

# Color Correction and Enhancement

# 10

The primary purpose of Photoshop is to act as a digital darkroom where images can be corrected, enhanced, and refined. How do you know an image needs touch-up? You can pretty much assume every image can look a little (or even a lot) better than how the camera captured it. Whether it's adjusting the exposure, increasing contrast, or boosting saturation, Photoshop is the place to improve an image.

Learning how to spot problems and then choosing the right correction technique is an essential part of mastering Photoshop.

Several different tools are available, some more useful than others. By analyzing the most important tools and determining in which situations they might help you, a more thorough understanding of color correction is possible.

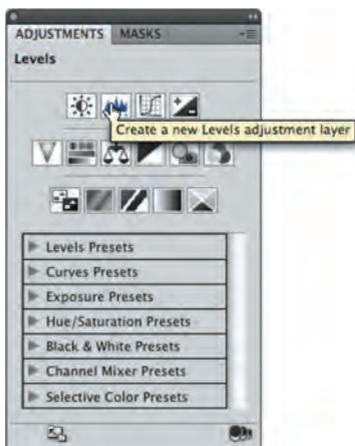


*The left image is as shot by the camera. The right image has been refined using the Camera Raw plugin. You can open the file Chio\_Major\_Fix.NEF to experiment.*

## Approach to Color Correction

New users often have a hard time when color correcting or enhancing images. They generally lose sight of the goal: making the image look better and believable. Many users go “too far” in their quest to fix images. If the image starts to look fake or too altered, it will be distracting. While getting it “right” requires some practice, here’s some general advice to get you started:

- **Identify what's wrong.** Before you can fix a picture, be sure you have decided on what's wrong. Is it too dark? Is the sky washed out? Has the picture faded over time? Make a list and prioritize the issues you find in each image. It's easiest to fix one problem at a time, and if you identify those problems, you'll know when to stop twiddling with the image.
- **Work with a copy of the image.** Before you start to color correct an image, you should duplicate it. This way you can return to an original version if you make a mistake or go too far in your image touch-up. After opening your file, choose File > Save As and name the duplicate version that will be corrected. Color correction can be a *destructive* process, meaning that you cannot revert to the original state at a later time. By preserving an original version of the image or employing adjustment layers, *nondestructive* editing is possible. Some users also choose to duplicate the *Background* layer at the bottom of the layer stack.
- **Edit with adjustment layers.** Adjustment layers allow you to apply most of the image correction commands as nondestructive effects. They are added as a layer above the actual image; the adjustment layer can be blended, masked, or deleted at any time. Additionally, if you select the adjustment layer, you can modify its properties in the Adjustments panel. The same modifications are available in both the Adjustments menu and Adjustments panel. You should work with an adjustment layer whenever possible because its flexibility will be important for future revisions.
- **Get a fresh opinion.** It's not a bad idea to step back and examine your work. Open the backup copy of the original image and compare it to the image you've been working on. This before-and-after comparison can be very useful. If you have a fresh set of eyes nearby, ask that person for his or her opinion.



## Primary Image Adjustments

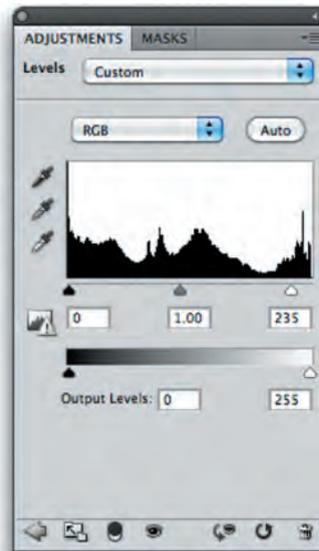
Photoshop offers several image adjustments, but only a few are used most often. Commands such as Levels and Curves are used by professionals to achieve outstanding results. These professional imaging techniques may take a little time to get comfortable with, but the power they offer is worth your investment.

## Levels

The Levels command corrects tonal ranges and color balance issues. With this command you can fix poor exposure. Additionally, you can perform color correction by manually identifying a white point and black point in the image. Nearly every image can benefit from making a Levels adjustment.

To understand Levels, it is essential to be able to read a histogram. This graph works as a visual guide for adjusting the image. The Levels adjustment has its own histogram that is visible when working in the Adjustments panel. You may also want to call up the Histogram panel (Window > Histogram) and leave it open while color correcting. You can also expand the Histogram panel by clicking the submenu and choosing All Channels View. Let's give the command a try:

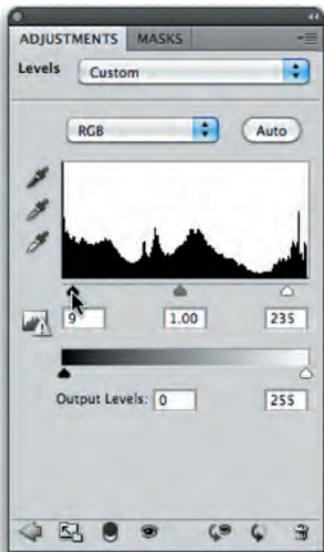
1. Close any open files, and then open the file Ch10\_Levels.tif from the Chapter 10 folder on the DVD.
2. Add a Levels adjustment layer by clicking the Levels icon in the Adjustments panel. Levels is also available from the Adjustments menu (Image > Adjustments), but the adjustment layer is more flexible for future modifications. Be sure to select the Preview check box so changes update onscreen.
3. This photo was shot under mixed light, but you can reset the black and white points of the image to fix the exposure. In the Adjustments panel, move the white Input Levels slider to the left. This affects the image's white point and allows you to reassign where white should begin in the image.



### NOTE

#### Levels Beats Brightness/Contrast

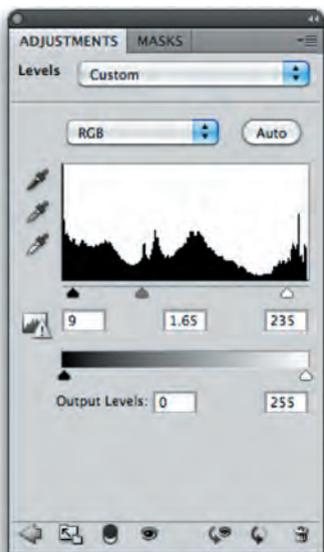
A Brightness/Contrast command does exist, but the Levels adjustment lets you perform several improvements with one command. Using a single image process cuts down on the loss of quality introduced from multiple image-processing steps.



4. Move the black Input Levels slider slowly to the right. The more you move the black slider to the right, the more contrast is introduced into the image.



5. The true power lies in the middle (gray) Input Levels slider. By moving this slider, you can modify the gamma setting. Effectively, you can use the middle Input Levels slider to change the intensity of the midtones. This adjustment can be made without making dramatic changes to the highlights and shadows, and lets you better expose an image. Move the slider to the left to add light; move the slider to the right to subtract light.



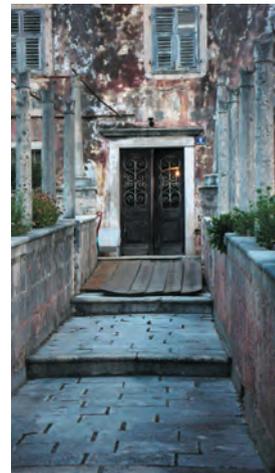
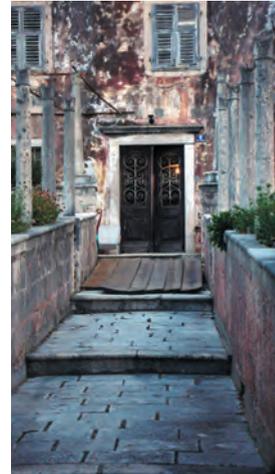
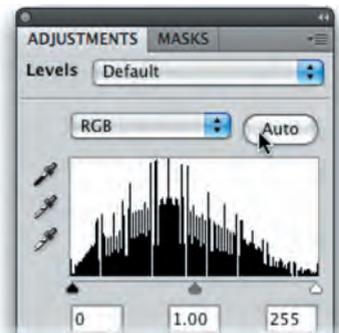
6. In the future if you need to edit the adjustment, simply select the adjustment layer in the Layers panel and manipulate the controls in the Adjustments panel.



## Auto-Levels

When working with the Levels adjustment layer, you may have noticed the Auto button. This command button triggers an analysis of the histogram data by Photoshop that is then used to modify the individual controls of the Levels adjustment. In many cases this results in an image that is properly adjusted for color balance and exposure issues. In others it will get you closer to a corrected image.

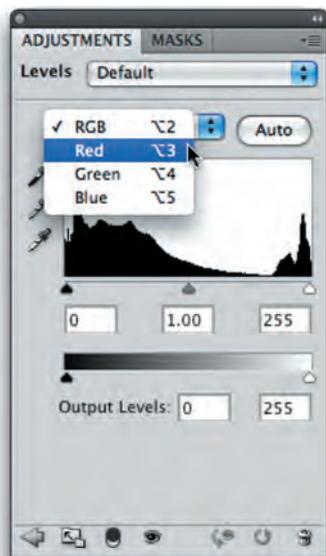
1. Close any open files, and then Open the file Ch10\_Auto\_Levels.tif from the Chapter 10 folder on the DVD.
2. Add a Levels adjustment layer by clicking the Levels icon in the Adjustments panel.
3. Click the Auto button to perform an automated adjustment for the image. The image's levels and color are adjusted.
4. To refine how the automatic adjustment works, hold down the Option (Alt) key and click the Auto button again. A new dialog box opens.
5. Select Find Dark & Light Colors and Snap Neutral Midtones to create a very natural balance of colors for the image.
6. Click OK to close the dialog box.



## TIP

### Rinse and Repeat

If you have several images from the same camera or shoot, they may need the same Levels adjustment. The Save button allows you to save a Levels adjustment (to the folder that contains the image is a good place). You can then click the Load button to apply that adjustment to another image.



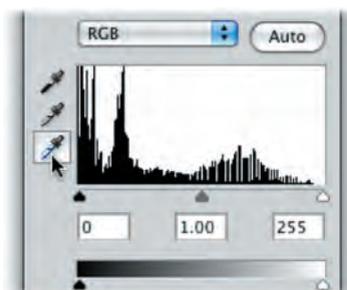
## Color cast

In the first Levels example you made a Levels adjustment to all the channels evenly. In the Auto-Levels example, you let Photoshop adjust the levels and remove color cast using an automated algorithm. The Levels command can be further isolated to a specific channel by clicking the drop-down list in the center of the Levels dialog box. This allows you to tackle color cast issues, such as spill from a background, a bad white balance, or a photo shot under mixed or colored lighting.

1. Close any open files, and then open the file Ch10\_Levels\_Color\_Balance.tif from the Chapter 10 folder. Notice how the image has a greenish tint.
2. Add a Levels adjustment layer using the Adjustments panel. You will use the Levels command to fix color and exposure issues.
3. Select the Set White Point (white eyedropper) in the Levels dialog box. Click an area that should be pure white. For this image, click a bright area in the white pillar. If you click an area that is not bright enough, the whites in the image will overexpose. (You can click the Reset button—it looks like a circular arrow—at the bottom of the Adjustments panel to reset the Levels command, if needed.) After you click, you'll see that some of the color spill has been removed.



PHOTO BY JAMES BALL



4. Select the Set Black Point (black eyedropper) in the Levels dialog box. Click an area that should be pure black. Choose an area such as a jacket or a dark shadow. This will adjust the color balance and the exposure.

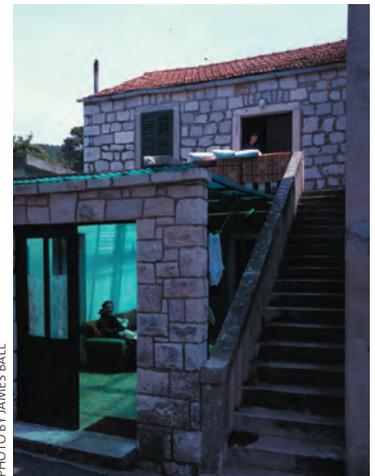
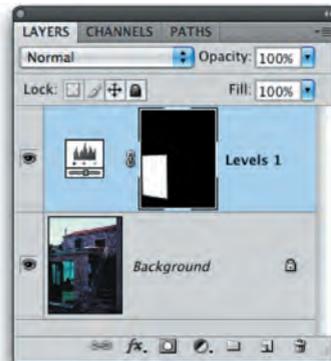
5. The image's color balance should now be better. Adjust the middle Input Levels slider to brighten the image.



## Manual adjustment

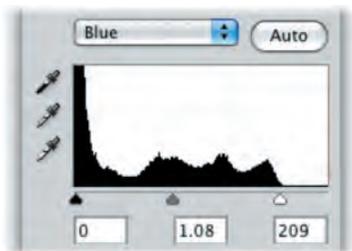
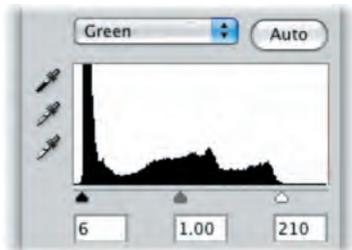
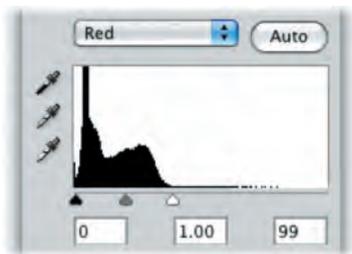
You can also use the Levels command to correct skin tones and isolated areas in an image. The Set White Point and Set Black Point eyedroppers work well, but sometimes it can be difficult to find a pure white or black point in your image. Let's try fixing color and exposure manually:

1. Close any open files, and then open the file Ch10\_Levels\_Isolated.tif from the Chapter 10 folder.
2. You need to fix part of the image that has dramatically different lighting than the rest of the image. Look at the bottom-left corner: The indoor lighting is throwing off the rest of the image.
3. Use the Polygonal Lasso tool to select the door region. After making the selection, choose **Select > Feather** and enter a value of 5 pixels to soften the selection. Making a selection first causes the adjustment layer to attach a mask to isolate the color correction to the selected area.
4. Add a Levels adjustment layer. You will make a Levels adjustment on each channel to fix color and exposure issues.



### VIDEO TRAINING

*Correcting Color Cast with Levels*



5. From the Channels menu in the Adjustments panel, choose red or press Option+3 (Alt+3) to select the first channel. Notice how the histogram is skewed to the left. Move the white Input Levels slider to the outside edge of the histogram where it begins to rise. Move the middle (gray) Input Levels slider to balance the histogram data evenly on both sides.
6. Switch to the green channel by pressing Option+4 (Alt+4). Move the black and white Input Levels sliders to the outside edges of the histogram. Adjust the middle (gray) Input Levels slider to balance the histogram.
7. Make the same adjustment to the blue channel by pressing Option+5 (Alt+5). The image should now appear color balanced. If needed, you can return to the individual channels to tweak color balance.
8. Switch back to the composite view by pressing Option+2 (Alt+2). You can now make a standard Levels adjustment to tweak contrast and exposure until you are satisfied.

## NOTE

### Pay Attention to Your Axes

When working with a grayscale or CMYK file, the axes go from light to dark. When working with RGB images, the scales are reversed. This means that pulling a control point up or down may have a different effect depending on your image mode.

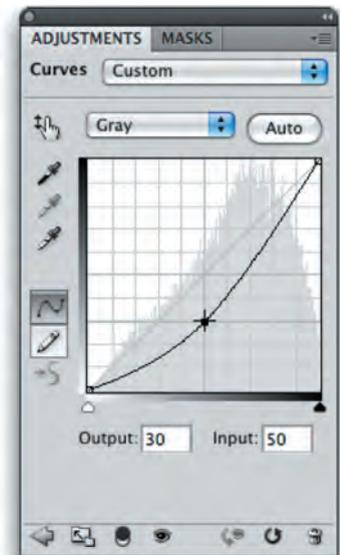
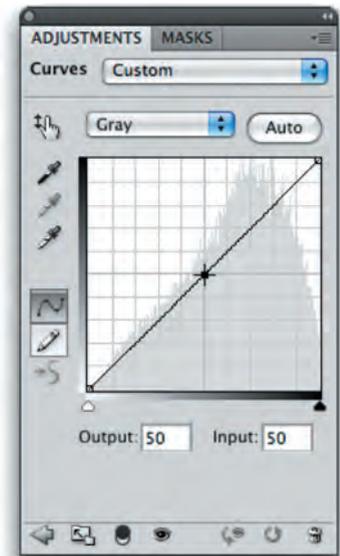
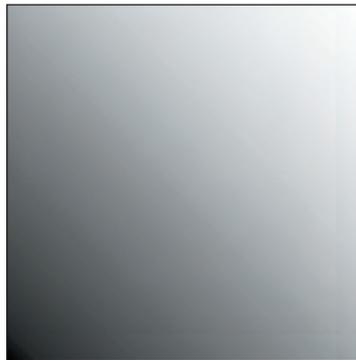


## Curves

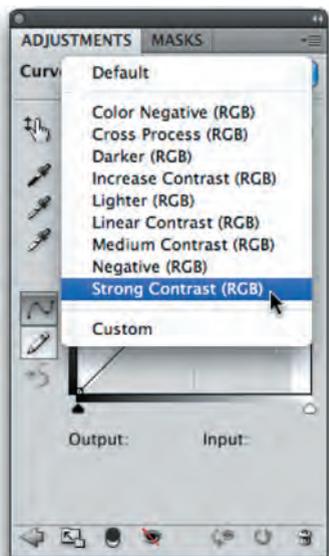
Most users will either use Curves a lot or they won't use it at all. The Curves interface is more complex than Levels, which scares away many users. While Levels gives you three control points (highlights, midtones, and shadows), the Curves adjustment allows for up to 16 control points. This can significantly open up more options when adjusting color and exposure.

Let's try the Curves command on a practice image:

1. Close any open files, and then open the file Ch10\_Curves\_Practice.tif from the Chapter 10 folder.
2. Add a Curves adjustment layer by clicking the Curves button in the Adjustments panel. When you first open the Curves interface, there are two points (one for white and one for black).
3. Add a single control point in the middle of the line (click at an Input Value of 50%).
4. Pull this new control point down to lighten the image (toward the lighter area on the Y axis). You can pull the point up to darken the image. Notice that the Input and Output values update as you drag.
5. The adjustment is applied gradually throughout the entire image. Multiple points can be employed for contrast adjustments based on tonal range.

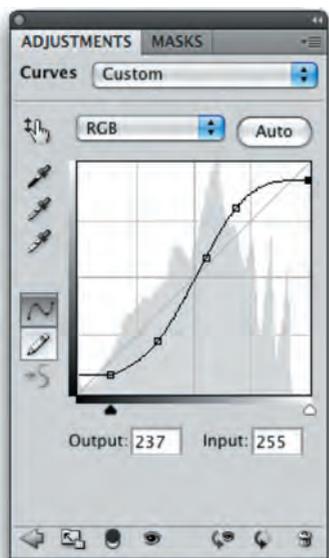


The primary advantage of Curves is that you have precise control over which points get mapped (whereas in Levels you do not). Another benefit is that Curves adjustments can use several points connected by a curved line (as opposed to Levels, which uses only



three control points) to make adjustments. So, color correction can be applied in a more gradual manner (without the hard clipping that can be associated with Levels).

1. Close any open files, and then open the image Ch10\_Curves.tif from the Chapter 10 folder.
2. Add a Curves adjustment layer by clicking the Curves icon in the Adjustments panel. The curve has only two points on it—one representing the black point; the other, the white point.
3. It's now time to add more control points to refine the curve. To do this, you'll use a Curves preset. Click the menu to select a Curves preset in the Adjustments panel. Choose the Strong Contrast (RGB) preset. Notice that the image now has more contrast in the shadows and highlights, and more visual "pop."



4. Experiment by adjusting the five control points. Try to further emphasize the shadows in the image. Continue to experiment by moving the control points (you can use the up and down arrow keys for precise control).

## TIP

### Easy Curves

When the Curves Editor is open, you can easily add control points. Click the icon that looks like a pointing finger, and then just click and drag in the image to modify the curve. The control points will appear in the editor. These can be moved to lighten or darken the image.