press **Ctrl+Alt+Z** (or **Command+Option+Z** on a Mac).



Try this!

After you've made a few changes to the example file, try using the **Step Backward** and **Step Forward** commands to see the effect.

After you've edited an image, you'll want to **save a new version** of the edited file to preserve the changes. This will also prevent you from accidentally overwriting your original image file. There are several ways to save files in Photoshop, which we'll discuss in detail in the **next lesson**.

Lesson 6: Saving Images

Saving images

In Photoshop, saving works a bit differently from most other applications. Instead of working with one main file type—like .docx in Microsoft Word—Photoshop offers a variety of ways to save your images. In this lesson, we'll cover the **different saving options** in Photoshop, along with some common reasons to save files in different formats.

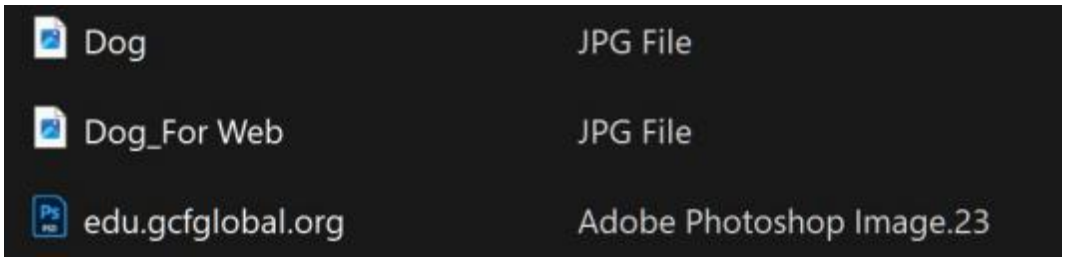
If you'd like to follow along, you can download our **example file**.

Saving options

When saving a file in Photoshop, you have several options and file formats to choose from:

- **PSD**: This is the **default file type** for Photoshop documents, although you won't necessarily use it for every image. It will save your **layers** and all of the other information in your image so you can easily re-edit it later. PSD files are designed to be opened in Photoshop, so if you want to share the image with others you'll also need to save a copy of the image in a common file format, like **JPEG**.
- **Common file formats**: You can save images in a variety of common file types, including **JPEG** and **PNG**. These file formats can be viewed and edited on almost any computer or mobile device, which makes them well-suited for sharing with others. However, unlike PSD files these formats aren't as useful if you plan to continue editing the file, and they also can't preserve layer information.
- **Save for Web**: If you're planning to upload an image to the Web, like on a blog or website, you'll want to use the **Save for Web** feature. This tool allows you to save images that are **optimized for the Web**, which will make them easier to download and view online. Save for Web also includes several helpful features for preparing images for the Web, including the option to **resize** images.

In the image below, you can see three different versions of an image file: the original JPEG file, an edited PSD version, and a final JPEG version that's been resized and saved for the Web. You can see that the Web version has a much smaller file size than the
original and PSD versions.



Ultimately, the saving option you choose will depend on what you need to do with the image. Let's take a look at a couple of scenarios to see why you might choose different saving options.

Scenario 1

Let's say you're asked to create a new header image for a company website. You've been given a photo to include, and you need to add some text with the company name. Because you'll likely edit and revise this type of project, you'll want to save it as a **PSD** file. This way, you can easily continue editing the file later on. And because it will eventually be posted online, you'll also want to use **Save for Web** to create a new JPEG version of the finished image.

Scenario 2

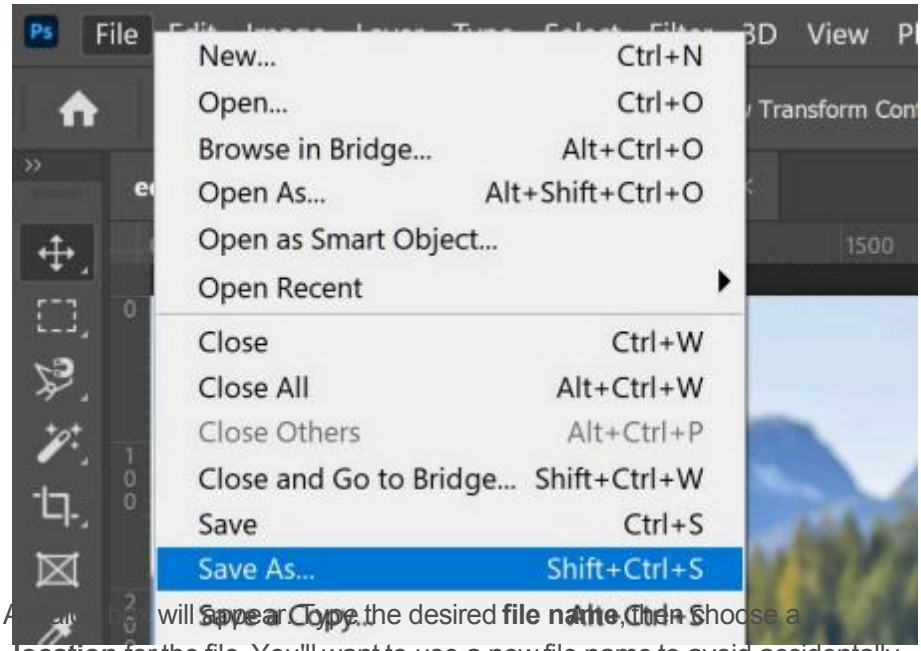
Let's say you're planning to share some photos from a recent vacation with your friends. You'd just like to make some quick adjustments in Photoshop, like cropping and rotating, before sharing them. In this case, you could open the original image files in Photoshop, make the necessary adjustments, then save a new version of the edited photos as **JPEGs**. Because none of these edits are too complicated, you probably don't need to save a separate PSD version of each image.

As you can see, the saving option you choose will vary from project to project. Before saving an image, take a moment to **consider the type of files** you'll need. As you start to gain more experience with Photoshop, this process will begin to feel quick and natural.

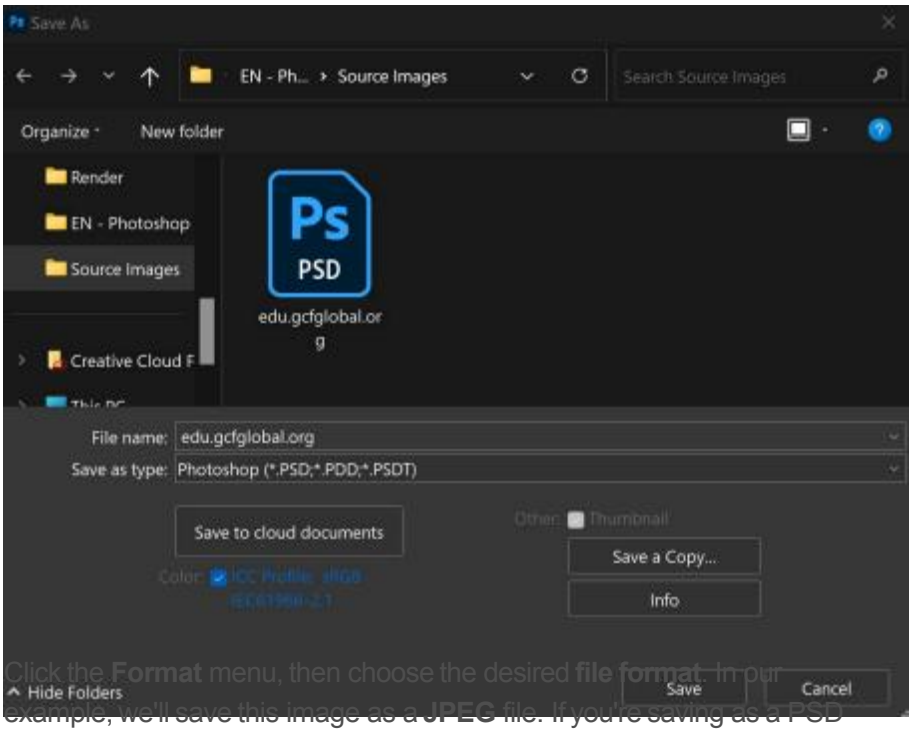
Using Save As

You'll use the **Save As** command to save files in the PSD format, as well as other common formats like JPEG and PNG.

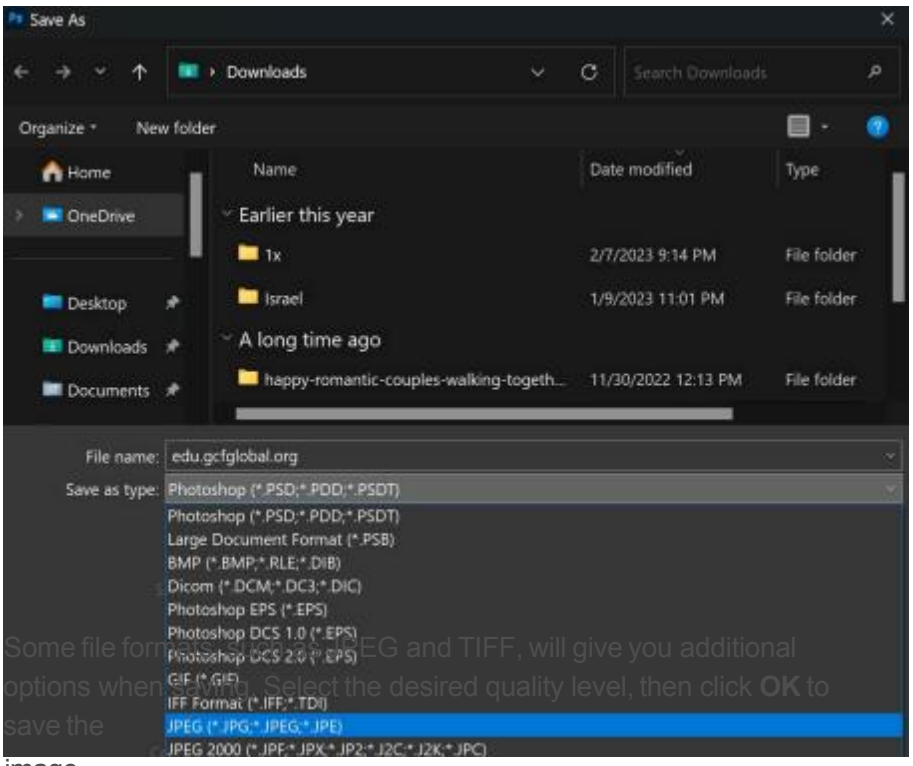
1 With the image open in Photoshop, select **File > Save As**.



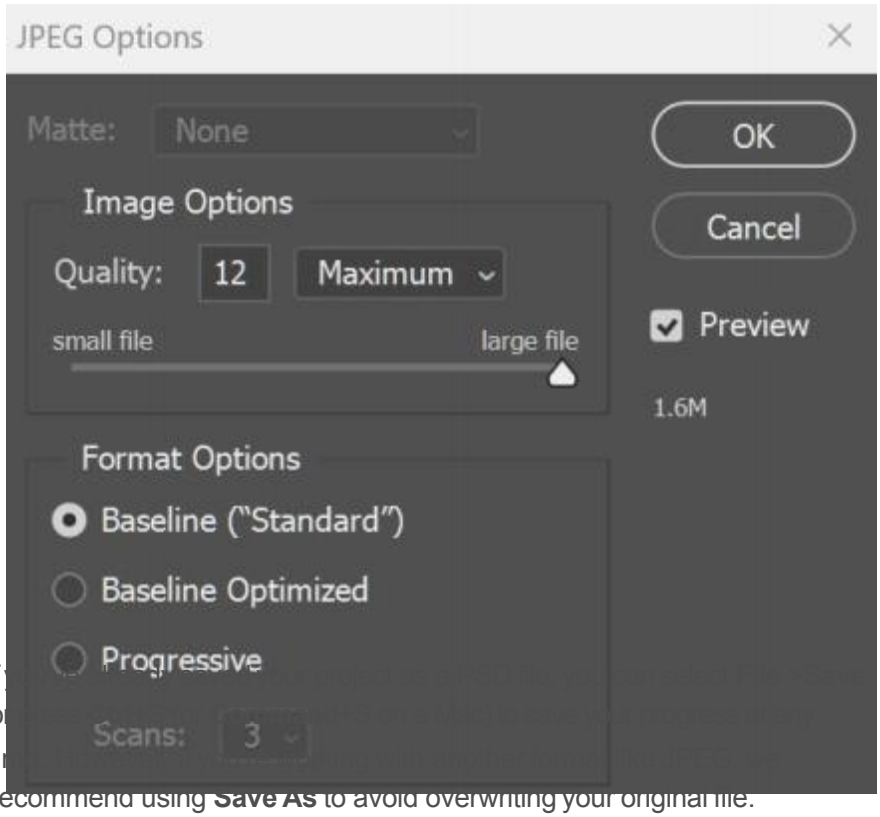
2 A ... will appear. Type the desired **file name**, then choose a **location** for the file. You'll want to use a new file name to avoid accidentally overwriting the original file.



3 Click the **Format** menu, then choose the desired **file format**. In our example, we'll save this image as a **JPEG** file. If you're saving as a PSD file, make sure the **Layers** option is checked. However, most other formats won't allow you to select this option. Click **Save**.



4 Some file formats, such as JPEG and TIFF, will give you additional options when saving. Select the desired quality level, then click **OK** to save the image.



5 If y
o
ti
recommend using **Save As** to avoid overwriting your original file.

Sometimes when you're saving the file, you haven't activated all of the possible formats. You need to tick the box **Enable legacy "Save as "** Goto **Edit > Preferences > Ctrl + K > File handling > enable Legacy "Save as"> OK**.

Try this!

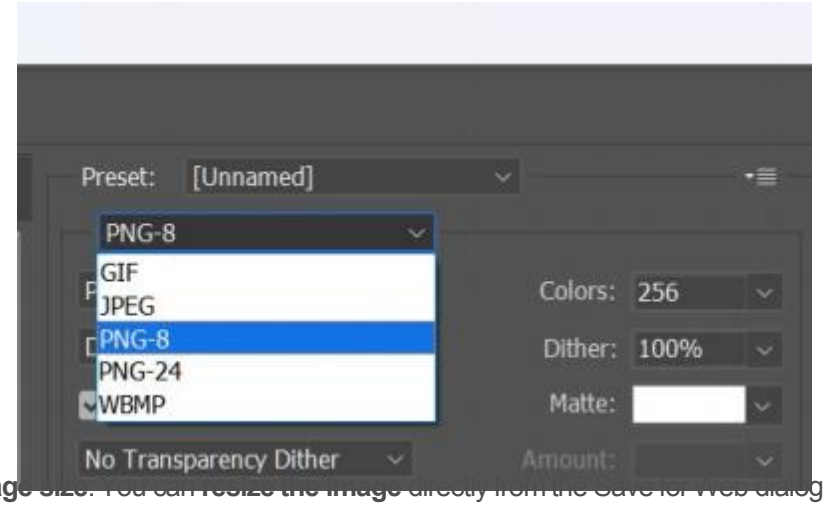
Open the example file in Photoshop and try saving it in different file formats, like PSD and JPEG. Notice how the PSD format preserves the individual layers, while the JPEG format does not.

What is the "Save for Web" feature?

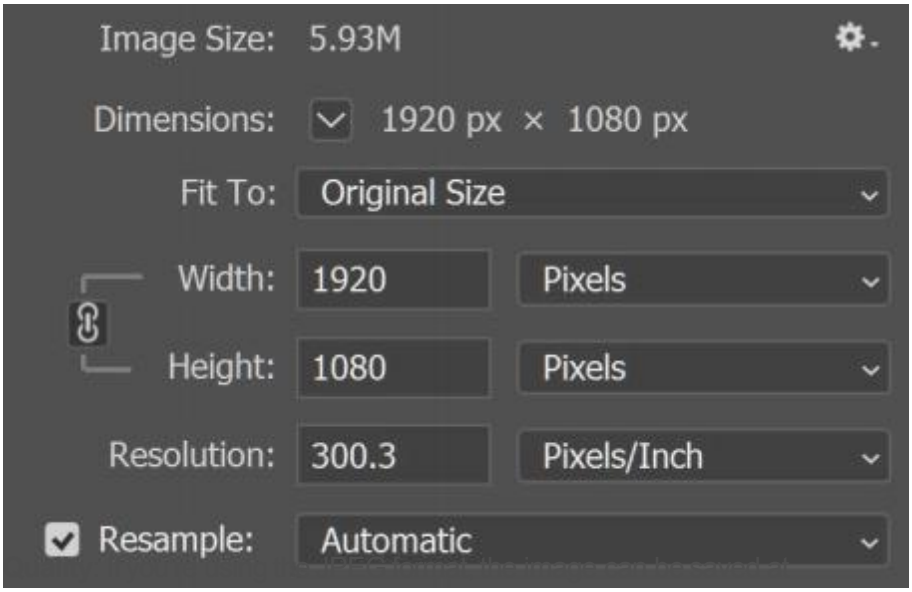
When you use the Save for Web feature, you'll need to make a few decisions about the image you're saving:

- **File format**: Save for Web allows you to choose from a few **Web-safe** file formats. Most of the time, you'll use the JPEG format for photographs. PNG- 24 will keep the full quality of the image, whereas PNG-8 is mainly used for

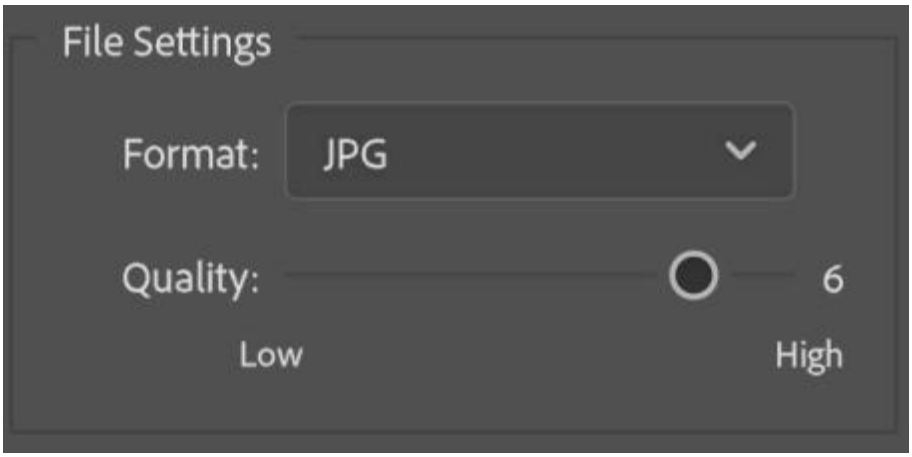
graphics and illustrations that use just a few colors. Generally, you won't need to use the GIF or WBMP formats.



- **Image size**. You can **resize the image** directly from the Save for Web dialog box. Resizing the image to be smaller will also reduce the file size. However, if you're using a service like Facebook or Tumblr, you probably won't need to resize your images because these services **resize them automatically**.



- different **quality levels**. You may want to experiment with different settings to find the best balance between quality and file size.



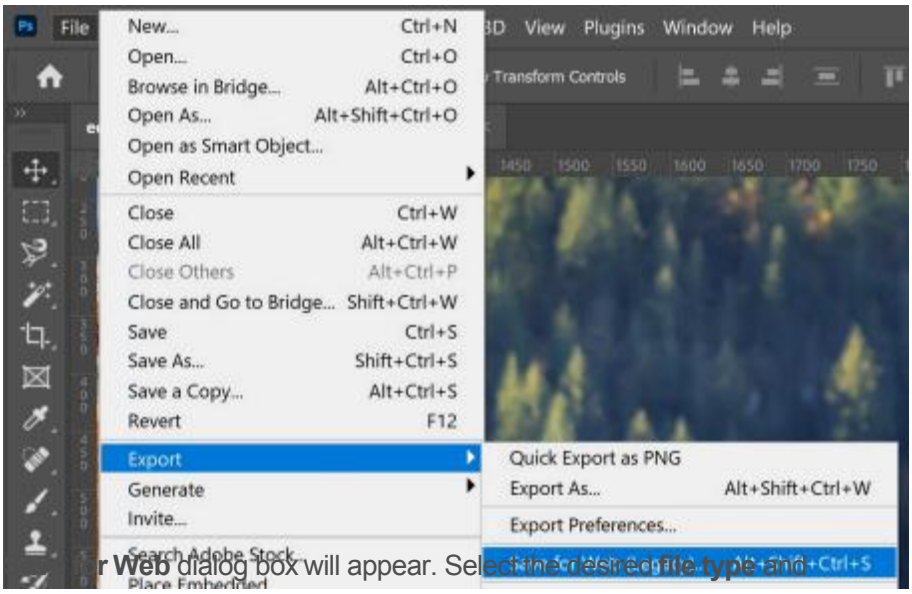
Try this!

Drag the slider in the interactive below to adjust the JPEG compression quality. Remember, higher quality levels will also increase the file size. Try to find a setting that looks good while keeping the file size relatively small.

> For best results, we recommend using the Chrome web browser with these interactives.

Steps to "Save for Web"

1 Select **File** > **Save for Web**.

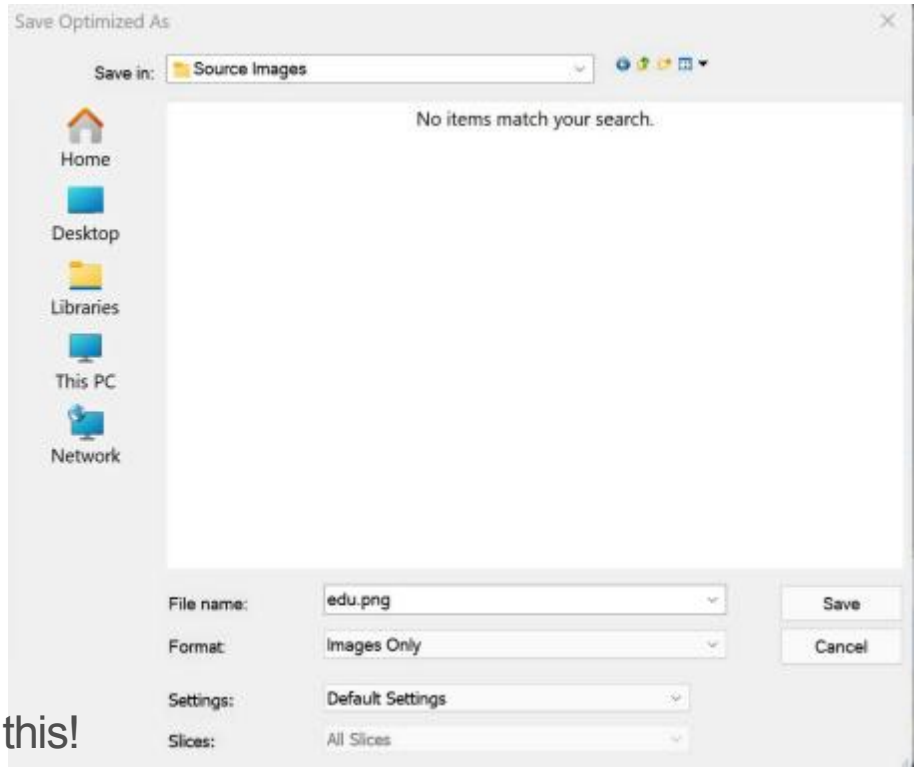


2 **r Web** dialog box will appear. Select the desired **file type** and **quality level**.

3 **automatically** to maintain the original **aspect ratio**.

4 If you want, you can use the **2-Up view** to compare the original image with a preview of the new version. This is an easy way to make sure you haven't lost too much quality from the original version. Note the file size in the bottom-left corner of each preview window.

5 C



Try this!

Open the example file in Photoshop and use Save for Web to save a new version of the image. Try out different file formats and quality settings to see how they affect the image's quality and file size.

Lesson 7: Understanding Layers

Understanding layers

Have you ever wondered how people achieve such great results with Photoshop? While there are many image editing techniques, there's one tool Photoshop professionals use with almost every project: **layers**. Learning how to use layers is probably the most important thing you can do to improve your Photoshop skills. In this lesson, we'll cover **how layers work**, the **different types** of layers, and the basics of **creating and using layers**.

If you'd like to follow along with the lesson, you can download our **example file**. We're planning to send this file as an email attachment and post it online.

What are layers?

You can think of layers as **transparent panes of glass** stacked on top of one another, which allow different parts of each layer to show through. There are several types of layers you'll use in Photoshop, and they fall into two main categories:

- **Content layers**: These layers contain different types of content, like **photographs**, **text**, and **shapes**.

- **Adjustment layers**: These layers allow you to apply adjustments to the layers below them, like **saturation** or **brightness**. Adjustment layers are a type of **nondestructive editing** because they don't actually change anything about the original image.

When using layers, it may be helpful to turn individual layers on and off to see how they affect the image. You can do this by clicking the **eye icon** next to each layer name.

> Click the eye icons in the interactive below to practice turning different layers on and off. Notice how hiding content layers like the **Background** layer has a more noticeable effect than hiding adjustment layers like the **Adjust Levels** layer.

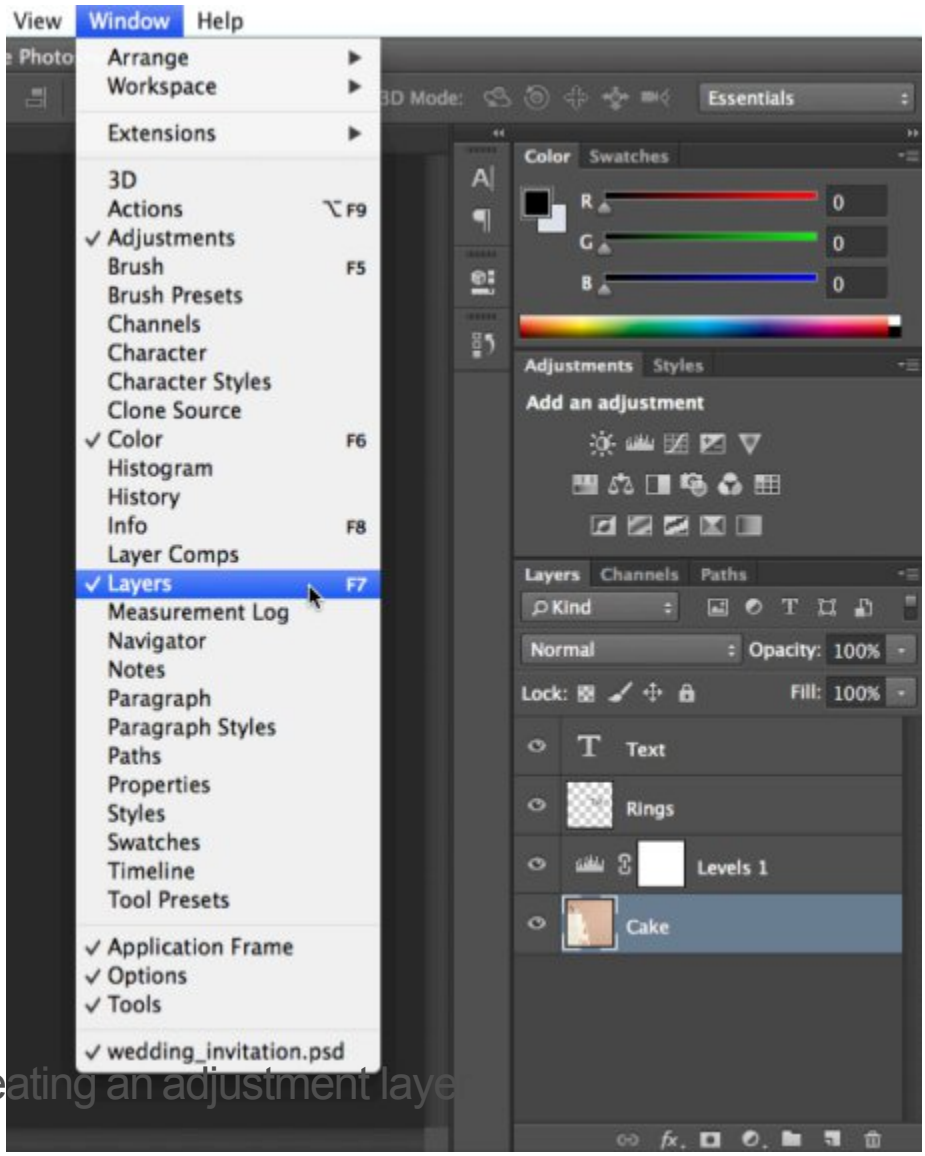
Why use layers?

At this point, you may be wondering why you even need to use layers. Wouldn't it just be easier to work with everything in your image at once? The truth is, layers give you an amazing amount of flexibility and control because you can **edit each layer independently** from the rest of the image. Once you become comfortable with layers, you'll use them all the time.

Layer basics

You can view, create, and edit layers with the **Layers** panel. This will generally be found in the lower-right corner of the screen, although you can always go to **Window > Layers**

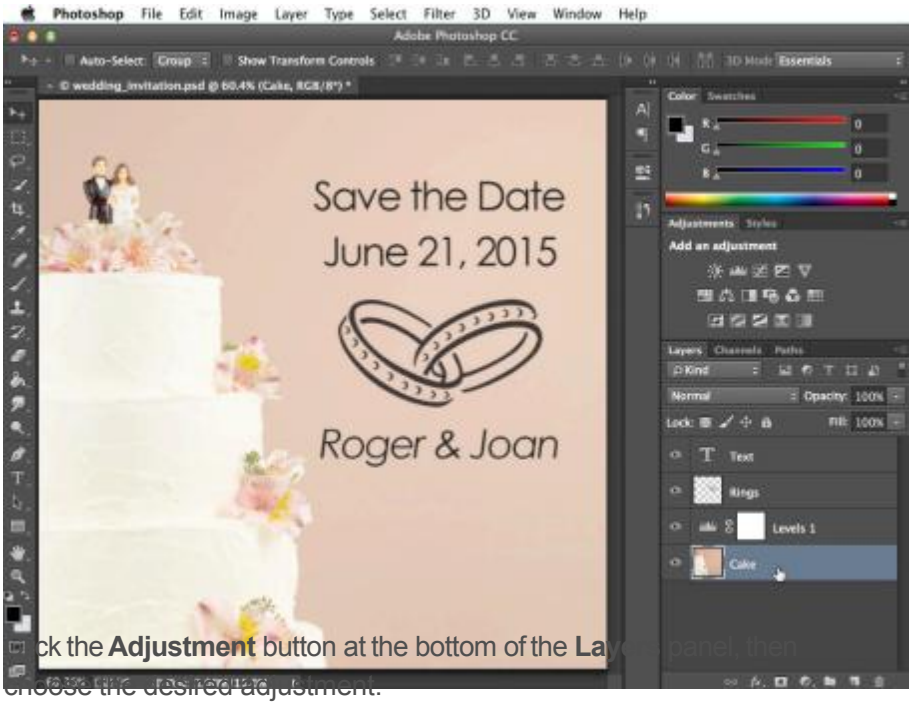
to make sure it's turned on.



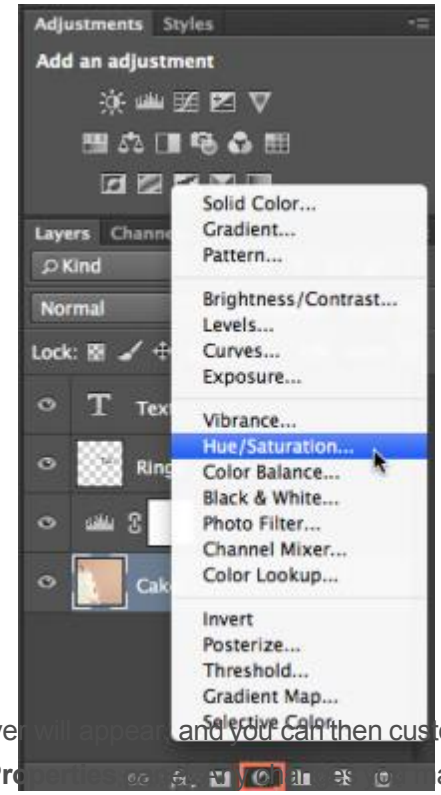
Creating an adjustment laye

If you've never used layers, we recommend trying adjustment layers first. Remember, an adjustment layer does not contain content; it simply allows you to apply adjustments to the layers below it.

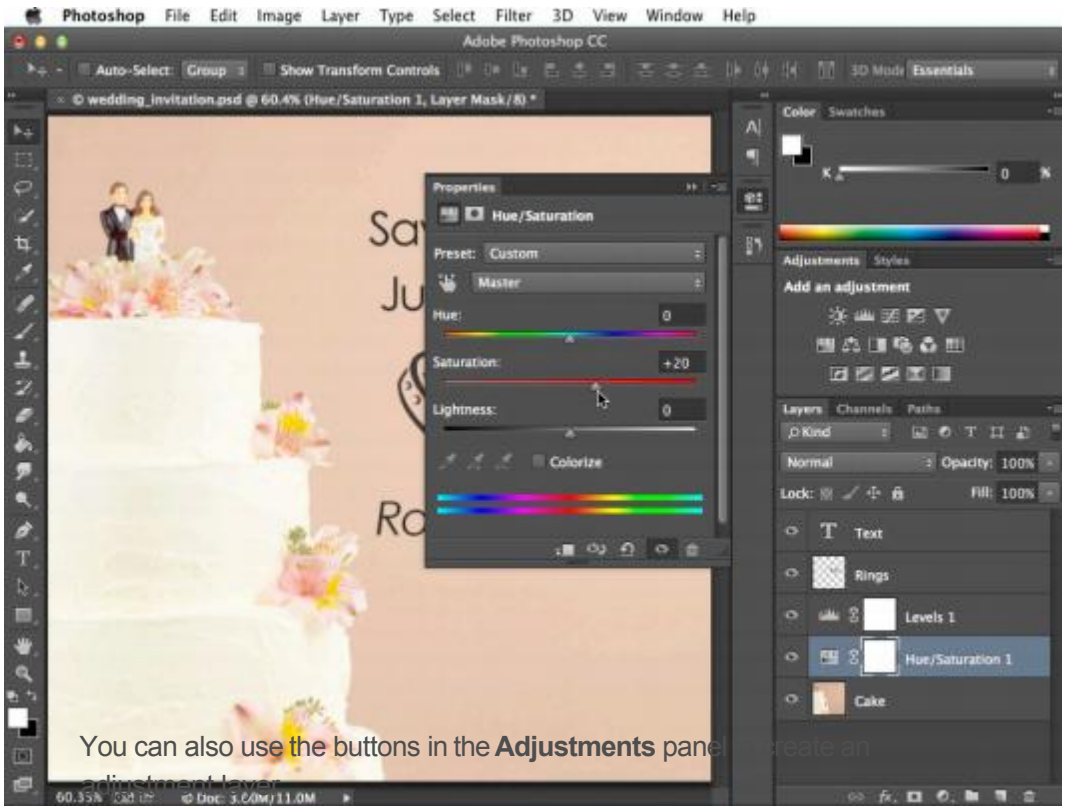
1 In the **Layers** panel, select the layer below where you want the adjustment layer to appear. In our example, we'll select the **Cake** layer.

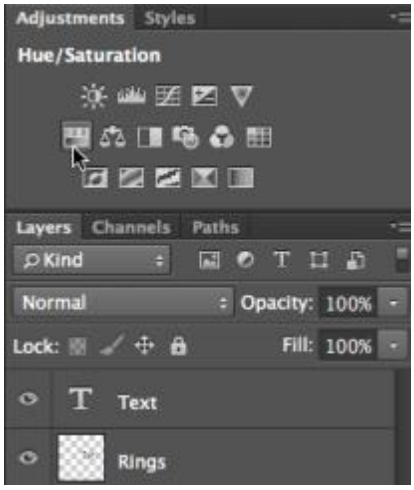


2 Click the **Adjustment** button at the bottom of the **Layers** panel, then choose the desired adjustment.



3 The adjustment layer will appear, and you can then customize the adjustment in the **Properties** panel. Any change you make will affect every layer below the adjustment layer. We'll talk more about using the **Properties** panel for different adjustments throughout the tutorial.





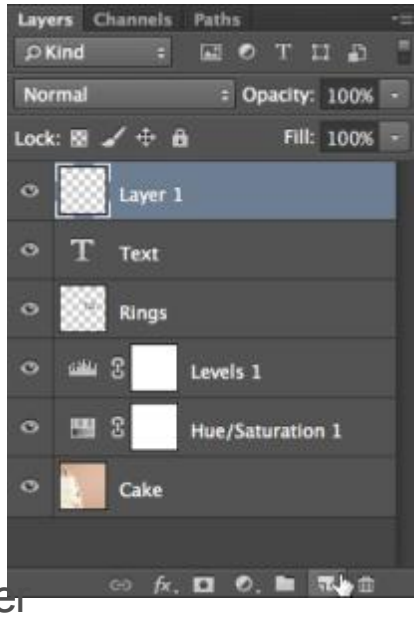
Try this!

In the example file, select the Cake layer, then create a **Hue/Saturation** adjustment layer. Try using the sliders in the **Properties** pane to see the effect.

Creating a blank layer

There may be times when you'll want to create a **new blank layer**. For example, if you want to draw on an image with the Brush tool, you could create a new layer and then draw on that layer.

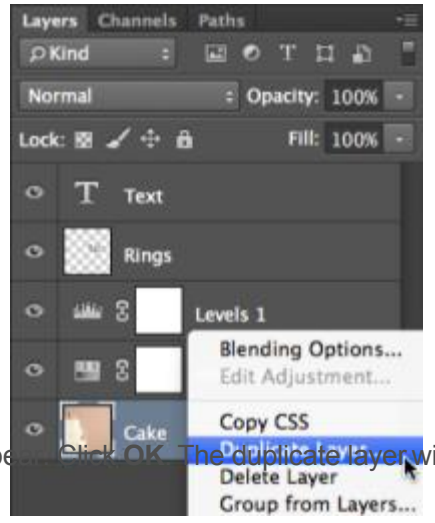
To create a new layer, click the **New Layer** button near the lower-right corner of the **Layers** panel. The new layer will appear in the Layers panel.



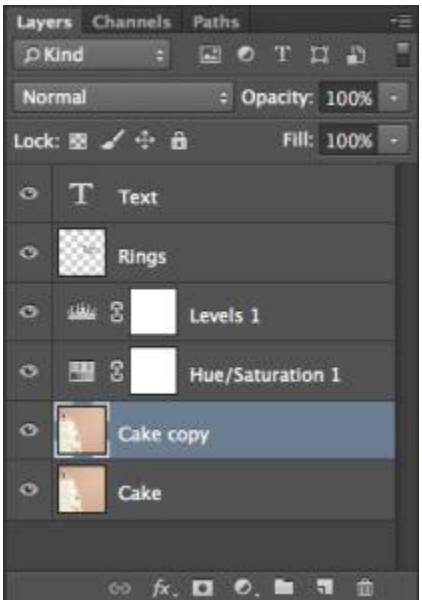
Duplicating a layer

There will also be times when you'll want to **duplicate an existing layer**. This is an easy way to try out different edits without altering the original layer.

1 Right-click the layer, then select **Duplicate Layer**...

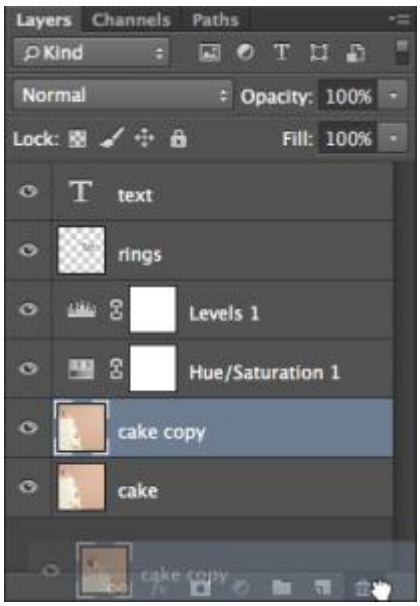


2 A dialog box will appe... Click OK. The duplicate layer will appear.



Deleting a layer

If you find that you no longer need a layer, you can **delete it**. To do this, simply select the layer and press the **Delete** key on your keyboard. You can also click and drag the layer to the **Trash Can** in the lower-right corner of the **Layers** panel.

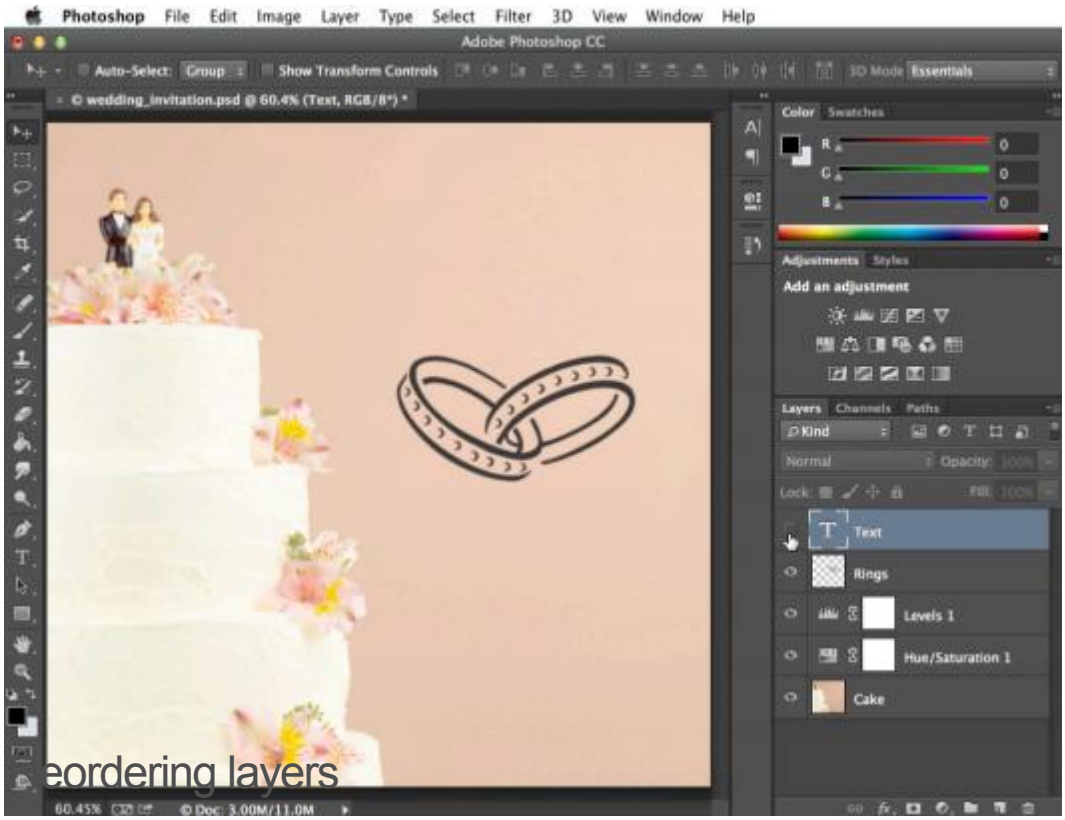


There are many ways to work with the layers in your file. For example, you can **show and hide** different layers or **change the stacking order**.

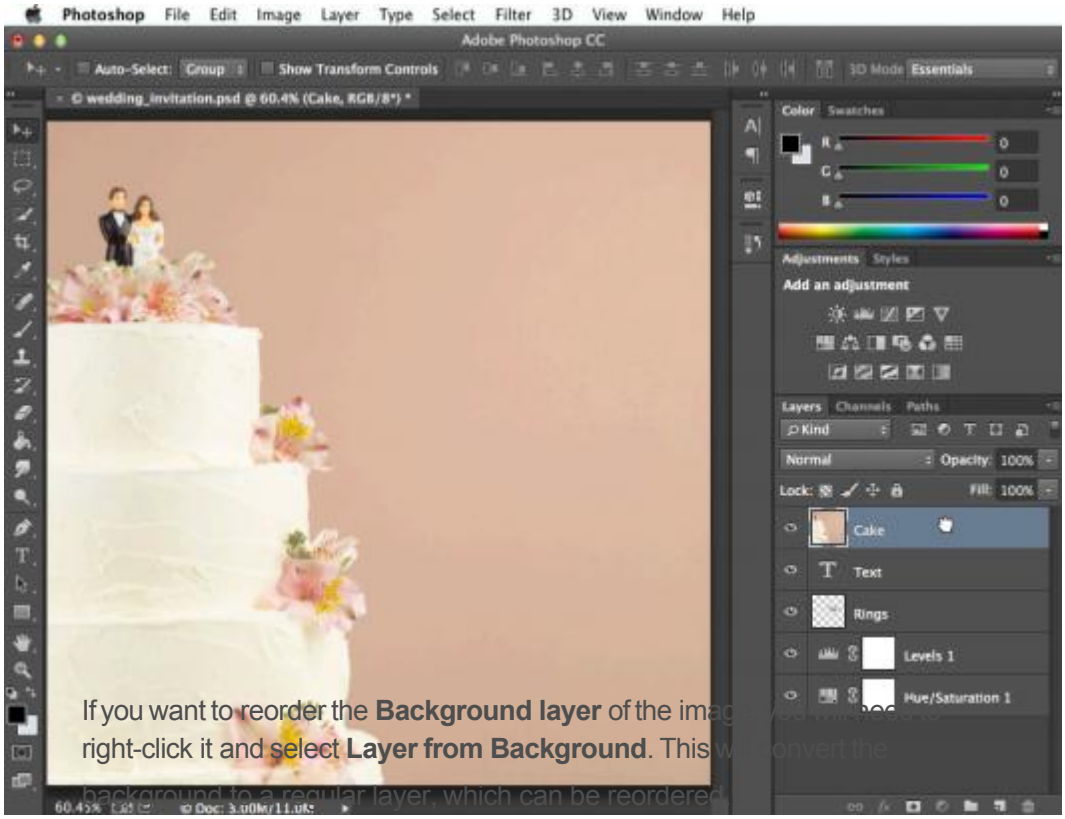
Showing and hiding layers

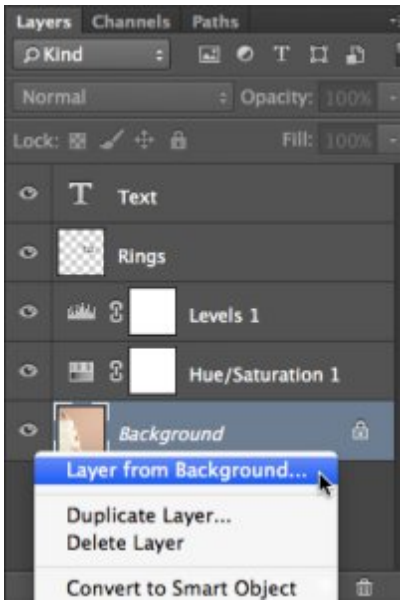
To hide a layer, simply click the **eye icon** next to the desired layer. Click it again to show the layer. In the image below, you can see that we've turned off the **Text** layer, so the text

is no longer visible in the document window:



The order in which layers are stacked will determine how the document looks. There may be times when you need to **change the stacking order**. To reorder a layer, simply click and drag the layer to the desired position in the **Layers** panel. In the image below, you can see that we've moved the **Cake** layer to the very top, which completely covers up the layers below it.





Try this!

Try **reordering** the layers to see the effect. Notice how moving the **Cake** layer to the very top will completely cover up the other layers, but moving the **Text** or **Rings** layer to the top does not.

Letting layers show through

In the example above, moving the **Cake** layer to the top completely covers up the layers below it. By contrast, moving the **Text** or **Rings** layer to the top would still allow parts of the layers below to show through. This is because these layers contain **transparent areas**, whereas the Cake layer does not.

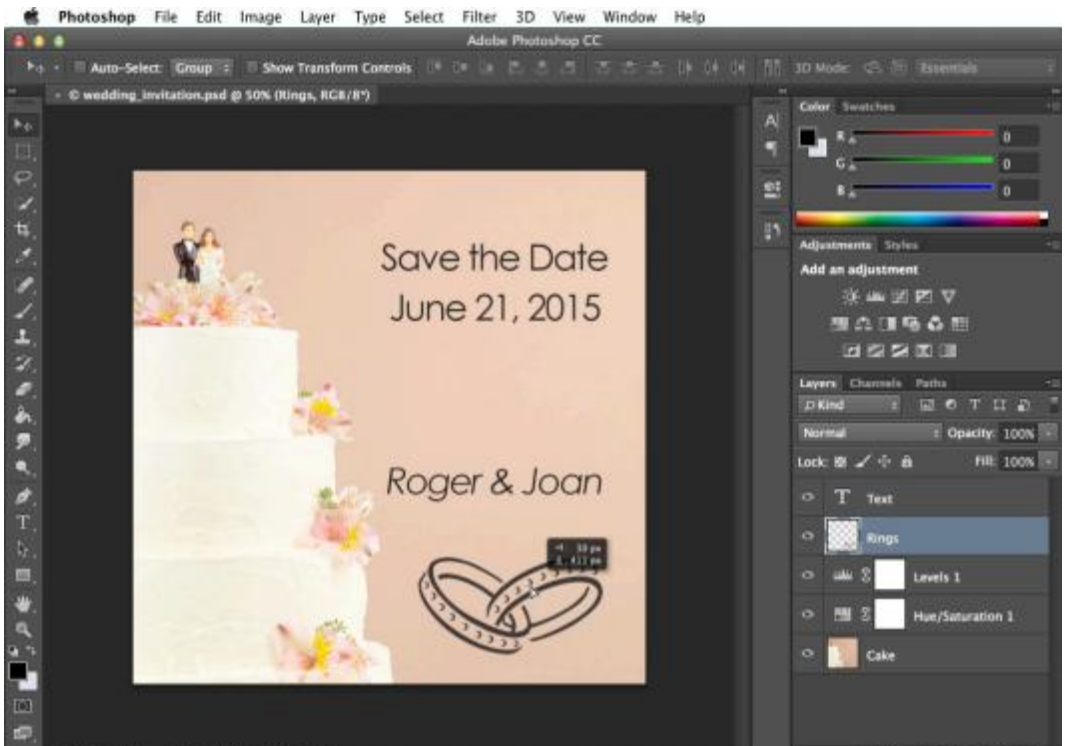
What if we wanted the layers below the Cake layer to show through? There are many ways to do this, including changing the **opacity** of the layer and adding a **layer mask**. We'll cover these options in our lesson on **doing more with layers**.

Editing layers

The main advantage of layers is that you can **edit or adjust each layer individually** without affecting the rest of the file. As we mentioned earlier, there are several types of layers you can use, along with many **editing tools**. However, it's important to note that not all editing tools will work with all types of layers. This will become easier to understand as you gain more experience with Photoshop.

Using editing tools

You can use tools from the **Tools** panel and the **Filter** menu to edit layers. For example, you can use the **Move** tool to move different layers around in your file. In the image below, we're using it to move the **Rings** layer toward the bottom of the image.



Selecting layers before editing

For many types of edits, the desired layer must be selected **before** editing; otherwise, the wrong layer might be edited by mistake. If you use the **Eraser** tool, for example, it will only affect the layer you have selected. It's helpful to get into the habit of checking the Layers panel frequently to make sure you have the correct layer selected.

Editing text layers

If you want to edit a text layer, double-click the **layer icon** in the **Layers** panel. You can then change the text, choose a different font, or modify the text size and color.

- In the example file, select the **Rings** layer, then use the **Move** tool to move the layer around the document.
- Double-click the layer icon for the **Text** layer, then try editing the text. For example, you could change the date from **June 21** to **June 15**.

While we've covered some fundamental information on layers, it's important to realize that there are many different ways to use them in Photoshop. We'll cover layers more throughout the tutorial, so you'll be able to build on the skills you've learned in this lesson.

Challenge!

If you'd like to follow along, you can download our **example file**. 1

Open the example file in Photoshop.

2 Try turning different layers **off** and **on** to see the effect.

3 Add a **Brightness/Contrast** adjustment layer, then use the sliders in the Properties panel to adjust the brightness and contrast.

4 Try **reordering layers** to see the effect.

5 Save the image as a **PSD file** to save your changes. This will preserve all of the layers so you can edit them again later if needed.

6 Use the **Save for Web** feature to export the image as a JPEG. Make sure to adjust the quality to find a balance between file size and image quality.

Lesson 8: Levels, Curves, and Color

Levels, curves and color

Images that come straight from a digital camera aren't always perfect. As you start to gain more experience with Photoshop, you may notice some **recurring problems** with images that you'll want to fix. For example, some images may be too bright, while others may be too dull. There are various **corrections** that can make your images look dramatically better. Some of the corrections we'll cover in this lesson include:

- **Levels and curves**: If you want to modify the **tonal range** of your image— for example, by making the **shadows** or **highlights** brighter or darker—you can adjust the **levels** or **curves**.
- **Saturation**: If the colors in an image are **muted** or **dull**, you can increase the **saturation**. You can also reduce the saturation to make colors more subdued.
- **Auto-adjustment tools**: If you're not exactly sure what type of corrections to make, Photoshop comes with several **automatic adjustment tools** that

can improve your images.

If you're new to image editing, you may want to review our lesson on **fixing common problems** from our **Image Editing 101** tutorial to learn more about the fundamentals of making these changes.

If you'd like to follow along, you can download some or all of our **example images**. Just click any of the images below to open a full-sized version, then right-click the full-sized version and select **Save Image As** to save it to your computer.

Using adjustment layers

We'll be using adjustment layers throughout this lesson to correct images. As we discussed in the **previous lesson**, adjustment layers are a type of **nondestructive editing** because they don't actually change anything about the original image. And because you can continue to tweak adjustment layers as you work, it's easy to try out different effects and get the image to look exactly the way you want.

Levels

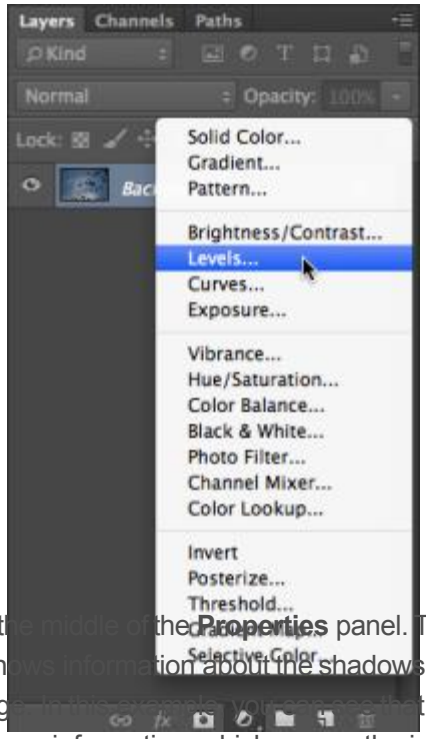
Every image has a mix of **shadows**, **highlights**, and **midtones**. Shadows are the **darkest parts** of the image, highlights are the **brightest parts**, and midtones are **everything in between**. When you adjust levels, you're adjusting these different tones. And while you could use the **brightness and contrast** tools for a similar type of adjustment, they're much less powerful than levels.

There are many reasons to use a levels adjustment. For instance, if you have a particularly dark—or **underexposed**—image, you might want to make the midtones and highlights brighter while keeping the shadows relatively dark. You can see an example of this in the images below.

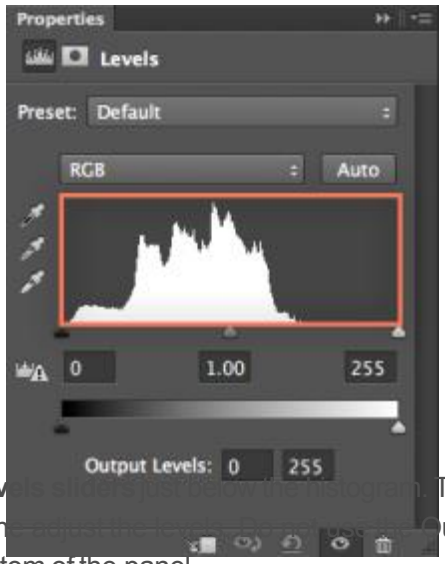
If you've never adjusted levels before, this tool may feel a little unintuitive at first. At this stage, the most important thing is to practice making different adjustments. As you start to gain more experience, you'll be able to use it more effectively. And remember, if an adjustment doesn't look right, you can always undo your changes and start over.

Adjusting levels

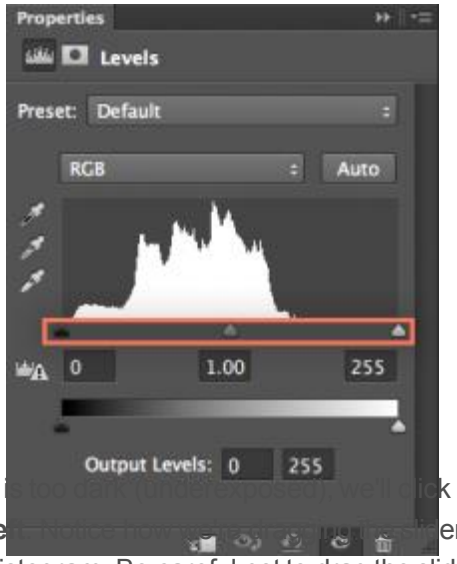
1 In the **Layers** panel, add a **Levels** adjustment layer.



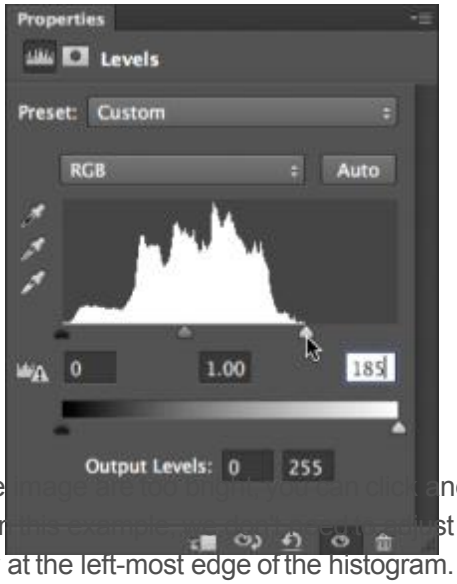
2 Locate the **graph** in the middle of the **Properties** panel. This is called a **histogram**, and it shows information about the shadows, highlights, and midtones of the image. In this example, you can see that there's a big gap on the right side with no information, which means the image is **underexposed**. We can use a levels adjustment to fix this.



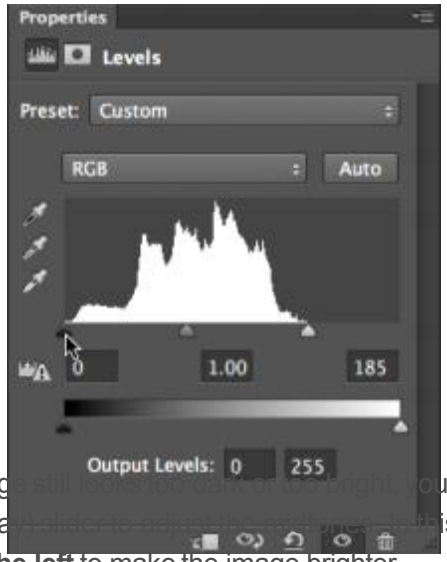
3 Notice the **Input Levels** sliders just below the histogram. These are the controls you'll use the most. You can also use the Output Levels sliders near the bottom of the panel.



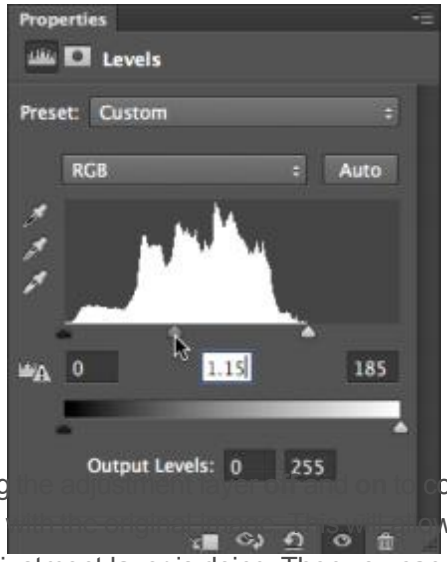
4 Because our image is too dark (underexposed), we'll click and drag the white slider **to the left**. However, rather than dragging it all the way to the **right-most edge** of the histogram. Be careful not to drag the slider past this point or you'll begin to lose detail in your image. This is commonly referred to as **clipping**.



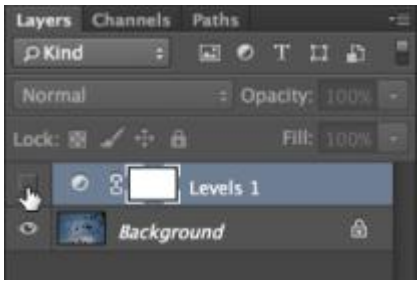
5 If the shadows in the image are too dark, you can click and drag the black slider **to the right**. In this example, you can't do this because the slider is already at the left-most edge of the histogram.



6 **Optional**: If the image still looks too dark or too bright, you can click and drag the middle (gray) slider to adjust the brightness. In this example, we'll move the slider **to the left** to make the image brighter.



7 **Optional**: Try turning the adjustment layer off and on to compare the new levels adjustments with the original. This will allow you to see exactly what the adjustment layer is doing. Then you can make any additional adjustments to the levels.



Try this!

Open the **dove_fullsize.jpg** example file and add a Levels adjustment layer. Click and drag each of the Input Levels sliders in the Properties panel to see the effect. Try to find the settings that look best for this image.

> Review our lesson on **reading a histogram** to learn more about what it can tell you about an image.

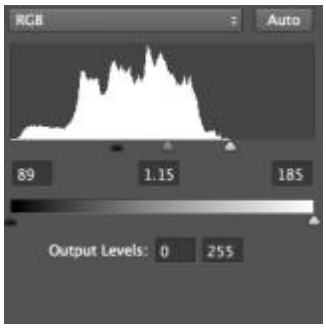
Levels adjustment tips

Here are a few tips for getting the best results with levels:

- If you're using multiple adjustment layers, you may need to readjust the levels after making changes to other adjustment layers.
- If you want to **compare** the levels adjustment with the original image, you can turn the adjustment layer **off** and **on**.
- Generally, you'll want to adjust the black and white sliders so they fit the data in the histogram. For example, in the image below we adjusted the white slider so it aligns with the right edge of the data.

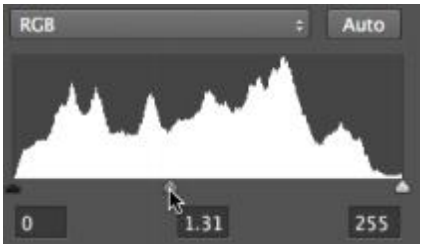
If you move the white slider too far to the left, you'll begin to lose detail in your image. This is known as **clipping**. In the image below, you can see that the clouds have lost a lot of detail, and the color of the sky has also changed. Both of these problems are caused by clipping.

If you move the black slider too far to the right, you'll start to see clipping in the image's shadows. In this example, the bird and branches have lost almost all of their detail. The color of the sky has also changed to a darker blue:



Remember, because you're using **adjustment layers** none of these changes are permanent until you export your image. So if you see any clipping in your image, don't panic! Simply look at your adjustment layers to find the source of the clipping, then readjust the levels as needed.

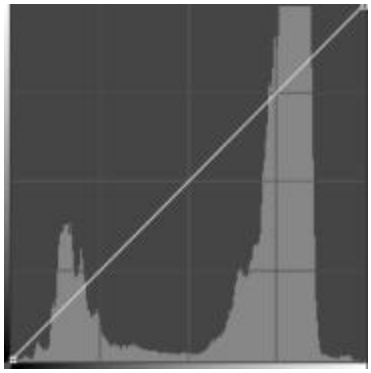
Note that the histogram will be **unique** for every image. If an image has the proper exposure, the histogram will be complete, with no data missing. Moving the black and white sliders in this situation would cause clipping. Instead, you can use the middle (gray) slider to increase or decrease the overall brightness.



Curves

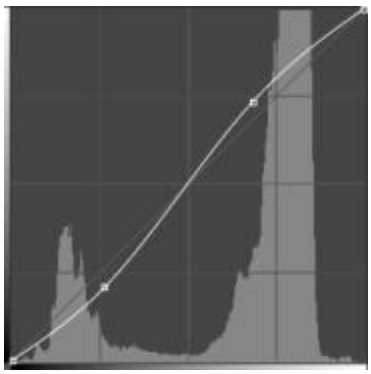
The Curves tool is similar to levels, but it gives you more power to control shadows, highlights, and midtones **separately**. Because it's a more advanced tool, you'll need to be careful when using it to adjust your images.

In the example below, you can see an image before adjusting curves. To the right, you can see the curve as it appears by default. Notice how the diagonal line is perfectly straight. When you make adjustments with curves, you're creating different curves **with this line**.



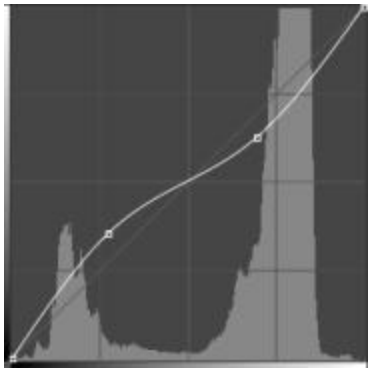
Increasing contrast

One of the simplest adjustments you can make with curves is to **increase the contrast**. To do this, drag the curve **down in the shadows** on the left to make them darker and **up in the highlights** on the right to make them brighter.



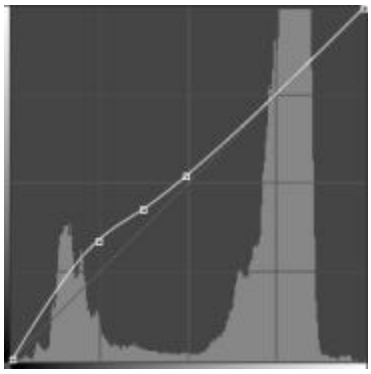
Decreasing contrast

In this particular image, it might be better to **decrease the contrast**. To do this, drag the curve **up in the shadows** on the left to make them brighter and **down in the highlights** on the right to make them darker. In the image below, you can see that this makes it easier to see details on the seagull's face.

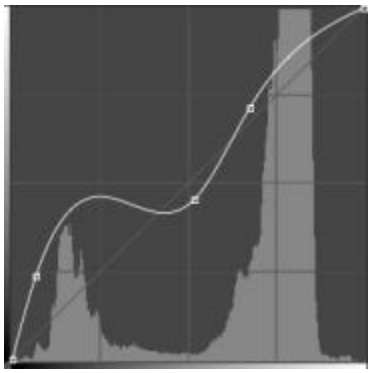


Other adjustments

You could also **increase the shadows** without changing the highlights. To do this, drag the curve **up in the shadows** on the left. Notice how we used **multiple points** to gently bring the curve back to the default position. This helps to prevent the curve from affecting the highlights or midtones. This allows us to make the seagull brighter without darkening or lightening the clouds.

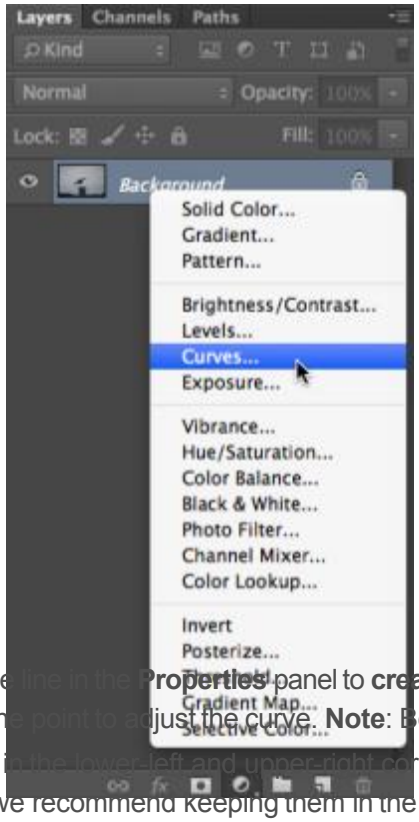


Try to avoid using big, steep curves. Whenever the curve moves too far away from the diagonal line, it can create problems with the image. In the example below, notice how the curve dramatically changes direction near the middle. This causes a significant loss of detail in the midtones, giving the seagull a flat, unnatural look.

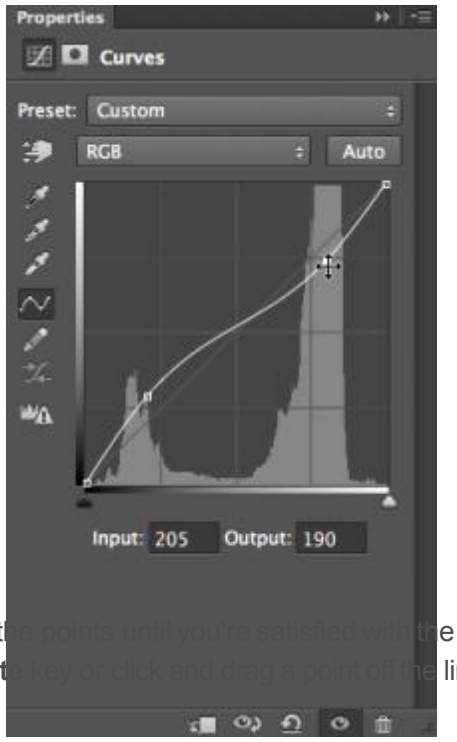


Adjusting curves

1 Add a **Curves** adjustment layer.

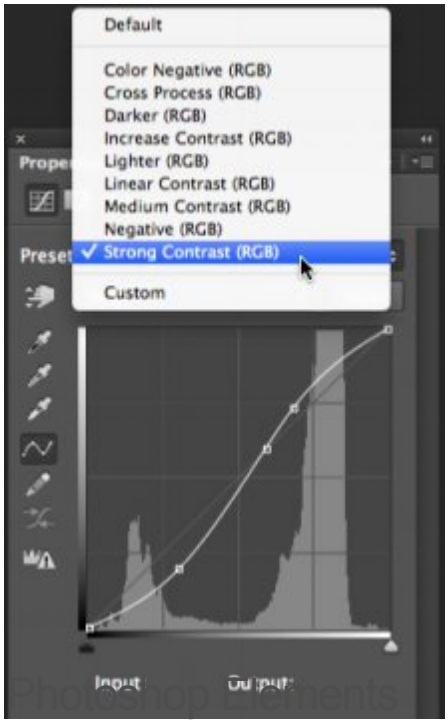


2 Click anywhere on the line in the **Properties** panel to **create a new point**, then click and drag the point to adjust the curve. **Note**: Be careful not to move the two points in the lower-left and upper-right corners. It is possible to adjust these, but we recommend keeping them in the corners until you gain more experience with curves.



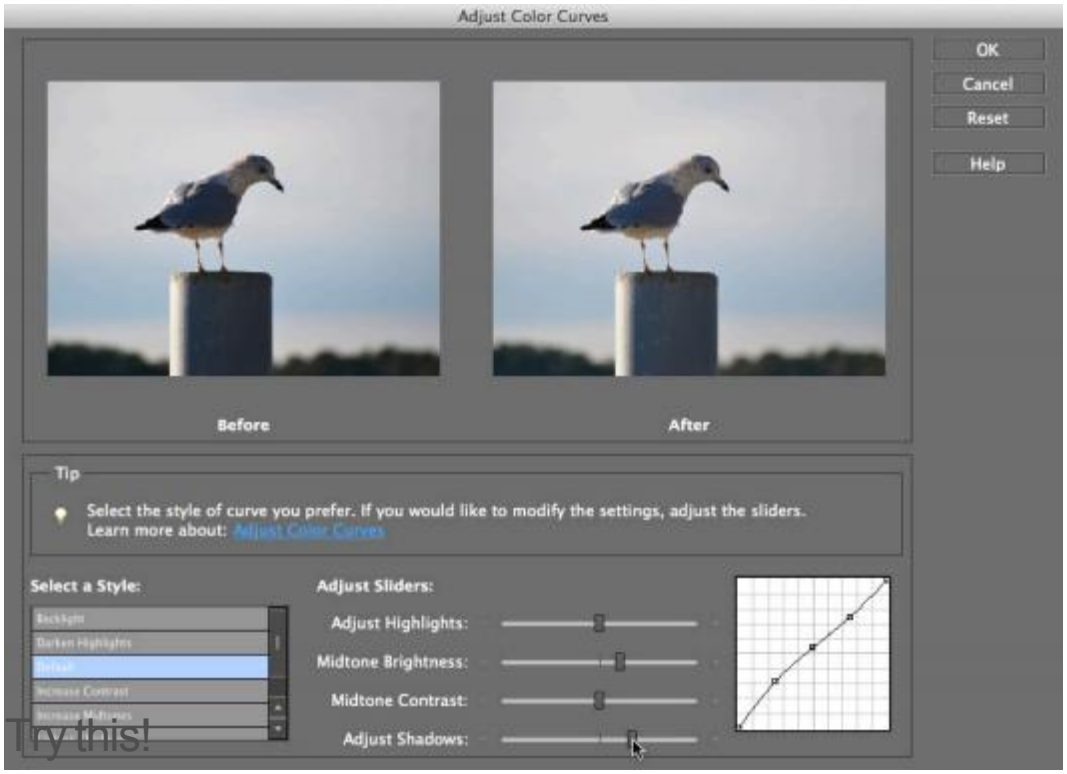
3 Continue to adjust the points until you're satisfied with the result. You can also press the **Delete** key or click and drag a point off the line to remove it.

If you're new to curves, you may want to select one of the **Preset** options and make small adjustments to the curve as needed. If you need to start over, you can select **Default** from the Preset menu.



Using Curves in Photoshop Elements

If you're using Photoshop Elements, you won't be able to create a Curves adjustment layer, but there is a similar tool you can use. To access this tool, select **Enhance > Adjust Color > Adjust Color Curves**. You can then click and drag the sliders to adjust the curve.



Open the **seagull_fullsize.jpg** example file and add a Curves adjustment layer. Try using some of the different options from the **Preset** menu, then move points on the curve to see the effect.

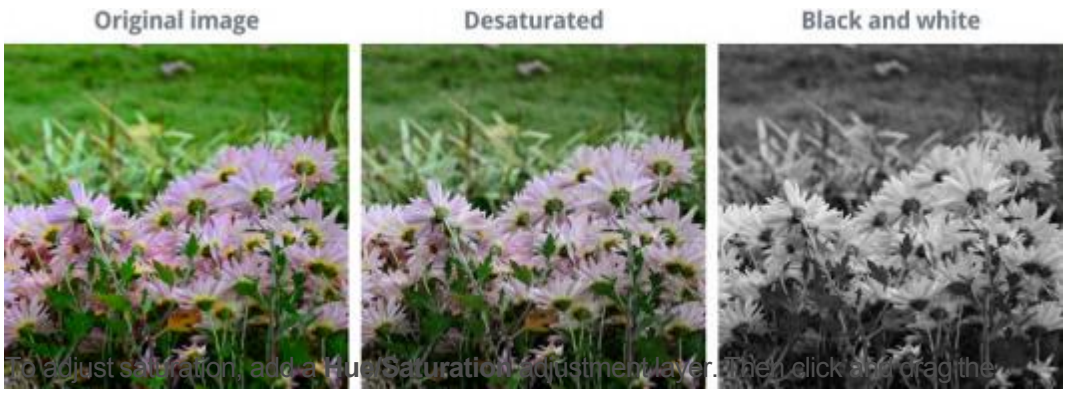
Color corrections

There will be times when you'll want to adjust the **colors** in an image. For example, you may want to modify the color intensity or even change colors for artistic effect.

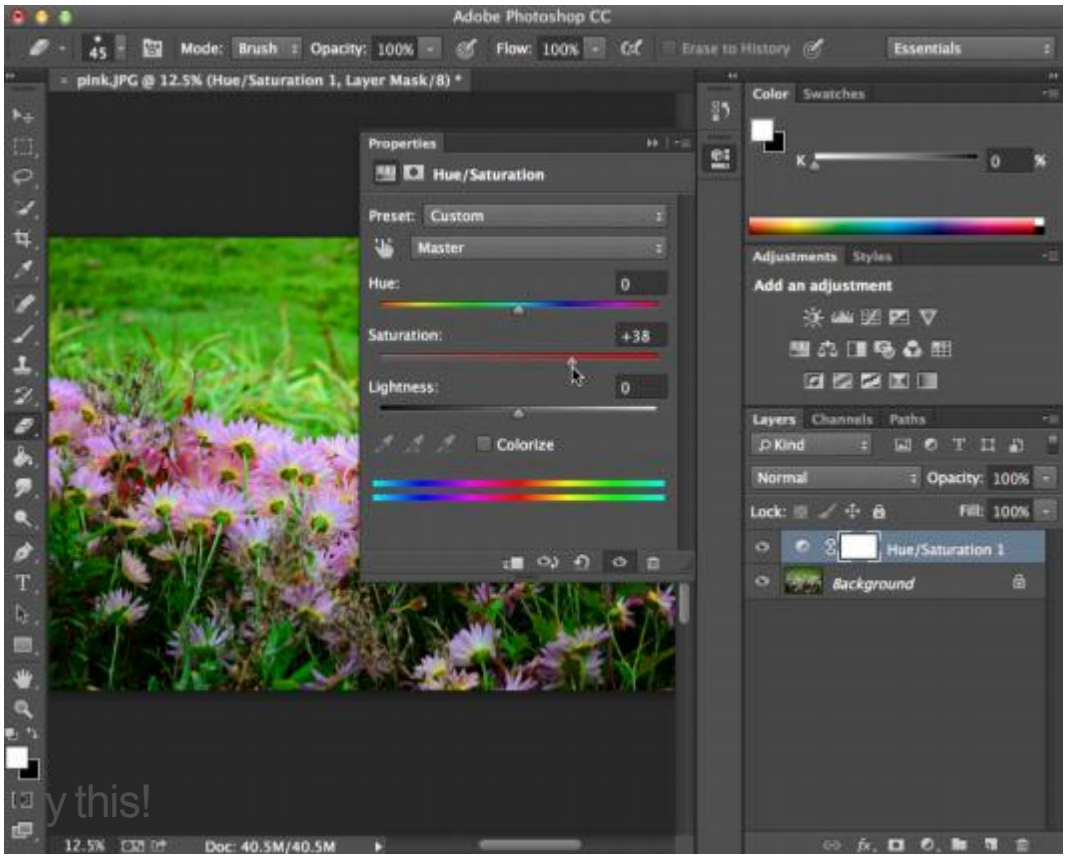
Saturation

If the colors in your image are **dull** or **muted**, you can increase the **saturation** to make them look **more vivid**. You can see an example of this in the images below.

On the other hand, you can reduce the saturation to make the colors less vivid. If you **remove the saturation** completely, it will produce a **black-and-white**, or **grayscale**, image. You can see an example of this in the images below.

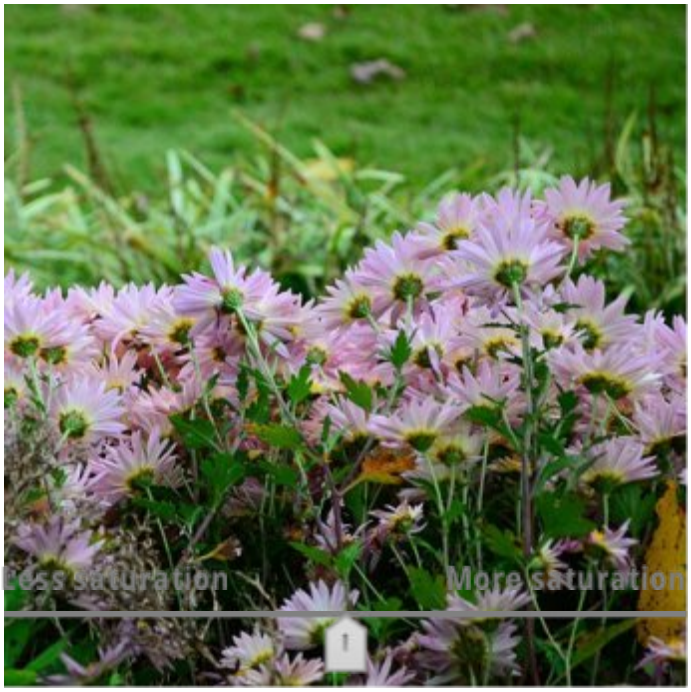


To adjust saturation, add a **Hue/Saturation** adjustment layer. Then click and drag the **Saturation** slider in the **Properties** panel to increase or decrease the saturation.



Drag the slider in the interactive below to adjust the saturation of the image. Careful, though! Too much saturation will cause the image to lose detail.

For best results, we recommend using the Chrome web browser with these interactives.



Saturation adjustment tips

Here are a few recommendations for getting the best results with saturation adjustments:

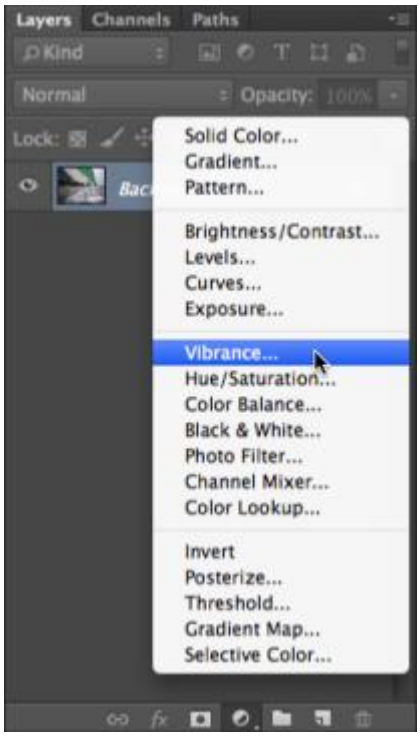
- Be careful not to increase the saturation **too much**. This can cause the colors to look **unnatural**, as in the example below.

- Increasing the saturation may also create image noise. We'll cover removing noise in the **next lesson**.

- For some types of pictures, especially portraits, increasing the saturation can look unflattering. In these cases, you may want to **decrease** the saturation.
- The **Hue** slider **changes all of the colors** in the image at the same time. This will often result in an unnatural color combination, so we don't recommend adjusting the hue unless you want an unusual effect.
- Although you could use the **Lightness** slider to increase or decrease the image brightness, you'll probably want to add a Levels or Curves adjustment layer instead. These will give you more control over image brightness.

Vibrance

Increasing the saturation can sometimes look a bit unnatural. One solution is to use a **Vibrance** adjustment layer instead of Hue/Saturation. Vibrance lets you **boost the saturation** for the parts of the image that are less colorful without oversaturating the parts that are already colorful.



Try this!

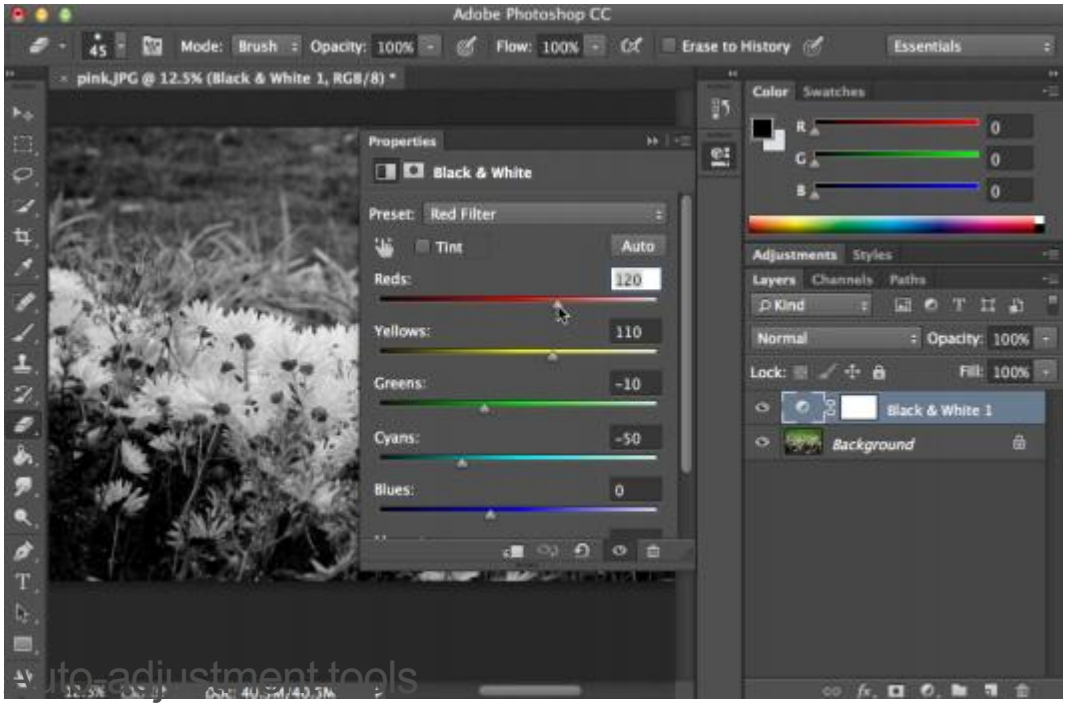
Open **pink_fullsize.jpg**, then add a **Hue/Saturation** adjustment layer. Take the saturation to the highest and lowest settings to see the effect. Try to find the setting that looks best for the image.

Converting to black and white

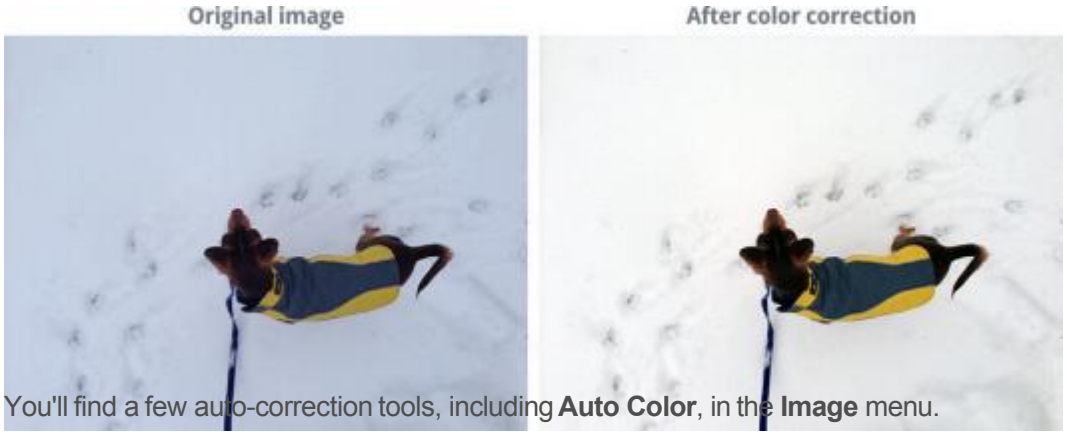
As we mentioned above, removing the saturation completely by setting it to **-100** will create a **black-and-white** image. However, this method doesn't give you much control over how the black-and-white version will look. For better results, you can create a **Black and White** adjustment layer.

Because black-and-white photos don't have colors, the tones (the different shades of gray) are especially important. A Black and White adjustment layer allows you to control **how the different colors are mixed** to create specific tones, which can make a significant difference in how the final image looks.

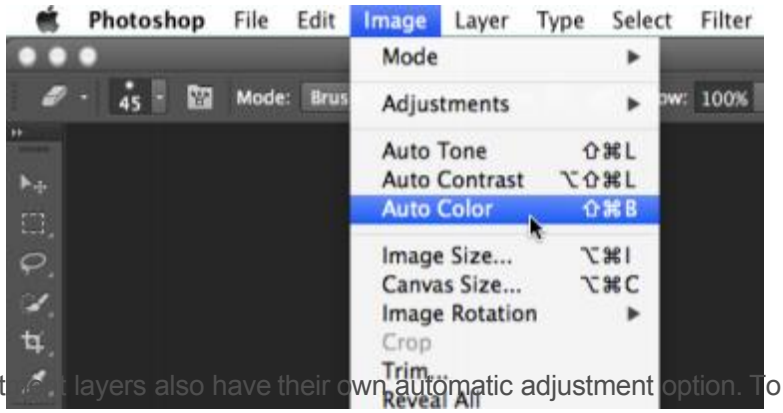
We recommend trying different options from the **Preset** menu until you find one that works well for the image. You can then make small adjustments to the individual colors as needed.



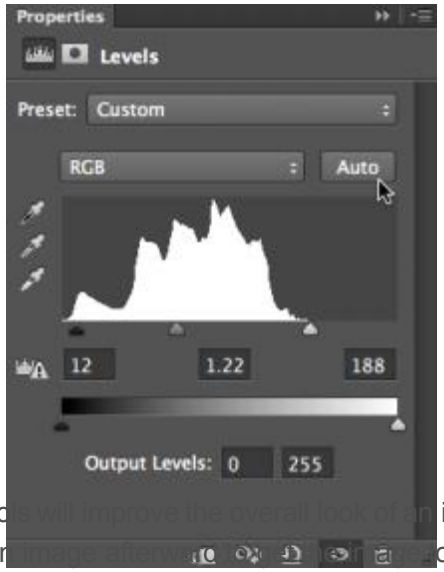
Some images may require more specialized corrections, which can be difficult to make if you don't have a lot of experience with Photoshop. Fortunately, there are several **automatic adjustment tools** you can use to improve your images. In the original image below, the snow has a blueish tint. After using the **Auto Color** command, the snow looks white.



You'll find a few auto-correction tools, including **Auto Color**, in the **Image** menu.



Many adjustment layers also have their own automatic adjustment option. To use this tool, create an adjustment layer, then click the **Auto** button in the **Properties** panel (if available).



Most of the time, these tools will improve the overall look of an image. However, you can always manually adjust an image afterward to look exactly the way you want. If the auto-correction goes too far, you could also try **reducing the opacity** of the adjustment layer to 50% to make the effect more subtle.

Try this!

Open the **dog_fullsize.jpg** example file, add a **Levels** adjustment layer, and use the **Auto Color** command in the **Image** menu.

Challenge!

If you want to practice making the adjustments we cover in this lesson, you can download some or all of our **example images**. Just click any of the images below to open a full-sized version, then right-click the full-sized version and select **Save Image As** to save it to your computer.

1. **Open an image** in Photoshop.

2. Try adding some of the different **adjustment layers** covered in this lesson. Experiment with multiple adjustment layers to see how they affect the image.

3. Save the image as a **PSD file**. This will preserve all of your adjustment layers so you can come back and continue editing them later on.

4. When you're finished editing the image, use the **Save for Web** feature to export it as a JPEG.

Lesson 9: Sharpening and Noise Reduction

Sharpening noise reduction

Photoshop includes several tools you can use to correct your images. In this lesson, we'll show you how to make the following corrections:

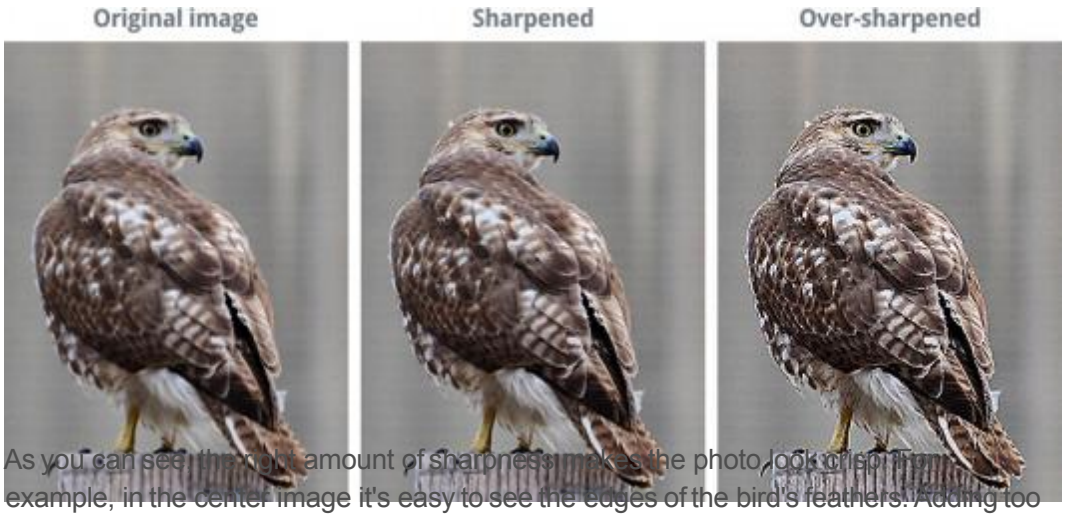
- **Sharpening**: If an image is **less clear** than you'd like it to be, you can **sharpen** it.
- **Noise reduction**: If an image has a lot of **noise**, or graininess, you can **reduce the image noise**.

We'll also cover the importance of using these tools correctly. If they are misused, sharpening and noise reduction can actually cause problems. If they are used with care, they're a great way to add polish to your images.

If you'd like to follow along, you can download some or all of our **example images**. Just click any of the images below to open a full-sized version, then right-click the full-sized version and select **Save Image As** to save it to your computer.

Sharpening

Sometimes an image may not be as clear as you'd like it to be. **Sharpening** can help make it look crisp and clear by **enhancing the edges** of objects in the image. However, adding too much sharpness can actually make an image look worse, or it can lead to a loss in image detail.



As you can see, the right amount of sharpness makes the photo look crisp. For example, in the center image it's easy to see the edges of the bird's feathers. Adding too much sharpness can cause the edges to look exaggerated and unnatural (these are known as **halos**), as in the image on the right. You may have also noticed that the background in the over-sharpened image has a lot of added **image noise**, or graininess.

Whenever you apply sharpening, you'll need to look critically at the image to see if you're getting the results you want. You'll often need to make careful adjustments to get the right amount of sharpening without introducing other problems like halos or noise.

Try this!

Drag the slider in the interactive below to adjust the sharpness of the image. Try to make the image look crisp but not over-sharpened.

> For best results, we recommend using the Chrome web browser with these interactives.

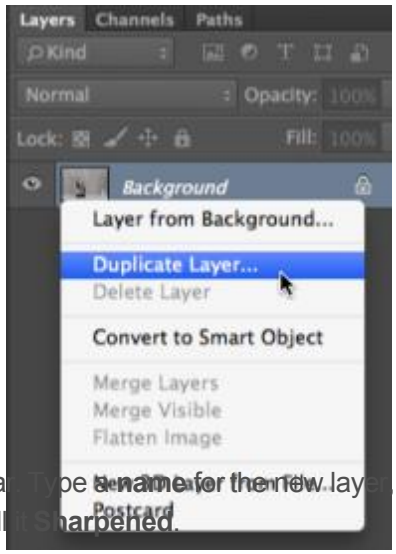
Unsharp mask

The **unsharp mask** filter is a common way to sharpen images in Photoshop. When you use this tool, you'll be able to control several settings, including:

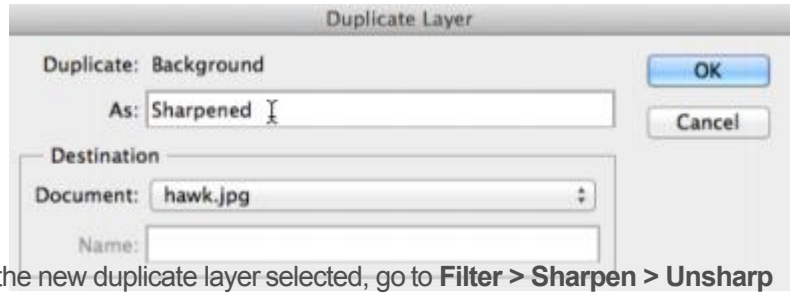
- **Amount**: The amount determines **how much sharpness** will be applied. The amount you'll need depends on several factors, including the overall image size, so it's good to experiment with this setting.
- **Radius**: The radius controls the **size** of the details that will be sharpened, so it's generally best to use a **very low value** for this setting. We recommend a radius between **0.3** and **0.5** for most images, although you may find it useful to use a slightly larger radius (between 1 and 1.5) for higher-resolution images.
- **Threshold**: Sharpening tends to make **image noise** more visible. Increasing the threshold can help to reduce this by telling the unsharp mask to **ignore certain parts of the image**. However, this can also mean that different parts of the image are not sharpened consistently. This is why we recommend keeping this setting at **0** most of the time, unless the sharpening is creating a lot of extra noise.

Applying an unsharp mask

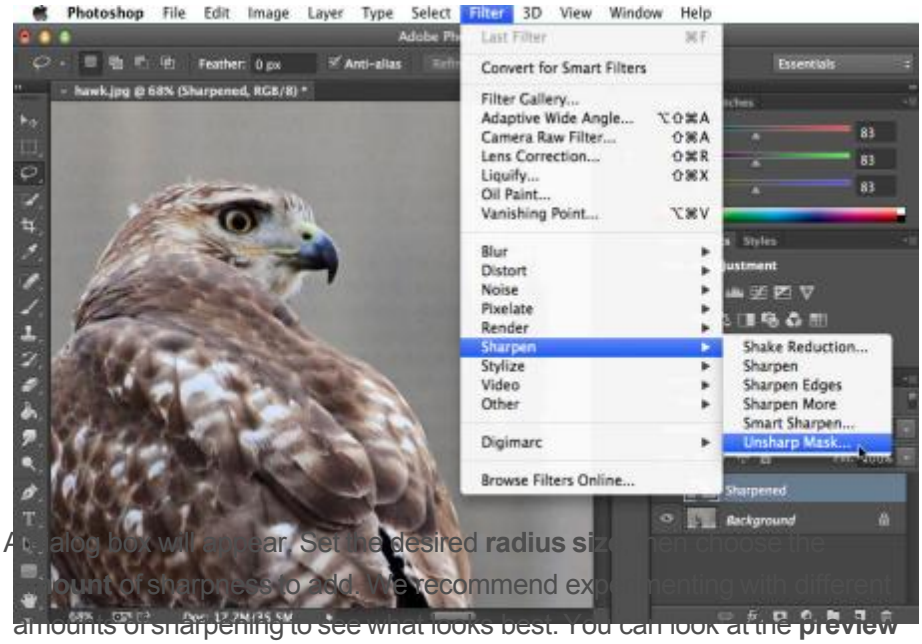
1 Right-click the layer you want to sharpen, then select **Duplicate Layer**. You'll apply the sharpening to this duplicate layer, which will prevent you from accidentally altering the original.



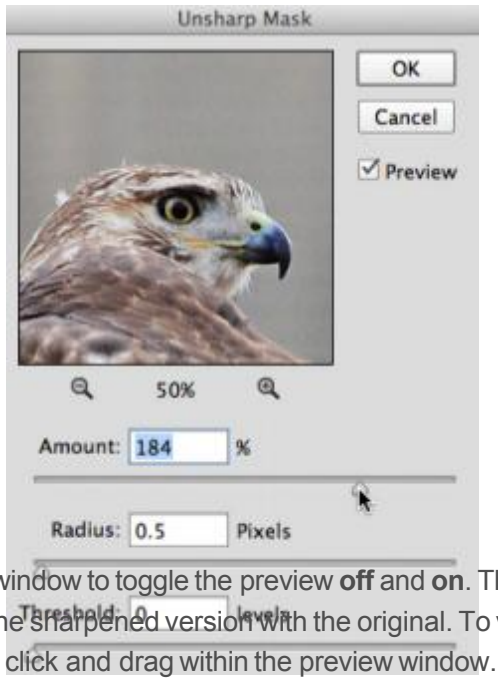
2 A dialog box will appear. Type a name for the new layer, then click **OK**. In this example, we'll call it Sharpened.



3 With the new duplicate layer selected, go to **Filter > Sharpen > Unsharp Mask**. If you're using Photoshop Elements, you'll need to go to **Enhance > Unsharp Mask**.



4 A dialog box will appear. Set the desired **radius size**, then choose the amount of sharpness to add. We recommend experimenting with different amounts of sharpening to see what looks best. You can look at the **preview window** above the sliders to see how sharpening is affecting the image.



5 Click the preview window to toggle the preview **off** and **on**. This is an easy way to compare the sharpened version with the original. To view a different part of the image, click and drag within the preview window. Note that you'll also see the preview in the main **document window**.

6 Continue adjusting the settings until you're satisfied with result, then click **OK**. The unsharp mask will be applied.

Try this!

Open the **hawk_fullsize.jpg** example file, duplicate the background layer, and apply an unsharp mask. Adjust the settings to find a balance between sharpness and a loss of detail.

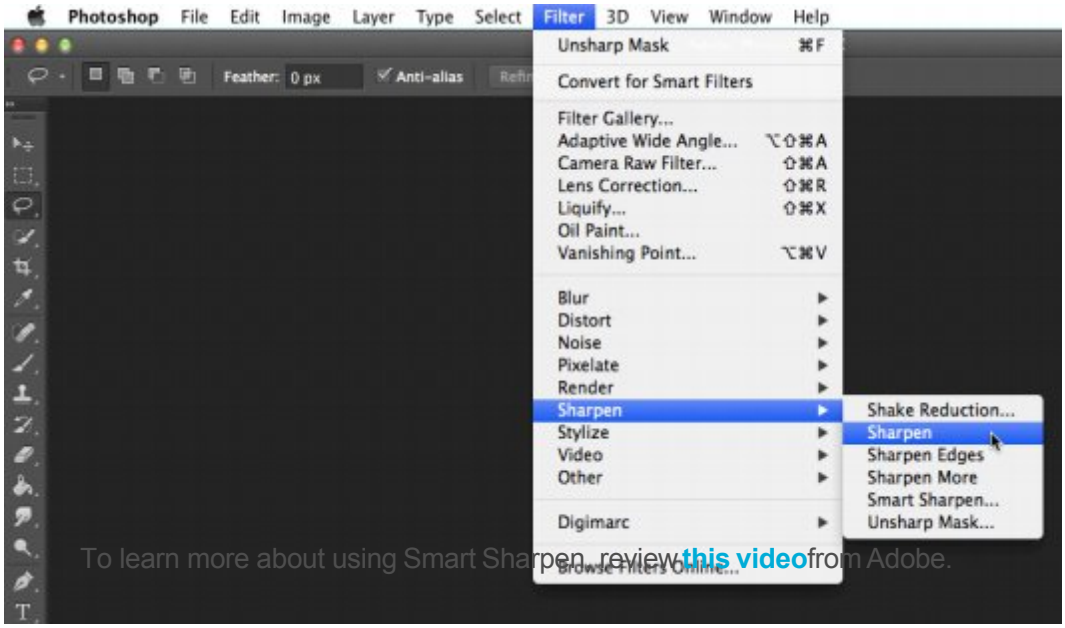
> To learn even more about sharpening, review **this tutorial** from Cambridge in Colour.

Sharpening tips

Here are a few tips for getting the best results with sharpening:

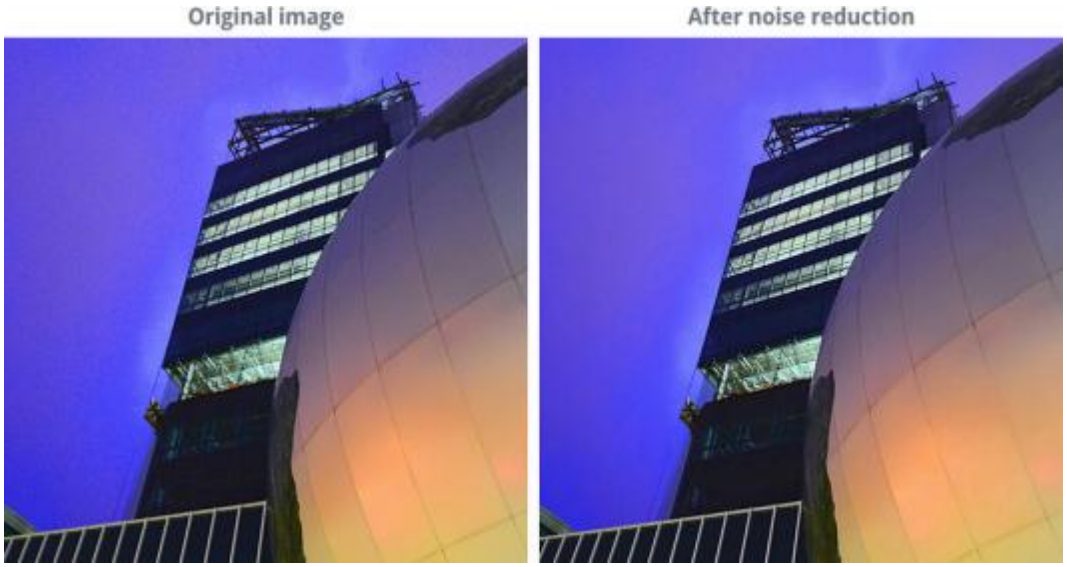
- If you increase the **amount** of sharpening that is added, there will generally be a point where the edges in the image will start to glow, causing them to look exaggerated. Whenever you see this happen, try **decreasing** the amount to make the sharpening look more natural.
- If the sharpening still looks a bit unnatural, you could try **reducing the opacity** of the sharpened layer to make the effect more subtle.
- Note that sharpening cannot fix an image that's **very blurry** or **out of focus**. It works best with images that are clear but have a slightly **soft** look.

- While the unsharp mask is a useful tool, Photoshop also includes other sharpening filters, which can be found in the **Filter > Sharpen** menu. Some filters, like **Sharpen** and **Sharpen More**, apply a preset amount of sharpening. Others, like **Smart Sharpen**, give you even more ways to tweak the adjustments (although this also means it's even trickier to use than the unsharp mask).



Noise reduction

Some images may have a lot of **noise**, which causes them to look **grainy**. You can compensate for this by **reducing the image noise**, as in the example below.



Understanding noise reduction

When you apply noise reduction, you're actually **removing information** from the image. Because of this, it's important to use this feature carefully to avoid removing too much noise, which can cause **blurriness** and a **loss of detail**. The goal of noise reduction is not to completely remove all noise from the image; instead, you're just trying to make the image look cleaner and clearer.

As with sharpening, you should always look critically at the image to see if you're getting the results you want. Losing a small amount of detail may be unavoidable when reducing noise, so you'll need to make careful adjustments to find the right balance. It's often better to remove less noise in order to preserve as much detail as possible.

When using this tool, you'll be able to control several settings, including:

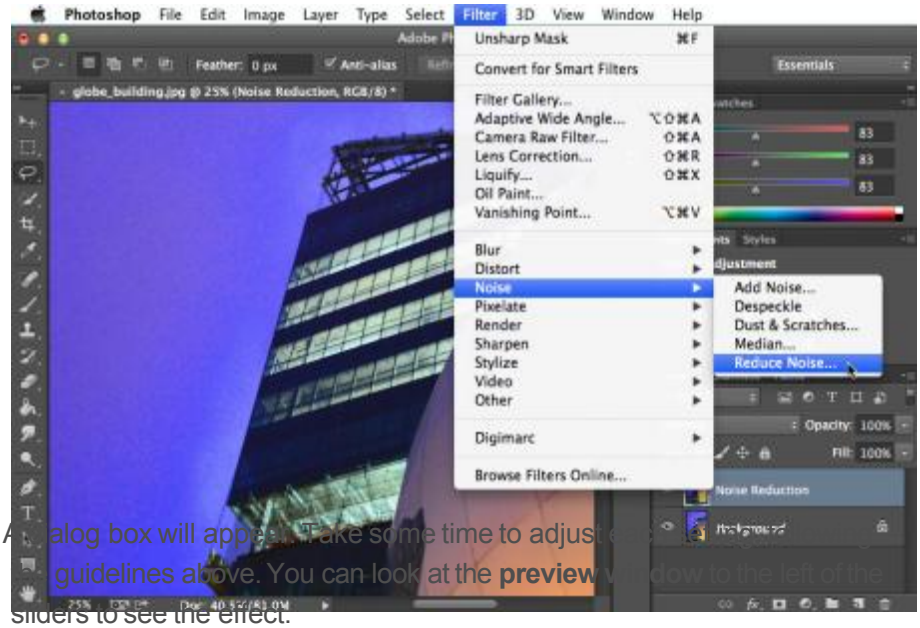
- **Strength**: This setting controls the overall level of noise reduction that will be applied. We recommend starting with this setting at the **maximum value (10)** because it will make it easier to see the effect the other settings have. After you've adjusted the other settings, you can decrease the strength as needed to get the desired amount of noise reduction.
- **Preserve Details**: This determines how many details from the original image will be preserved. If you use a value that's too low, the image will lose a lot of detail. However, anything too high will cancel out the effects of noise reduction. You'll want to experiment with this setting until you're satisfied with the result.
- **Reduce Color Noise**: Sometimes noise will look like small patches of individual colors, which is known as **color noise**. Increasing the Reduce Color Noise setting will help to reduce this. However, taking this setting too high can cause the different colors in your image to bleed together, so we recommend using a relatively low value for most images.
- **Sharpen Details**: Reducing image noise also causes the image to lose some sharpness. This setting allows you to **add sharpness** back to the details of the image. However, just like with **Preserve Details**, this can cancel out the effects of noise reduction, so be careful not to set it too high.

Try this!

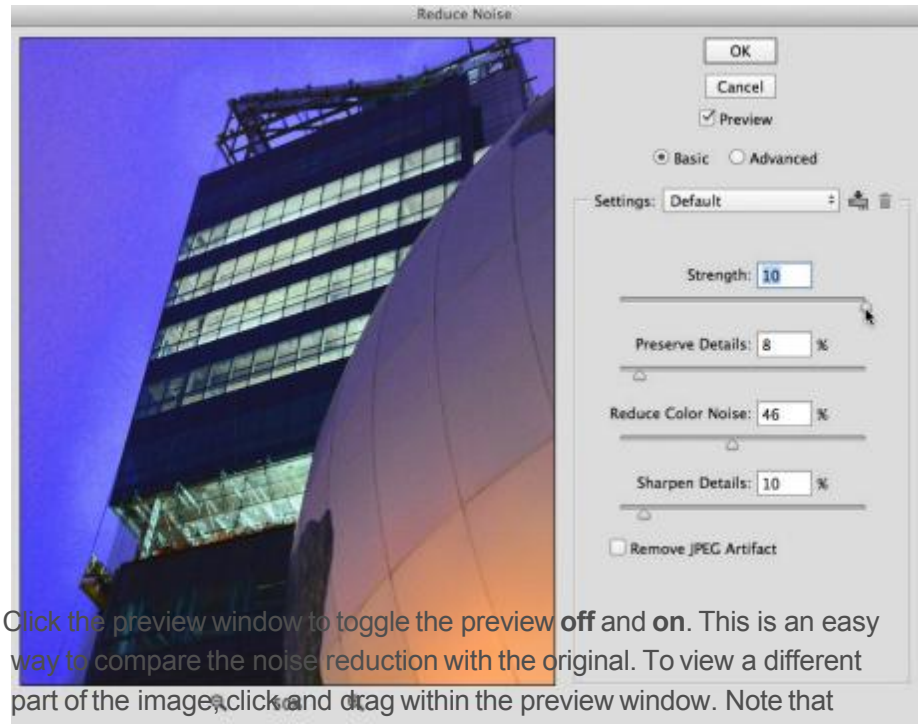
Drag the slider in the interactive below to adjust the level of noise reduction. Remember, removing too much noise will cause the image to lose detail. Try to find a level that makes the image look clean without losing too much detail.

Applying noise reduction

1. Right-click the desired layer, then select **Duplicate Layer**. You'll apply the noise reduction to this duplicate layer, which will prevent you from accidentally altering the original.
2. A dialog box will appear. Type a **name** for the duplicate layer, then click **OK**. In this example, we'll call it **Noise Reduction**.
3. With the new duplicate layer selected, go to **Filter > Noise > Reduce Noise**.



4 A dialog box will appear. Take some time to adjust the settings using the guidelines above. You can look at the **preview** window to the left of the sliders to see the effect.



5 Click the preview window to toggle the preview **off** and **on**. This is an easy way to compare the noise reduction with the original. To view a different part of the image, click and drag within the preview window. Note that you'll also see the preview in the main **document window**.

6 Continue to adjust the settings until you're satisfied with the results, then click **OK**. The noise reduction will be applied.

Try this!

Open the **globe_building_fullsize.jpg** example file, duplicate the background layer, and apply noise reduction. Adjust the settings to find a balance between noise reduction and a loss of detail.

Challenge!

If you want to practice making the adjustments we cover in this lesson, you can download some or all of our **example images**. Just click any of the images below to open a full-sized version, then right-click the full-sized version and select **Save Image As** to save it to your computer.

1. Open the **flower _fullsize.jpg** example file in Photoshop.

2. **Duplicate** the background layer, then apply an **unsharp mask**. Take some time to adjust the different settings, comparing the sharpened version with the original.

3. Open the **ferris wheel fullsize.jpg** example file.

4. **Duplicate** the background layer, then apply **noise reduction.** Take some time to adjust the different settings, comparing the noise reduction with the original.

5. When you're finished editing, use the **Save for Web** feature to export the images as JPEGs.

Lesson 10: Doing More with Layers

Doing more with layers

As we discussed in our lesson on **understanding layers**, there are many ways to use layers in Photoshop. So far, we've covered a few fundamental skills, including how to use adjustment layers. In this lesson, we'll cover some of the more advanced options, **like opacity**, **blending modes**, **layer masks**, and **layer groups**. We'll also provide links to additional resources if you want to learn more about using these tools.

If you'd like to follow along, you can download our **example file**.

Layer opacity

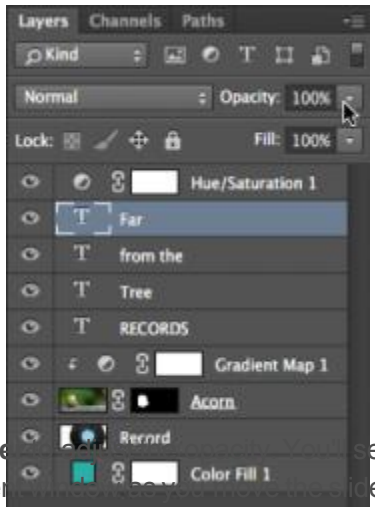
You can control the **opacity** for almost every layer in a Photoshop document. The opacity determines how **transparent** or **opaque** the layer will be. In other words, it controls how much the layers below can show through. Take a look at the example below.

This example uses two different Text layers and a Background layer. The **mountains** text layer has an opacity of **100%**. This layer is completely opaque, meaning nothing below the letters can show through. By contrast, **the appalachian** text layer has an opacity of **15%**. This layer is mostly transparent, meaning you can **see through** the letters to the background layer.

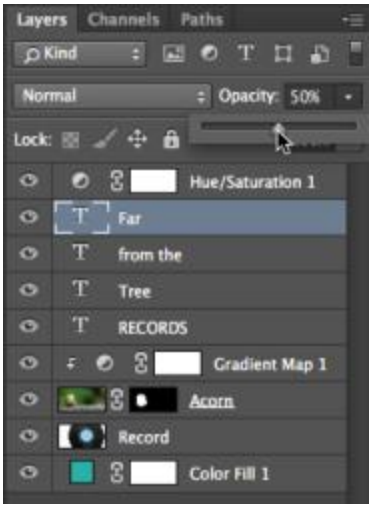
You can also change the opacity of an **Adjustment layer** to make it more subtle. For example, if you have a Curves layer that is too intense, you could reduce the opacity to 70-80%. In many situations, this may be easier than modifying the adjustment layer itself.

Adjusting layer opacity

1 Select the desired layer, then click the **Opacity** drop-down arrow at the top of the **Layers** panel.



2 Click and drag the **slide** ee the layer opacity change in the docume er. If you set the opacity to 0%, the layer will become **completely transparent**, or invisible.

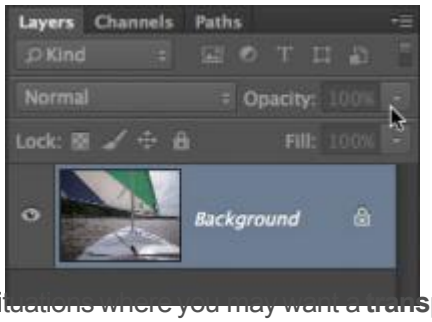


Try this!

Open the example file, then adjust the opacity of the **Text layers** to see the effect.

Background transparency

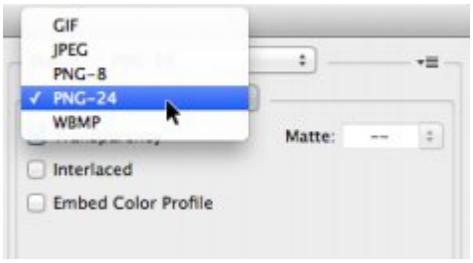
By default, most Photoshop documents use a **Background** layer. You cannot adjust the opacity of a **Background** layer, and it cannot be hidden. This is because you won't want the background to have transparency for most projects, especially if you're working with a photograph.



However, there are some situations where you may want a **transparent background**. If you're creating a logo for a website, for example, a transparent background will allow the website's background color to show through, giving the logo a more seamless and professional look.

If you're following along with the example file, try **hiding all layers except the Acorn layer**. See the **checkerboard pattern** behind the acorn? This means the background is **completely transparent**. The checkerboard won't actually be exported when you save your image; it's only there to indicate transparency.

Note that if you want your image to have a transparent background, you'll need to save it in a **format that can handle transparency**. We recommend using the **PNG-24** format, which is available in the Save for Web dialog box. JPEG files are unable to have transparent backgrounds, so they will save all transparent areas as white.

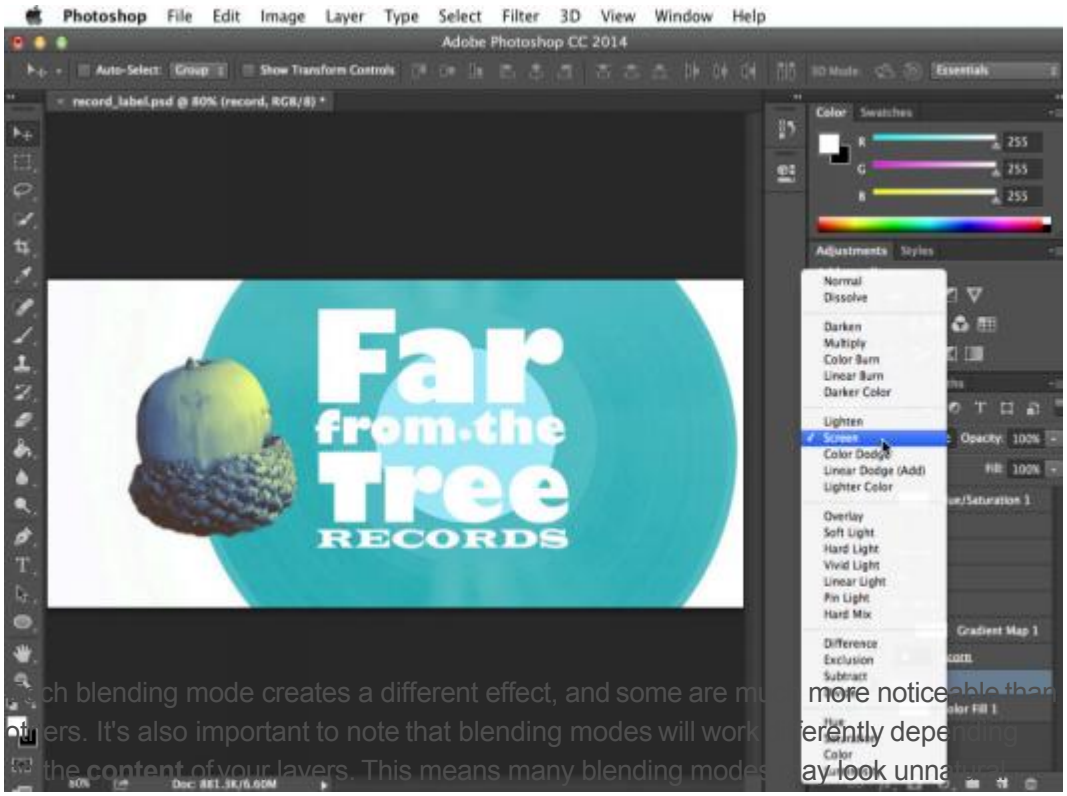


Blending modes

In addition to adjusting opacity, you can use different **blending modes** to control how the layers in your document are mixed together. The blending mode menu is located at the top of the **Layers** panel, next to Opacity.

If you're following along with the example file, select the **Record** layer. Notice that the blending mode is set to **Multiply**. Even though the opacity of the Record layer is set to 100%, this blending mode allows the turquoise color from the layer below to show through.

allow the turquoise background to show through, but this time it appears on the record instead.



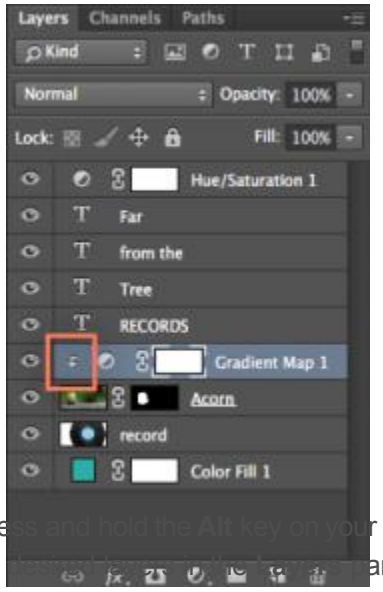
ch blending mode creates a different effect, and some are mu more noticeable than ers. It's also important to note that blending modes will work ferently depending the content of your layers. This means many blending modes ay look unnatural and it's unlikely that all of the modes will look good in your project.

> While blending modes give you a lot of flexibility, they can also be tricky to use. To learn more about blending modes, review **this tutorial** from Photo Blog Stop.

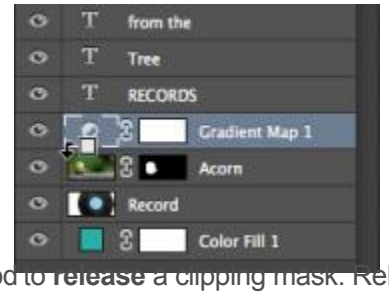
Clipping masks

Earlier in this tutorial, we covered using adjustment layers to correct images. By default, adjustment layers will affect all layers below them. However, there may be times when you only want an adjustment layer to affect **one layer**. To do this, you can use a **clipping mask**.

If you're following along with the example file, locate the **small arrow** next to the **Gradient Map** layer. This indicates that a clipping mask has been applied, which limits the adjustment layer to just the **Acorn** layer below.



To apply a clipping mask, press and hold the Alt key on your keyboard (or **Option** on a Mac), then click between the layers in the Layers panel. In this example, we're clicking between the Gradient Map and Acorn layers.



You can also use this method to **release** a clipping mask. Releasing a clipping mask does not delete the layer, but it causes it to **behave like a normal layer**. For example, if you release the clipping mask for the Gradient Map layer in the example file, it will affect the color of all of the layers below it instead of only affecting the Acorn layer.

> It's also important to note that you can apply a clipping mask to multiple adjustment layers above the same layer. For this reason, if you're already using clipping masks in your document, new adjustment layers may use a clipping mask automatically.

Try this!

Open the example file. Select the **Acorn** layer, then add a **Curves** adjustment layer. Make sure a clipping mask is applied to the new layer, then modify the curves in the Properties panel. Notice how the curves adjustments only affect the Acorn layer. Next, try **reducing the opacity** of the adjustment layers to **70%**.

> To learn more about clipping masks, review **this tutorial** from Adobe.

Layer masks

Sometimes you may want only certain parts of a layer to be visible. For example, you might want to **remove the background** from a layer so the layers below it can show through. While you could use the **Eraser** tool to remove the parts you don't want, this type of destructive editing may be difficult to undo. Fortunately, **layer masks** allow you to show and hide parts of any layer in a nondestructive way.

Creating a layer mask can be a bit complicated, so let's start by looking at one that's already finished. If you're following along with the example file, select the **Acorn** layer. Here, we used a layer mask to hide, or **mask out**, the background so the acorn is the only part of the layer that's visible. The layer mask is represented by the black-and-white thumbnail to the right of the layer icon in the **Layers** panel. Notice how the areas that are visible in the document window correspond with the white area on the layer mask thumbnail.

e important thing to recognize here is that the backgrou
ually be
just hidden. If we ever wante
image, we could **edit** or even **remove** the layer mask.

Editing a layer mask

To better understand how layer masks work, let's try editing the the Acorn layer mask. We'll be using the **Brush** tool, so if you've never used it we recommend reviewing our lesson on **working with brushes**.

1. Select the layer mask thumbnail in the **Layers** panel. In our example, we'll select the thumbnail next to the **Acorn** layer.

2. Next, choose the **Brush** tool from the **Tools** panel, then set the **Foreground Color** to **white**.

3 Click and drag your image to **reveal areas** in the layer. In this example, we're revealing more of the background by adding white paint to the layer mask.

4 Set the Foreground Color to **black**, then click and drag your mouse as in the layer.

5 Continue using the Brush tool until you're satisfied with the result.

You'll need to take your time and work carefully to get the best possible result, especially when refining the edges of the layer mask around an object. It may be helpful to adjust the **size**, **hardness**, and **opacity** of the Brush tool.

Creating a new layer mask

Now that you know more about layer masks, you may want to try creating your own.

1 Select a layer, then click the **Layer Mask** button at the bottom of the **Layers** panel. In our example, we'll create a new layer mask for the **record** layer.

2 The layer mask will appear as a white thumbnail next to the layer icon in the **Layers** panel. You can then select the thumbnail and use the **Brush** tool to edit the layer mask.

Note that you can apply multiple layer masks to the same layer. However, this can become complicated, so we recommend using only one layer mask per layer.

Using layer masks with adjustment layers

You can use a layer mask to control **which areas of your image are affected** by an adjustment layer. For example, if you have a **Black and White** adjustment layer, you could use a layer mask to convert specific areas to black and white while leaving other areas unaffected.

Every adjustment layer has a layer mask by default, so you won't need to create a new one. You can simply click the layer mask and then use the Brush tool to edit it.

Removing a layer mask

1 Click and drag the layer mask thumbnail to the **Trash Can** in the lower-right corner of the **Layers** panel.

2 A dialog box will appear. Choose **Delete** to remove the layer mask. Choosing **Apply** will actually remove the parts of the layer that are currently

hidden, so you'll want to avoid this option unless you're absolutely sure that you no longer need these parts of the image.

You can also press and hold the **Shift** key and click the thumbnail to temporarily disable the layer mask.

Creating and editing layer masks can be a challenging task, and there are many other methods for achieving good results. To learn more, review

these tutorials:

- **Mask Out Part of an Image** (Adobe)
- **A Complete Beginner's Guide to Masking in Photoshop** (Design Shack)

Layer groups

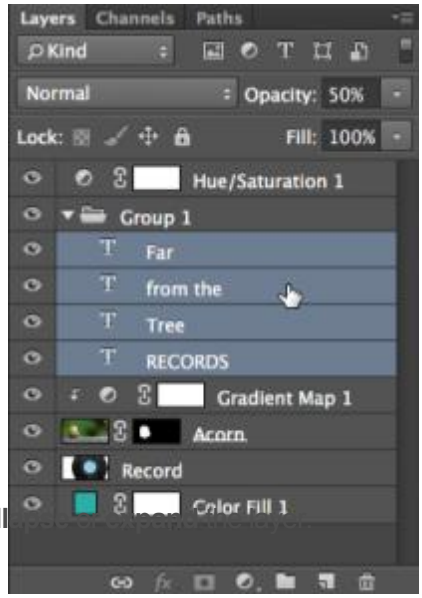
Once you start working with multiple layers in your document, it can be difficult to keep them organized. Fortunately, Photoshop allows you to **group** your layers. You can use groups to keep related layers together, move and edit multiple layers at once, and much more.

Creating a group

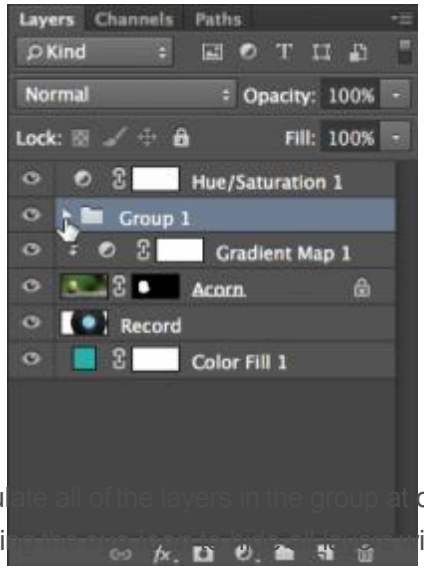
1 Locate and select the **Group** button at the bottom of the **Layers** panel.

2 A new empty group will appear. If you want, click and drag the group to **reorder it** within the Layers panel.

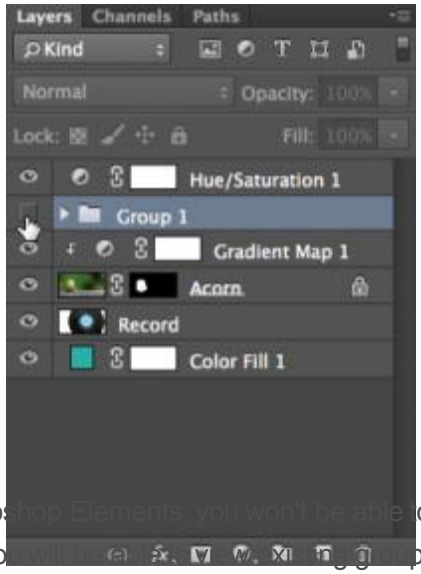
3 Click and drag any layer to the **group icon** in the Layers panel, then release the mouse. Layers that are in a group will be slightly indented from the other layers in the panel.



4 Click the arrow to **coll**



5 You can now manipu ate all of the layers in the group at once. In this example, we're clicki ithin the group.



If you're using Photoshop Elements, you won't be able to create new groups. However, you will still be able to open files with groups when working with files created in the full version of Photoshop.

Try this!

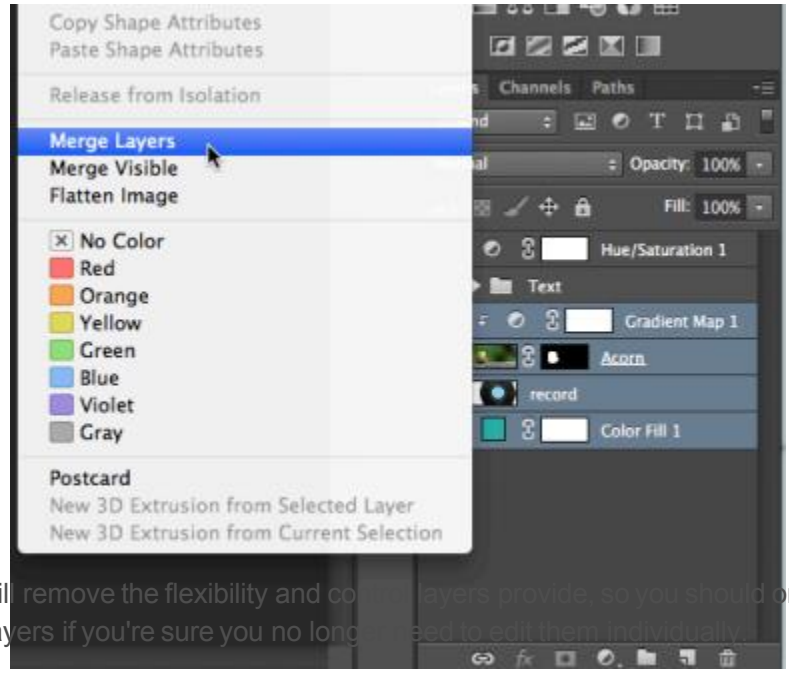
Open the example file and **create a group**. Click and drag all of the **Text** layers into this new group. Next, select **Group 1**, then **reduce the opacity to 70%**. Notice how this changes the opacity for all layers within the group.

To learn more about layer groups, review **this tutorial** from Adobe.

Merging and flattening layers

If you no longer need to edit certain layers, you might consider **merging** them. There are many reasons you might want to combine certain layers. For example, if you have multiple adjustment layers you might want to merge them into a single layer before applying other changes, such as sharpening or noise reduction.

To merge layers, select the first layer, press and hold the **Shift** key, and click the last layer you want to merge (all of the layers between the first and last will be selected). Next, right-click the layers and select **Merge Layers**. You can also select the layers and then press **Ctrl+E** (or **Command+E** on a Mac).



Merging will remove the flexibility and control layers provide, so you should only combine layers if you're sure you no longer need to edit them individually.

> **Note**: Make sure to right-click the **layer name**, not the layer icon. Otherwise, the menu will not appear.

You can also combine all of the layers in your document into a single **Background** layer. This is known as **flattening** the image. To do this, right-click any layer, then select **Flatten Image**.

Flattening an image is one way to simplify a complex Photoshop project. However, it's important to note that you **do not need to flatten images** before exporting them. When saving a project as a JPEG or PNG file, all of the layers will be flattened automatically because these file formats cannot have multiple layers.

Try this!

Open the example file. Select the **Gradient Map** and **Acorn** layers, then **merge** them.

> To learn more about merging layers, review **this video tutorial** from Adobe.

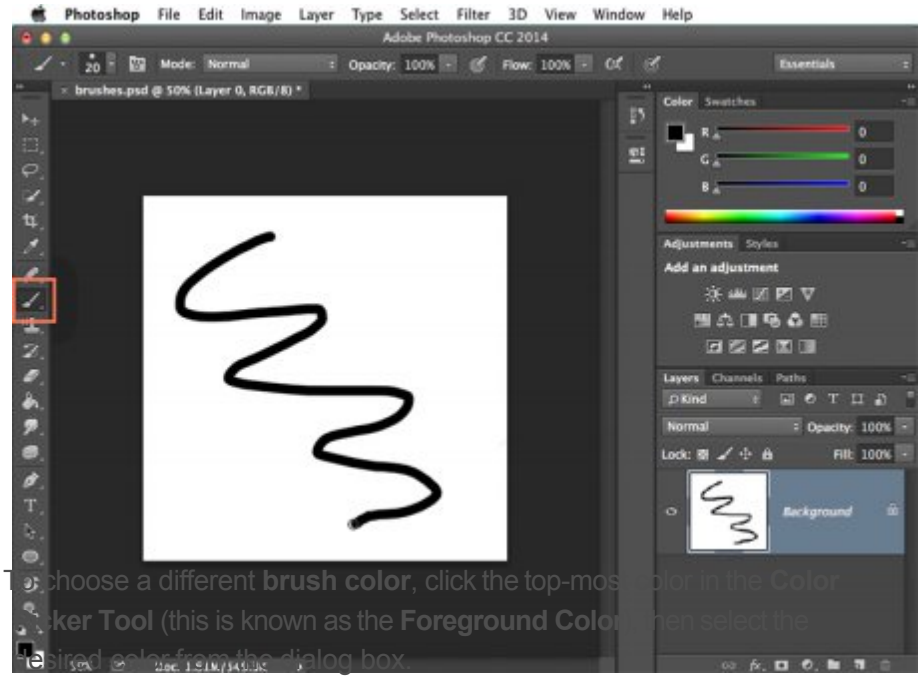
Lesson 11: Working with Brushes

Working with brushes

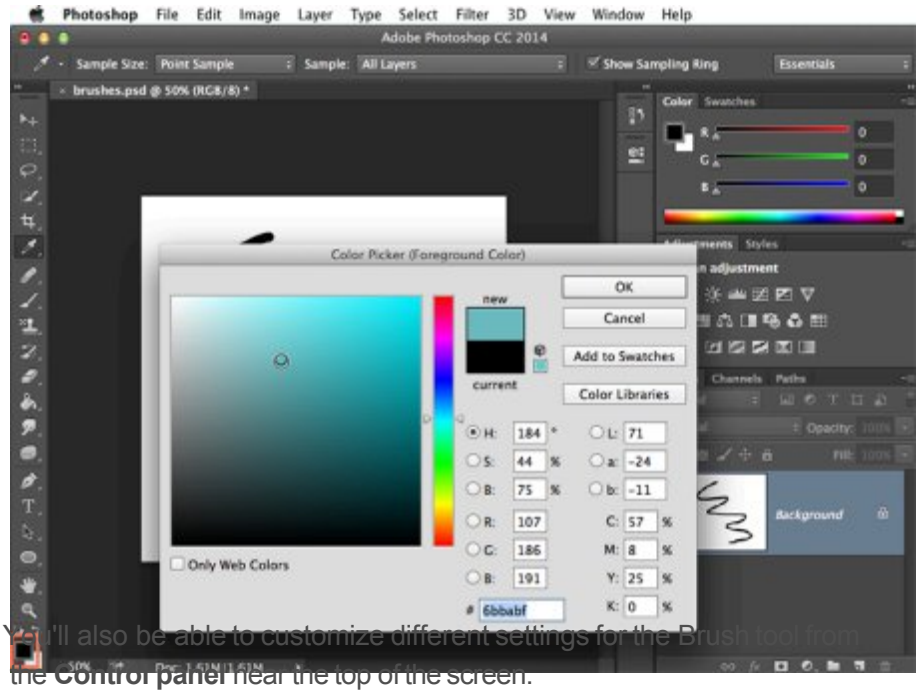
The **Brush** tool allows you to **paint** on any layer, much like a real paintbrush. You'll also have different settings to choose from, which can help you customize it for different situations. Once you know how to use the Brush tool, you'll notice that many other tools, including the **Eraser** and the **Spot Healing Brush**, use a similar group of settings.

Using the Brush tool

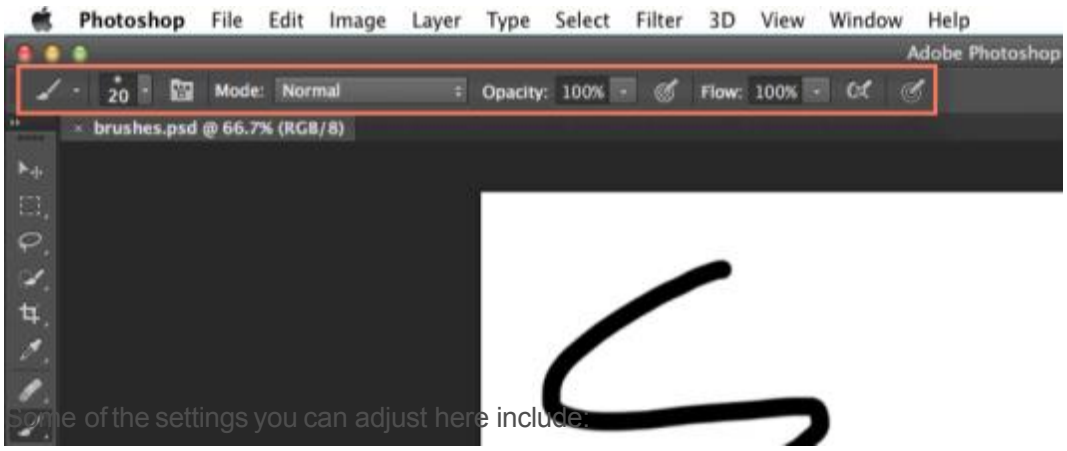
1 It's easy to use the **Brush** tool to paint in your document. Simply locate and select the **Brush** tool from the **Tools** panel, then click and drag in the document window to paint. You can also press the **B** key on your keyboard to select the Brush tool at anytime.



2 To choose a different **brush color**, click the top-most color in the Color ...cker Tool (this is known as the **Foreground Color**), then select the desired color from the dialog box.

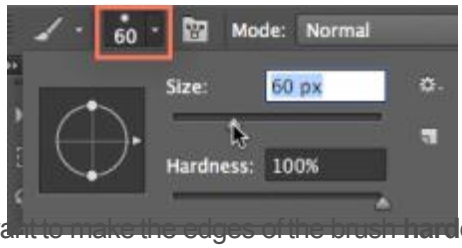


3 You'll also be able to customize different settings for the Brush tool from the **Control panel** near the top of the screen.



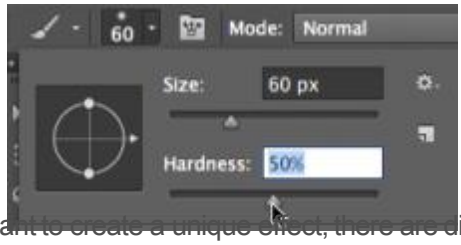
Some of the settings you can adjust here include:

- **Brush Size**: If you want to make the brush **larger** or **smaller**, click the **Brush Picker** drop-down arrow in the Control panel, then adjust the **Size** slider. You can also press the **bracket keys [ ]** to quickly increase or decrease the brush size at anytime.



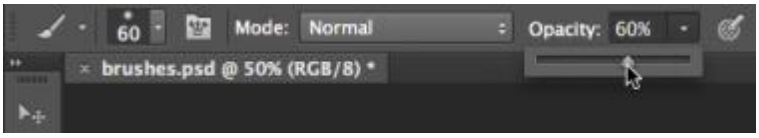
- **Hardness**: If you want to make the edges of the brush **harder** or **softer**, you can adjust the **hardness** from the same drop-down menu. A harder brush

will have clear, defined edges, whereas a softer brush will have blurry, less-defined edges. For most situations, we recommend setting the hardness to 50% or less because it will help to make individual brush strokes less obvious.



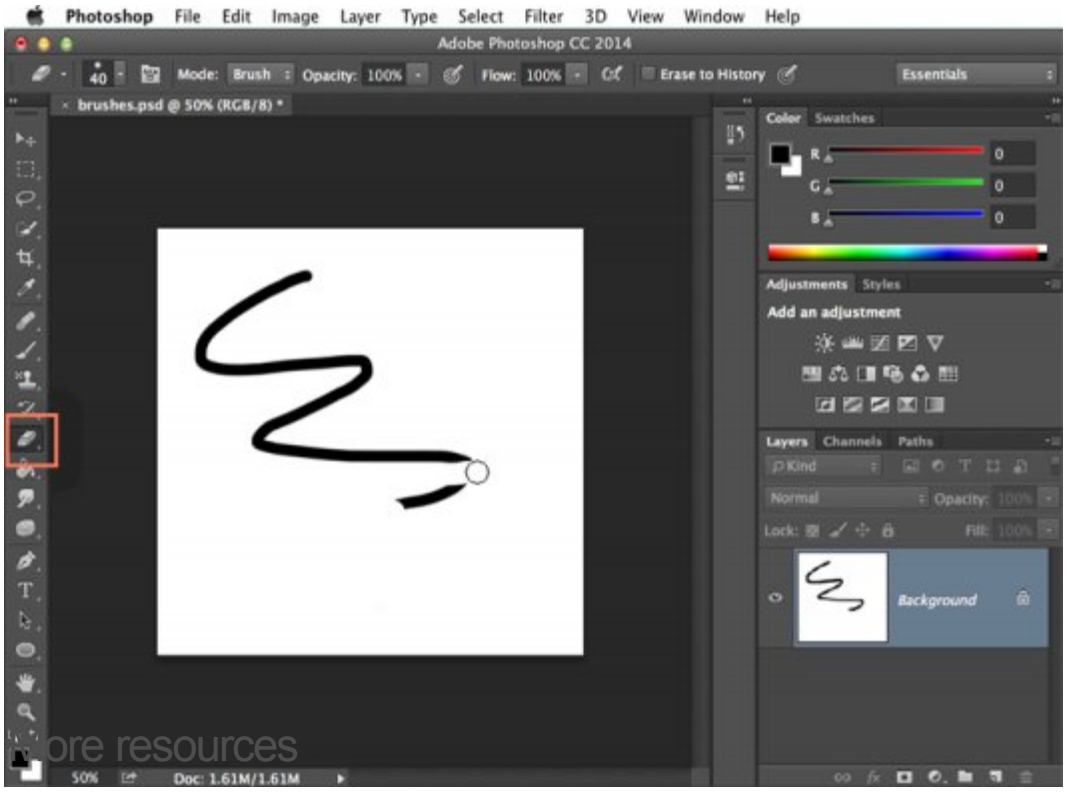
- **Brush Tip**: If you want to create a unique effect, there are different **brush tips** to choose from in the same drop-down menu. Some of these are designed to mimic real-life drawing tools like pens and markers, while others are simpler.

- **Opacity**: By default, the opacity of your brush is set to 100%, meaning the brush will use the highest intensity. However, you can **reduce the opacity** of your brush to make it less intense.



Other tools that use Brush settings

As we mentioned above, many other tools work in a similar way. For example, if you select the **Eraser** tool, you can click and drag in the document window to erase parts of the selected layer. You can adjust the Eraser tool by changing the **size**, **hardness**, **opacity**, and more from the Control panel.



There are many ways to use brushes in Photoshop, and mastering them will take both time and practice. If you're ready to learn more about brushes, review these tutorials.

- **How to Use Photoshop Brushes** (Adobe)
- **Brushing Up on the Photoshop Brush Tool** (Smashing Magazine)

Lesson 12: Working with Text

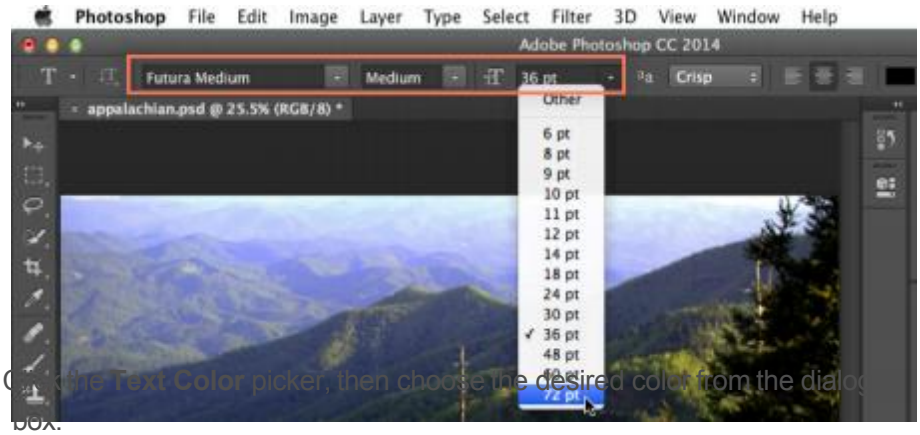
Working with text

The **Type** tool allows you to **add text** to your file. You can use text on a variety of projects, such as adding it to your images to create a poster, holiday card, or invitation. You'll also be able to **customize the text** to suit your needs.

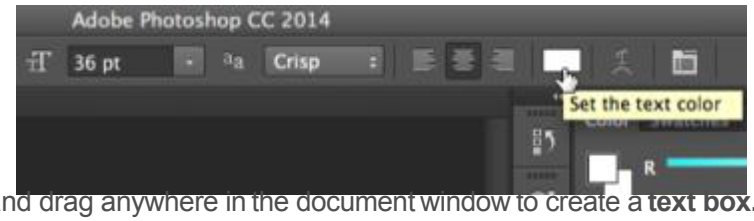
Using the Type tool

1 Locate and select the **Type** tool in the **Tools** panel. You can also press the **T** key on your keyboard to access the Type tool at anytime.

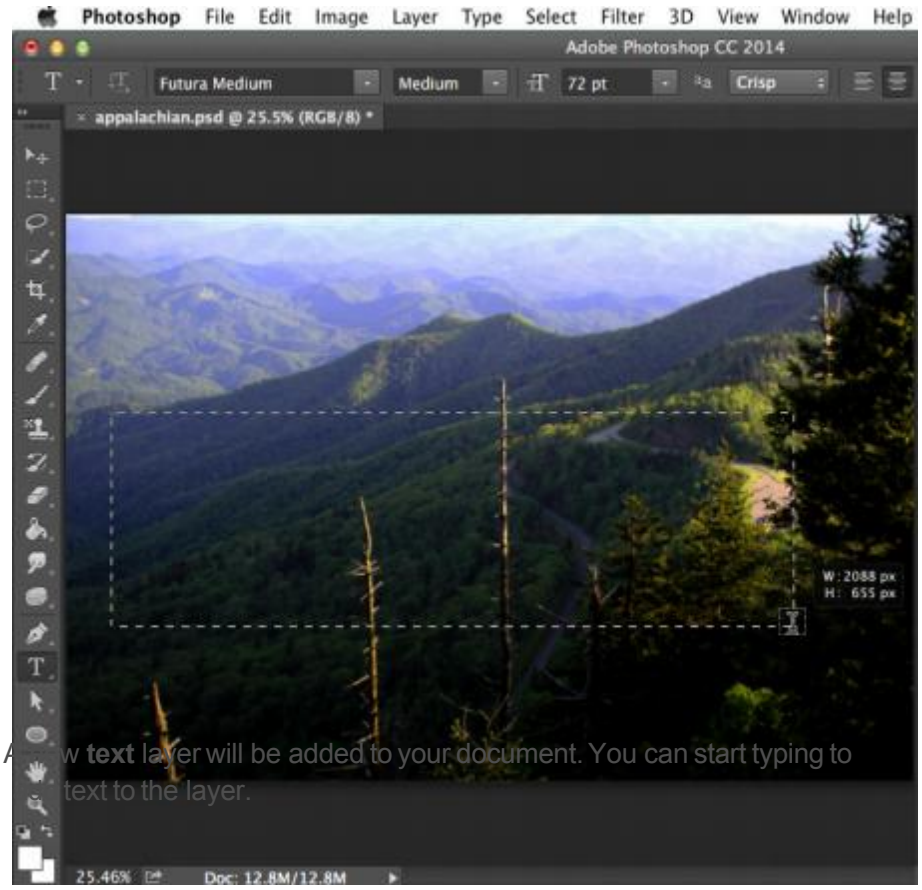
2 In the **Control panel** near the top of the screen, choose the desired **font** and **text size**.



3 Click the **Text Color** picker, then choose the desired color from the dialog box.



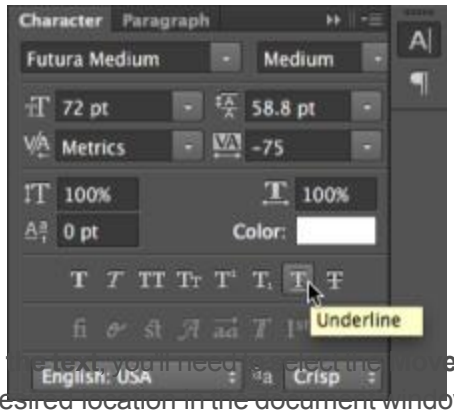
4 Click and drag anywhere in the document window to create a **text box.**



5 A w **text** layer will be added to your document. You can start typing to text to the layer.

ou want to add a lot of text to your document, you may find it easier to rk with **multiple text layers**. This will give you more control over the apperance of your text. In the example below, we've added a second text layer for the word **mountains**.

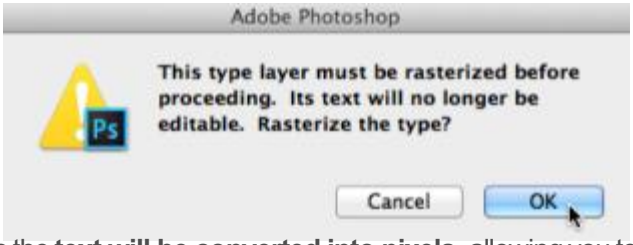
- If you want to **edit** a text layer, you'll need to double-click the **layer icon** in the **Layers** panel. You can then change the text, resize the text box, or use the options in the **Control panel** to choose a different font or modify text size and color.



- If you want to **move** [illegible] tool and click and drag it to the desired location in the document window.

Rasterizing text

If you try to use certain tools with a text layer, such as **Filters**, you'll receive a warning message asking if you want to **rasterize the text**.



Rasterizing means the **text will be converted into pixels**, allowing you to make image adjustments that normally don't work with text. The downside is that you'll no longer be able to edit the text, change the formatting, or convert it back to a text layer. Therefore, you should only rasterize your text if you absolutely need to. If you don't want to rasterize it, simply click **Cancel** to keep the text layer in its current format.

More resources

Photoshop features many other ways to customize text. To learn more about these options, review these tutorials.

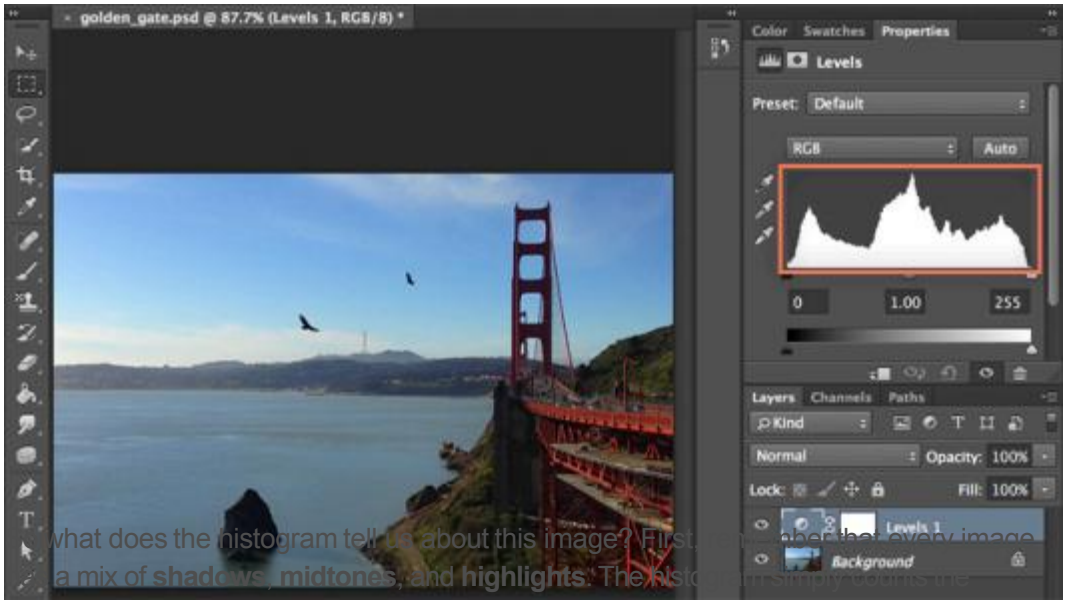
- **Add Text to Images** (Adobe)
- **A Comprehensive Introduction to the Type Tool** (Tuts Plus)

Lesson 13: Reading a Histogram

Reading a histogram

If you've ever used a **Levels** or **Curves adjustment layer**, you may have noticed a graph in the area where you're making the adjustment. This graph is known as a **histogram**. The histogram basically shows you how many **shadows**, **midtones**, and **highlights** there are in the image.

In the example below, we have the Levels adjustment layer selected, and you can see the histogram in the **Properties** panel on the right.

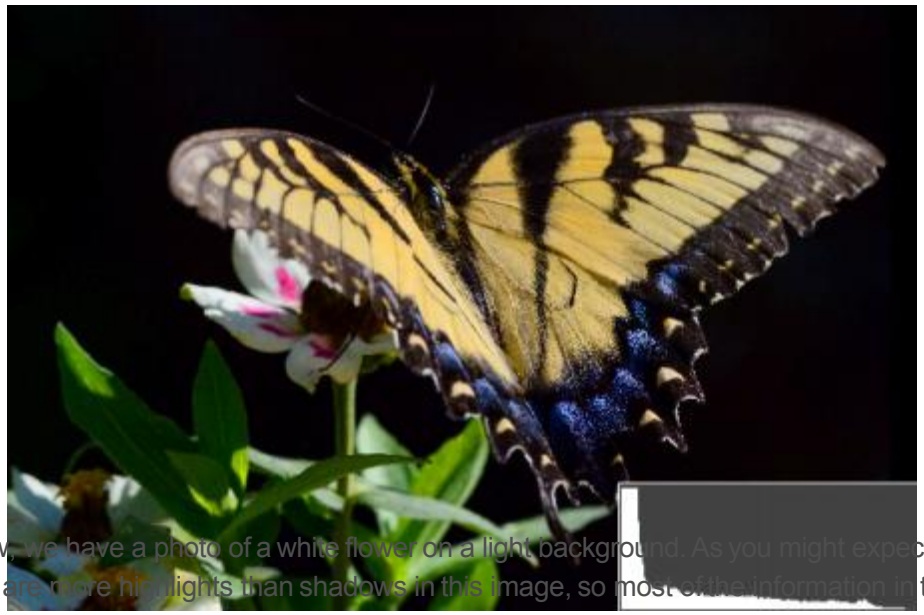


what does the histogram tell us about this image? First, ... about that every image ... a mix of **shadows**, **midtones**, and **highlights**. The histo... simply counts the number of pixels for each tone and displays them as a graph with **shadows on the left**, **midtones in the middle**, and **highlights on the right**. Note that the histogram only tells

you **how much** there is of each tone; it doesn't tell you **where** the tones are located in the image.

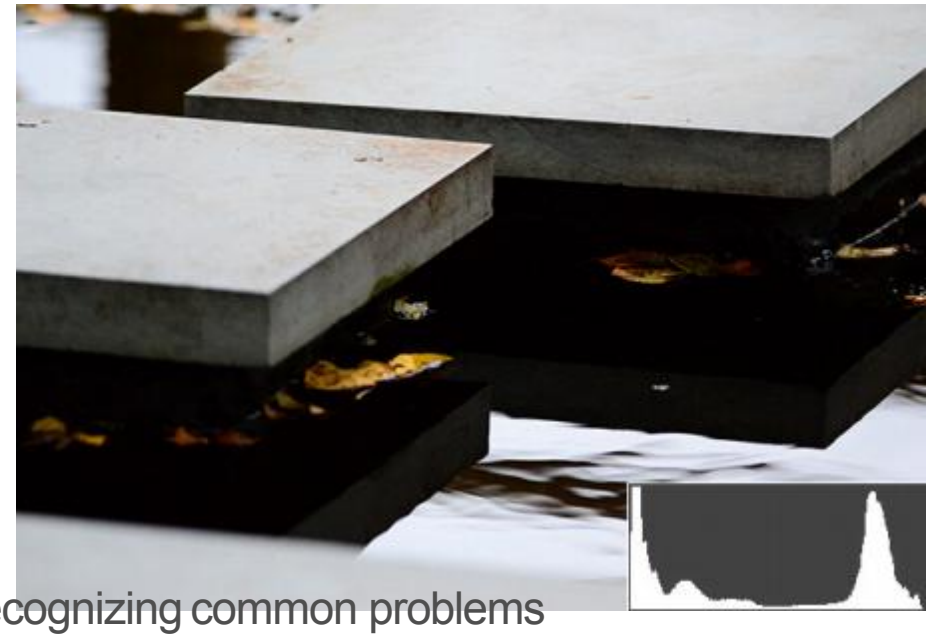
In the example above, we have a mix of different tones. The rocks and ground near the bottom of the image make up most of the shadows, the bridge and ocean make up the midtones, and the sky and clouds make up the highlights. If you look at the histogram, you can see that the image has a fairly even balance among the three.

The histogram will be **unique** for every image, and it won't always be so evenly distributed. For example, take a look at the image below. You can see that most of the information in the histogram is **stacked on the left**. This means a majority of the pixels for this image are **shadows**: the dark areas in the background, the shadows on the leaves, and the dark patterns on the butterfly's wings.



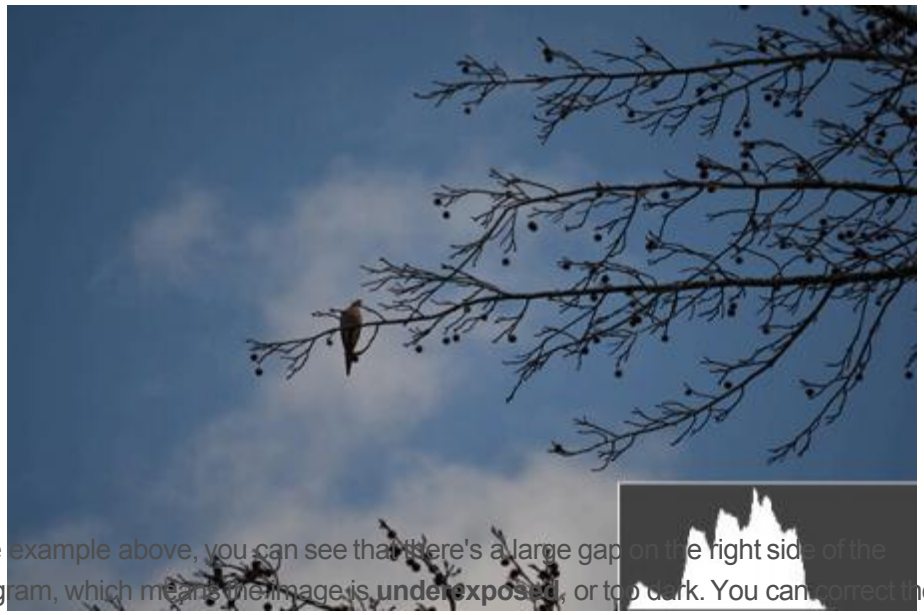
Below, we have a photo of a white flower on a light background. As you might expect, there are more highlights than shadows in this image, so most of the information in the histogram is **stacked on the right**.

The image below has large peaks of information on the left and right sides of the histogram but flat areas in the middle. This means the image has a lot of shadows and highlights—in the water and the stones—but very few midtones. You could also say this image has a lot of **contrast**.



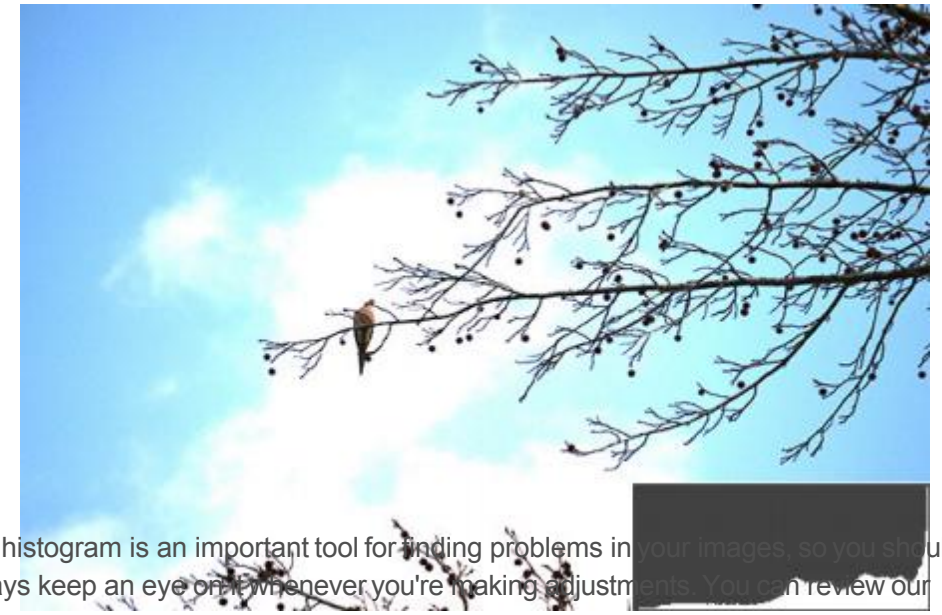
Recognizing common problems

Knowing how to read a histogram can tell you several different things about a photo. For example, you can use the histogram to find common problems in your images. You can then use different tools like **Levels** and **Curves** to correct and improve them.



In the example above, you can see that there's a large gap on the right side of the histogram, which means the image is **underexposed**, or too dark. You can correct these types of problems with a **Levels** adjustment.

However, if you're not careful when making these adjustments you'll begin to lose detail in your image. This is known as **clipping**. In the image below, you can see that the clouds have lost a lot of detail, and the color of the sky has also changed. Also notice the sharp peak on the right-most side of the histogram. Whenever you see this in a histogram, it means clipping has occurred.

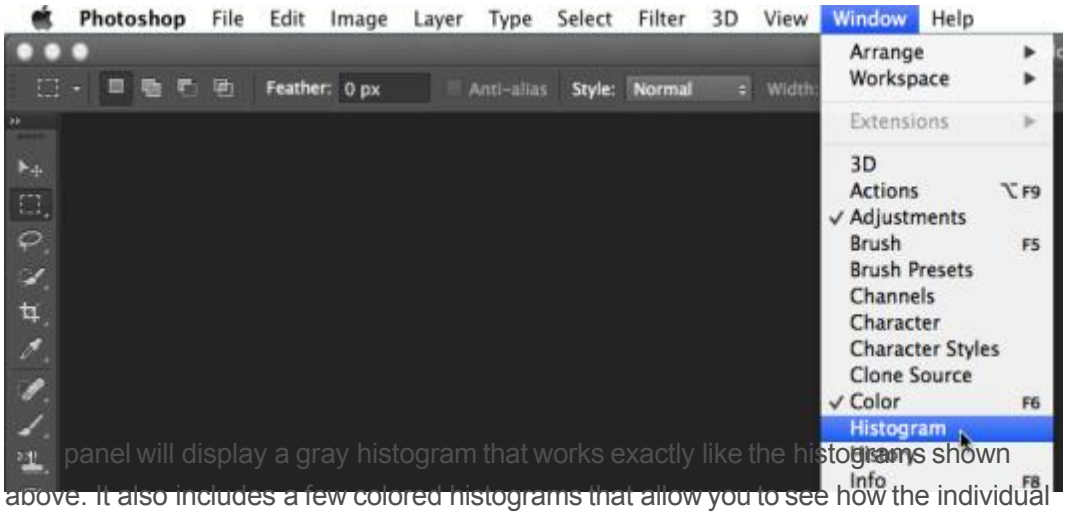


The histogram is an important tool for finding problems in your images, so you should always keep an eye on it whenever you're making adjustments. You can review our lesson on **levels, curves, and color** to learn more about making adjustments.

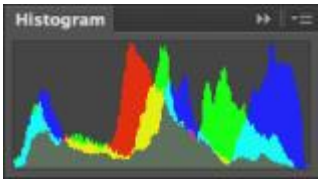
The Histogram panel

There are a few ways to view the histogram for an image. As we mentioned above, you'll see the histogram in the **Properties** panel whenever you edit a **Levels** or **Curves** adjustment layer.

However, this histogram will not be updated when making a change within an adjustment layer. If you're using adjustment layers in your document, we recommend referring to the **Histogram** panel to look for problems because it will take the adjustment layers into account. You can go to **Window,** then select **Histogram** to open the Histogram panel at anytime.



panel will display a gray histogram that works exactly like the histograms shown above. It also includes a few colored histograms that allow you to see how the individual colors in the image are distributed.



More resources

As you gain more experience with histograms, you'll be able to read them more easily and make adjustments with confidence. To learn even more about working with histograms, review these tutorials.

- **View Histograms and Pixel Values** (Adobe)
- **How to Read an Image Histogram in Photoshop** (Photoshop Essentials)
- **Camera Histograms: Tones & Contrast** (Cambridge in Colour)

Lesson 14: More Resources

More resources

Photoshop is a big subject, and it may start to feel overwhelming at times. Fortunately, there are many solid online resources for learning Photoshop. Some are free, while others require a paid subscription. You'll find some of our favorites below.

> To learn more about basic image editing skills, review our **Image Editing 101** tutorial.

Free resources from Adobe

Adobe provides several free resources for learning Photoshop. Whether you are just getting started or are looking for advanced tips, you'll find a variety of tutorials and helpful information on these pages:

- **Photoshop User Guide**
- **Photoshop Visual Dictionary**
- **Edit Your First Photo**
- **Photoshop CC Tutorials**
- **Photoshop CC Windows Keyboard Shortcuts**

Other resources

- **Photoshop Essentials**: This site offers tutorials on almost every Photoshop tool for a variety of skill levels.
- **Cambridge in Colour**: While it's not specifically a Photoshop tutorial, this site provides a lot of information about the basics of working with digital images, including file formats, resolution, and sharpness.
- **Photo Blog Stop**: This blog covers a wide range of editing techniques and concepts.
- **Lynda.com**: Unlike the other resources listed above, Lynda requires a monthly subscription to use. However, it offers many high-quality, comprehensive video tutorials for all skill levels. It also offers a few free videos within each tutorial.