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Questions and Answers:
Photographic Equipment and Techniques -- Monochrome

Q.: To make black-and-white photographs, should I set my digital camera to monochrome or shoot in color and convert the color image later?
A.: A digital camera in the monochrome mode can make black-and-white photographs by using the desaturation mode for an in-camera conversion. This means that all colors are converted equally. As a result, different colors in a color image may have the same shade of gray in the monochrome mode. **A better result can be obtained by shooting color and converting the color image to black-and-white.**

A black-and -white photograph is a form of art. When creating a black-and-white photograph, the photographer has to interpret a scene in hues of gray, ranging from black to pure white. The main elements of a monochrome picture are shapes, lines and texture. Light is the most important variable. The photographer can use the monochrome mode of the camera to previsualize the scene, and then return to the color mode to take the picture.

For best results, use RAW mode and low ISO sensitivity. Shooting in RAW keeps all of the detailed information the camera has recorded. Using a low ISO minimizes noise, which is more disturbing in black-and-white pictures than in color. Photoshop offers several options for the conversion: Grayscale, Desaturation, Lab Color Mode, Channel Mixer, and Black & White. The Grayscale (Mode>Grayscale) and Desaturation (Image > Adjustments>Desaturate) modes are the simplest procedures but they produce less satisfactory results because the colors are not adjusted individually for their optimum grayscale brightness. The color conversion in the Lab mode is not available in the Photoshop Elements. In full Photoshop, one can convert the image to Lab mode (Image>Mode>Lab color), and open the channel window (Windows>Channels). To obtain a black-and-white image, click on the Lightness window and delete both color channels, a (red-green) and b (blue-yellow). Close the window (File>Close).

The Channel Mixer allows one to control how much each RGB color channel contributes to the black-and-white image (Image>Adjustments>Channel Mixer). Click on Monochrome and adjust the channels. Keep in mind that the channels have different noise levels: the blue channel has the most noise, the green the least. If the sum of the red, green, and blue percentages is 100 %, the overall brightness remains constant, but the sum of percentages does not always have to be 100 %. (In Photoshop Elements the Channel Mixer is accessible as Enhance>Convert to Black and White).

The Black&White program in full Photoshop (Image>Adjustments> Black&White) converts a color image to black-and white by adjusting six colors: red, yellow, green, cyan, blues, and magenta. Several adjustments of the colors may be needed to convert different colors of the photograph to different shades of gray. With some understanding of color, an optimum tonality, ranging from deep black to pure white, can be achieved.

Several plug-ins are available to make a customized color conversion easy. The Nik Silver Efex Pro 2 adjusts the brightness, contrast, and structure of the image. The U point can be used to select the area where the adjustments are made.

Different photographers may use different color conversion programs. My preferences are Black&White in Photoshop and the Nik Silver Efex Pro 2. The Black&White program adjusts individual areas of color, whereas the Nik Silver Efex Pro 2 adjusts the overall color of the image. Although the programs control the conversion differently, I have found that, in most cases, the differences between prints made by the two programs are subtle.

The black-and white images are printed in the color mode of the printer, as if they were color prints. A printer having only one black cartridge cannot make a good quality black-and-white print. Although three or more black inks are used for the highest tonal quality, a printer with two black inks can produce stunning prints.