Digital Basics

There is no way to get around the fact that the quality of your final digital pictures is dependent upon how well they were captured initially. Poorly photographed or badly scanned images take their problems with them throughout the whole production process and end up as poor quality prints. One of the best ways to increase the level of your work is to ensure that you have the skills and knowledge necessary to create the best digital file possible at the time of capture. This is true for the majority of you who now shoot with a digital camera as well as those who are converting existing photographic images to digital with a scanner.

To help gain this level of control let’s go back to the basics and see how factors like resolution and numbers of colors affect the quality of image capture.
PHOTOS IN ACTION

Photoshop Elements can be used to manipulate and enhance photos so that they can be easily presented in a variety of ways: from the traditional print, to the photo frame and slideshow and onto the web, or smart phone. It is even possible to create DVD presentations ready for viewing on wide screen TVs.

Print
The print was, and still is, the way that most people first engaged with a photographic image. Although this fact is clearly changing, the increase in the quality of desktop printing output, coupled with easier to use printers has made the task of making your own photos simpler than ever before. The print options in Elements too provide a faster and more accurate route from screen to print than in earlier years of digital photography.

Photo Frame
The ever-increasing popularity of the digital photo frame has led to a huge range of products being available on the market. Although most frames have similar features, each make and model are likely to have their own specific requirements when it comes to the images they display. This can mean that each photo added to the frame needs to be optimized in terms of size, compression and file type. Rather than perform these tasks manually, Elements provides an automated process to tweak sets of images in a single step.

Slideshow
No I'm not talking the click-clack of uncle Jimmy’s dusty, faded, travel slides! I am referring to the all-singing, all-dancing, multi-media extravaganzas much favoured by wedding photographers. Although at first glance creating such presentations complete with sound track, narration, pan and zoom effects, snazzy transitions and associated titles seems daunting, the Elements’ Slide Show editor contains all these features and more. See chapter 19 for instructions on how to use the Slideshow editor.

Photography is everywhere
Apart from the initial years of the invention of photography, I can’t think of a more exciting time to be involved in making pictures. In fact, I believe that Fox Talbot, as one of the fathers of the medium, would have little difficulty in agreeing that over the last few years the world of imaging has changed forever. Digital photography has become the two buzz-words on everyone’s lips. Increasing levels of technology coupled with comparatively affordable equipment have meant that sophisticated imaging jobs that were once the closely guarded domain of industry professionals are now being handled daily by home users and enthusiasts.

This book introduces you to the techniques of the professionals and, more importantly, shows you how to use these skills to produce high quality images for yourself, your friends and your business.

The text centers on Adobe’s popular Photoshop Elements program and covers all the features in version 9 as well as the tools common to the previous versions of the program.

You will learn the basics of good digital production from the point of capturing the picture, through simple manipulation techniques, to outputting your images for print and web. To help reinforce your understanding, you can practise with many of the same images that I have used in the step-by-step demonstrations by downloading them from the supporting website (www.photoshopelements.net).
Animated Gallery

The internet has transformed the way that photographers display their photos. Now a photographer without a website is like a musician who never plays to an audience. As the net has matured, so too have our expectations about what constitutes a good web gallery. The simple set of thumbnails followed by a larger gallery image design simply doesn’t cut it anymore. In its place are animated galleries ranging from page-turning books to flying postcards. Thankfully Elements provides a simple workflow for creating such dynamic sites.

Phone Folio

With high resolution screens, stereo output and processors powerful enough to display full screen video, smart phones are fast becoming the portable folio of choice for professional photographers. But posting your folios to your phone is not as simple as copying from desktop to portable. There are a range of settings that need to be considered if folios are to be displayed smoothly and in high quality. Rather than spending time testing different settings, Premiere Elements provides single click workflow for porting your pictures to your phone.

DVD Presentation

Big screen TVs provide big opportunities for photographers to have their images proudly displayed in lounge rooms throughout the country. A CD/DVD based slideshow is the 21st century equivalent of the photo album. If you have a computer with a writer attached, then Photoshop Elements has several ways to get your photos to disk quickly and easily. See chapter 5 for a step-by-step guide about how to create your own DVD presentations.

A good selection of video tutorials can also be found on this site, giving me the chance to guide you personally through your skills building tasks. There is also an example site demonstrating the links between Photoshop.com and Photoshop Elements at pse-4-photographers.photoshop.com. Go here to see Elements online syncing power in action. There are also links to other relevant websites and information about the other imaging books I write. You will find a web icon (like this one) placed throughout the book to identify when such web content is available.

Also, you will find a real-life project in Chapter 21 showing you how to use your new-found skills to enhance your own images and create a professional-looking photo book. Source files and comprehensive video tutorials for this project can also be found on the website, giving you the opportunity to practise your skills on a real-world task.

This book's associated websites contains practise images as well as video tutorials and galleries that are designed to build your skills and knowledge. Look for the 'on the web' icon throughout the text. This indicates that there are associated images, or video tutorials available on www.photoshopelements.net, for the technique. Also go to pse-4-photographers.photoshop.com to see example Online Albums and photo galleries.
The beginning – the digital photograph

Computers are amazing machines. Their strength is in being able to perform millions of mathematical calculations per second. To apply this ability to working with images, we must start with a description of pictures that the computer can understand.

This means that the images must be in a digital form. This is quite different from the way our eye, or any film-based camera, sees the world. With film, for example, we record pictures as a series of ‘continuous tones’ that blend seamlessly with each other. To make a version of the image that the computer can use, these tones need to be converted to a digital form.

The process involves sampling the image at regular intervals and assigning a specific color and brightness to each sample. In this way, a grid of colors and tones is created which, when viewed from a distance, will appear like the original image or scene. Each individual grid section is called a picture element, or pixel.

Creating digital photos

Digital files can be created by taking pictures with a digital camera or by using a scanner to convert existing prints or negatives into pixel form. Most digital cameras have a grid of sensors, called charge-coupled devices (CCDs), in the place where traditional cameras would have film. Each sensor measures the brightness and color of the light that hits it. When the values from all sensors are collected and collated, a digital picture results.
Scanners work in a similar way, except that these devices use rows of CCD sensors that move slowly over the original, sampling the picture as they go. Generally, different scanners are needed for converting film and print originals; however, some companies are now making products that can be used for both.

Video cameras use the same principle but rapidly capture a sequence of images. Any movement in the subject is recorded on successive photos. When these images, or frames, are quickly redisplayed one after another, the motion of the subject is replicated on screen. Until recently, capturing digital video required a separate camera, now, many still cameras also contain a very usable video mode.

Quality factors in a digital image

The quality of the digital file is largely determined by two factors – the number of pixels and the number and accuracy of the colors that make up the image. The number of pixels in a picture is represented in two ways – the dimensions, i.e. ‘the image is 900 x 1200 pixels’, or the total pixels contained in the image, i.e. ‘it is a 3.4 megapixel picture’.

Generally, a file with a large number of pixels will produce a better quality image overall and provide the basis for making larger prints than a picture that contains few pixels. The second quality consideration is the total number of colors that can be recorded in the file. This value is usually referred to as the ‘color or bit depth’ of the image.
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The current standard is known as 24-bit color or 8 bits per Red, Green and Blue channel. A picture with this depth is made up of a selection of a possible 16.7 million colors. In practice this is the minimum number of colors needed for an image to appear photographic. In the early years of digital imaging, 256 colors (8 bits of color per channel) were considered the standard.

Although good for the time, the color quality of this type of image is generally unacceptable nowadays. In fact, new camera and scanner models are now capable of 12 bits per channel (36-bit color altogether) or even 16 bits per channel (48-bit color altogether). This larger bit depth helps to ensure greater color and tonal accuracy.

The steps in the digital process

The digital imaging process contains three separate steps – capture, manipulate and output.

Capturing the image is the first step. It is at this point that the color, quality and detail of your image will be determined. Careful adjustment of either the camera or scanner settings will help ensure that your images contain as much of the original’s information as possible. In particular, you should ensure that delicate highlight and shadow details are evident in the final image.
The digital imaging process contains three steps – capture, manipulate and output.

If you notice that some ‘clipping’, or loss of detail, is occurring in your scans, try reducing the contrast settings. If your camera pictures are too dark, or light, adjust the exposure manually to compensate. It is easier to capture the information accurately at this point in the process than try to recreate it later.

Manipulation is where the true power of the digital process becomes evident. It is here that you can enhance and change your images in ways that are far easier than ever before. Altering the color, contrast or brightness of an image is as simple as a couple of button clicks. Changing the size or shape of a picture can be achieved in a few seconds, and complex manipulations like combining two or more images together can be completed in minutes rather than the hours, or even days, needed with traditional techniques. Manipulation gives digital illustrators the power to take a base image and alter it many times so that it can be used in a variety of situations and settings. Once changed, it is possible to output this same image in many ways. It can be printed, used as an illustration in a business report, become part of a website, be sent to friends on the other side of the world as an email attachment, or projected onto a large screen as a segment in a professional presentation.

An image-editing program can enhance, manipulate and change a base file in many different ways.

Where does Photoshop Elements fit into the process?

Photoshop Elements is a program that can be used for enhancing, manipulating, printing, presenting and organizing your digital photographs. Put simply, this means that it is the pivot point for the whole digital imaging process. Its main job is to provide the tools, filters and functions that you need to manage, change and alter your pictures.

Elements is well suited for this role as it is built upon the same core structure as Adobe’s famous professional-level program Photoshop. Many of the functions found in this industry-leading package are also present in Elements but, unlike Photoshop, Adobe has made Elements easier to learn and, more importantly, easier to use, than its professional cousin. In this way, Adobe has thankfully taken into account that, although a lot of users need to produce professional images as part of their daily jobs, not all of these users are, or want to be, imaging professionals.

In addition, Elements contains features designed to download digital pictures from your camera, or scanner, directly into the program, as well as functions that allow you to easily output your finished images to web or print. When used in conjunction with other programs, like Premiere Elements, it is also possible to edit and enhance video sequences and then combine the images from Photoshop Elements with the movies from Premiere Elements in a combined presentation.

Photoshop Elements 9 – finally, truly cross-platform!

In one of the biggest shake-ups of Elements’ short life, version 9 sees a concurrent release of both Windows and Macintosh versions of the program. This is nothing new, you say, as this was the case for Photoshop Elements 8. And you would be right. But the big difference this time around is that unlike in previous Macintosh releases, the new version includes the popular Organizer workspace just like its Windows sibling.

Now, for the first time, Macintosh users will be able to harness the image management power and prowess of the Elements’ Organizer and will not have to go outside of the program when they want to undertake tasks such as downloading, creating albums, adding keywords, browsing and synchronizing with Photoshop.com. So just like Photoshop, Elements can now boast that it is truly multi-platform, with the feature list for Macintosh users duplicating that of the Windows platform.