workshop

Digital imaging tips & tricks

Digital photography and image editing are two of the most popular and rewarding PC-related pastimes. Jason Whittaker illustrates their possibilities and provides buying advice and user tips for getting the most from your camera, scanner, PC, printer and photo editor

O ne of the biggest advantages of using a PC is the fact that, with the right equipment and software, you have access to one of the best photo processing labs ever invented. Each month, we carry Top 10 guides to the very best digital cameras and scanners available, but how do you use these so that your images look their very best?

In this workshop we'll take you through importing images from your camera or scanner, then offer some tips and tricks for getting the most from image-editing software, such as Photoshop Elements 2.0, which has many of the features of Photoshop 7.0 at a fraction of the price.
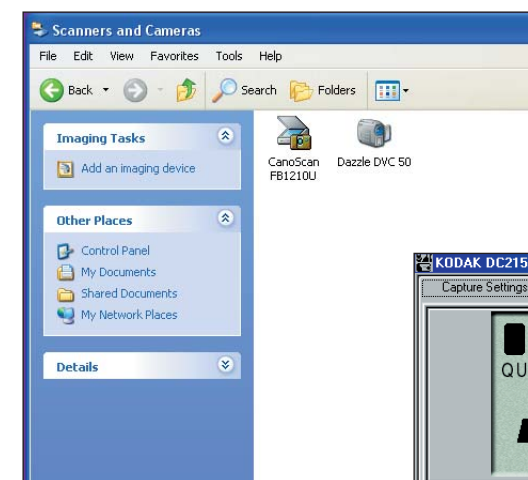
We'll also discuss how to get the best printouts once you've edited your images to perfection. Colour printers, such as those we feature each issue in the charts, are more than capable of reproducing high-quality images – provided you optimise your images for print, that is.
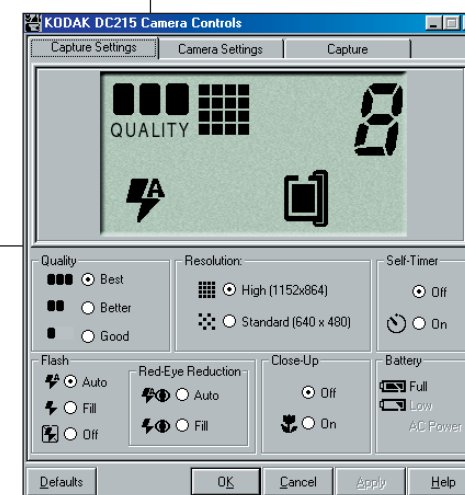
Getting the image: digital cameras

Taking a photograph with a digital camera is as easy (or difficult) as with a conventional 35mm film camera. There are point-and click models that do practically everything for you, then there are high-end devices that offer a range of manual controls with which you can tweak

ILLUSTRATION: NATALIE WINTER

← Windows XP includes built-in camera support

↓ Your camera drivers allow you to capture settings and control your camera from your PC

your pictures. We won't offer advice on using different cameras here – that's where familiarising yourself with your camera manual is useful, especially for functions such as close range (macro) shots, depth of field and shutter speeds.

Where digital cameras definitely have the advantage over their 35mm cousins is in accessing your image immediately after you have taken the shot. You don't need to wait for the film to be processed, nor do you even have to transfer the images to a PC to preview your work. Simply go to the LCD (liquid crystal display) panel on your camera and change to Preview mode, then flick through the images stored on the CompactFlash or SmartMedia memory. You can even delete the ones you don't want and take them again if necessary.

Some cameras even include basic image-editing features for changing the contrast level, cropping the image or adding a frame. In most cases, however, you will want to transfer your images to a computer to optimise them for transfer to the web or for print. There are several ways to transfer your pictures.

• Using serial or USB This is the most common means of transferring images to a PC. The first step is to install any drivers that came with your camera so your system can communicate with it. Once these are installed and you have restarted your PC if necessary, connect your camera to it. Older models use a slower serial port (though this has the advantage of being able to connect to just about every PC), while newer ones use faster USB.

Once you have connected the device, ensure it's switched to Connect mode or equivalent and turn it on. Start the driver software on your PC, which will read the memory card in the camera and display images. Copying files across is then simply a case of clicking on the photos and dragging them to your chosen folder.

• Using Twain The software bundled with your camera is an easy way of copying images across to your PC. However, once you begin to use the device regularly, you'll find this isn't the most convenient way to transfer photos. More often than not, you will want to optimise the pictures, so

importing them straight into image-editing software makes the most sense. To do this, you must ensure the drivers for your camera are Twain-compliant; most are, but consult your camera manual to make sure.

For users of later versions of Windows, such as XP, drivers are easier to use than ever before. Open My Computer and you will see an icon for Scanners and Cameras. Double-clicking this icon will open the device as a folder in Windows where you can perform basic tasks such as taking a picture or deleting images.

Twain drivers also integrate with applications such as Photoshop or PhotoSuite: we will look at PhotoSuite in a little more detail below, but most programs provide a menu option or icon to acquire images from a Twain-compatible camera.

• Using a card reader Windows XP in particular offers very straightforward means of working with most digital cameras, but the absolute winner in terms of ease of use must be using a card reader. These devices typically connect via USB and, once attached, treat CompactFlash or SmartMedia cards as removable drives that can be copied to and from at will.

Getting the image: scanners

If you wish to edit photos from conventional film, your best option for transferring them to PC is via a flatbed scanner. Once you have connected your scanner and installed the Twain drivers, images can be imported. Most scanners come with some sort of image-editing software, but for this article we have used Adobe's Photoshop Elements 2.0.
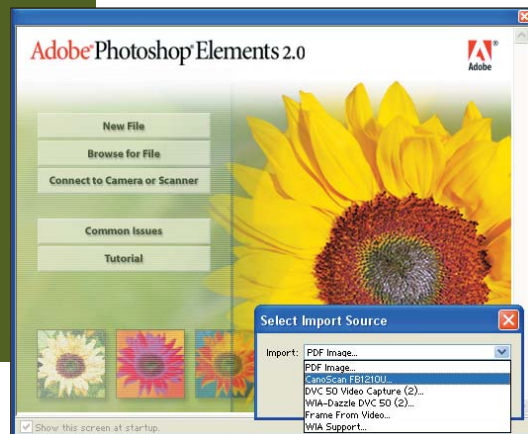
Digital camera tips

1. Take your best shot **You'll need to take the same care with a digital camera that you take with a conventional film model. For the best image, ensure that lighting, framing and angles are right for your shot.**

2. Megapixels aren't everything **You're more likely to produce higher-quality prints with a higher resolution, but cameras that cut corners on optics may result in worse photos than competitors half their resolution (and price).**

3. Snap away **Always take more pictures than you need. This way you're more likely to get the shot you want.**

4. More means more **Storage with most cameras is usually paltry, but with prices falling for flash memory be sure to go for 32MB, 64MB or even 128MB cards.**

5. Go for long life **Digital viewfinders chew battery power in minutes. Be sure to carry extra batteries when you're out and about and use the optical viewfinder as much as possible.**

Scanner tips

1. Optical illusions **Optical resolutions are the real key to buying a decent scanner, so don't be fooled by figures quoted for interpolated resolutions.**
2. The right hardware **Image processing with a scanner can be very intensive for your PC, with processor, memory and as much hard drive space as possible required for the task.**
3. Making the connection **Avoid parallel connectors and go for USB or SCSI. If you have a USB 2.0 or FireWire connector, these can speed up the process even more.**
4. Scan what you need... **Use the preview option to fix on the area that you need. Don't scan at 600dpi (dots per inch) when you want an image for a website rather than to print.**
5. ...but overscan when necessary **At the same time, it's easier to reduce an image in size and retain quality rather than blur it through enlarging.**

↓ Applications such as Adobe's Photoshop Elements will link to your scanner directly via Twain

• Making the connection Connecting to the scanner with Photoshop Elements is simple. From the splash screen, select Connect to Camera or Scanner and then choose your device to open the scanner driver. Alternatively, go to File, Import to scan an image.
• Importing the image Once you have your photograph positioned on the scanning area, click on the Preview buttons to view it. You can draw a marquee around the picture to select only the area you need and the drivers will allow you some control over the image – whether to scan in colour, black and white, to select a resolution and more detailed control over the tone and contrast of your image. Once you have these settings right, click the Scan button to import the image into Elements.

Optimising the image

Now that your photographs are on the hard drive, it's likely that you will want to change the images in some way: perhaps they are the wrong way round or too dark or you need to crop the picture to remove unwanted details. We'll cover some of the most basic tasks for optimising images using Adobe's Photoshop Elements 2.0.

• Rotating images You can use the default welcome screen in Elements to browse for a file or go to File, Open to display your selected image. If you have taken a photograph holding your camera at an angle or the original was not correctly placed on the scanner, the image will need to be rotated.

If the camera was at a right angle to the scene, simply go to Image, Rotate and select 90 degrees left or right, depending on which direction you wish to turn the picture. If the camera or scan was slightly askew, select Image, Transform, Free Transform and move your mouse outside the image until the cursor becomes a curved line: you can now rotate the picture as little or as much as you require. Alternatively, go to Image, Rotate and select Custom before entering the number of degrees you wish to turn the image.
• Cropping and resizing It is unlikely that your image – whether from a scan or photograph – will be exactly the right size for your requirements. We will deal with changing resolutions for print later, but to change the size of
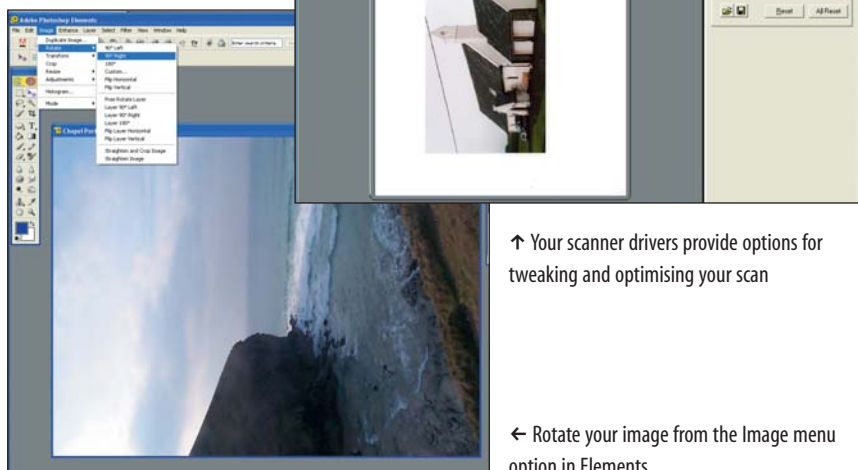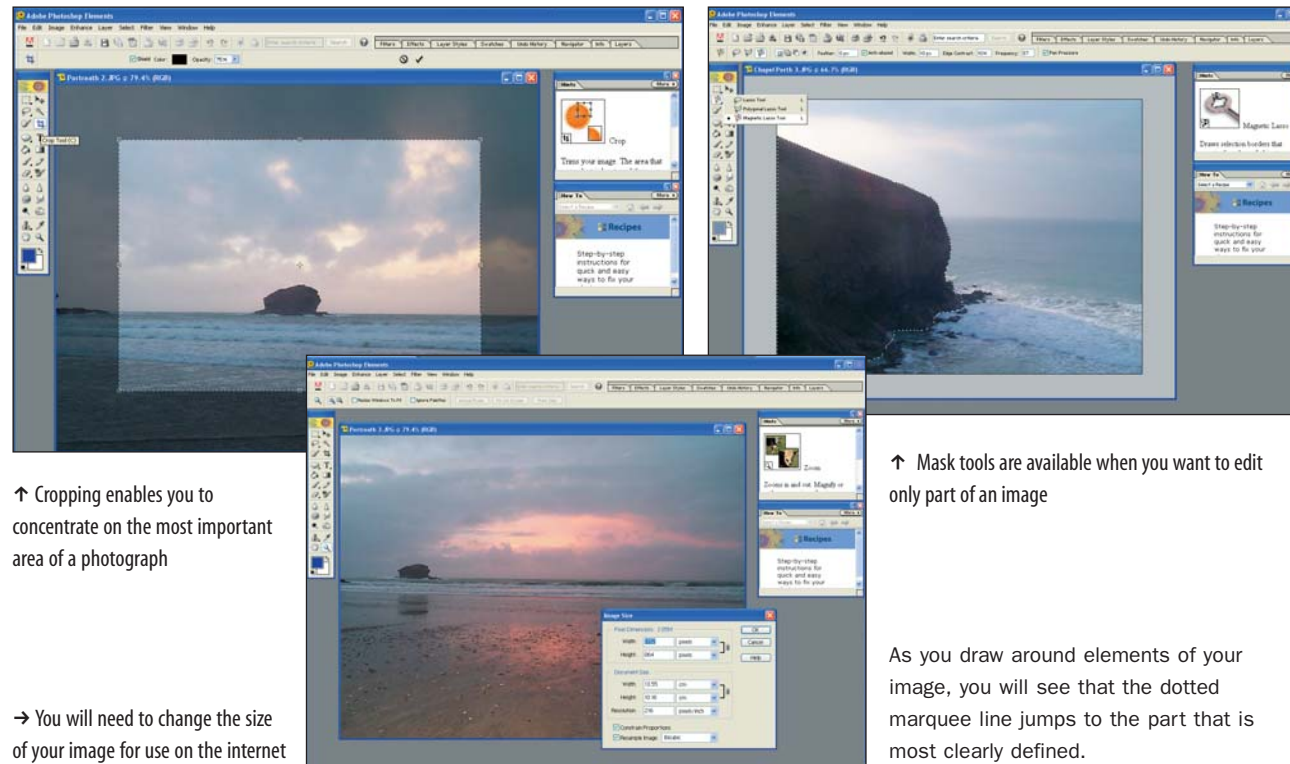
an image (for example, to reduce it for inclusion in a website) go to Image, Resize, Image Size and enter the new dimensions for your picture. If you want to change the canvas of your image, perhaps to introduce a border around the photograph, select Resize, Canvas Size instead.

When selecting parts of an image, to remove unwanted detail or to focus on a particular section of a photo, select the crop tool from the Tools palette. With this tool you can select the portion of the image that you wish to keep and

↑ Your scanner drivers provide options for tweaking and optimising your scan

← Rotate your image from the Image menu option in Elements

↑ Cropping enables you to concentrate on the most important area of a photograph

→ You will need to change the size of your image for use on the internet

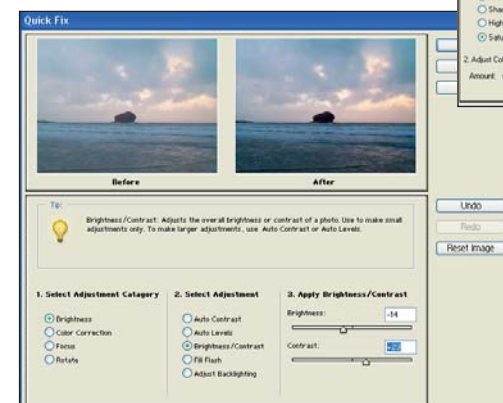then double-click on the crop mask or go to Image, Crop.
• Levels and colour correction Adobe Photoshop Elements provides a wealth of tools for correcting colour, contrast and brightness in your images, only a few of which we can cover here. If speed is of the essence, go to Enhance, Quick Fix. This displays a dialog box with one-click access to the most common features you may wish to alter, such as brightness, contrast and colour correction. Auto Levels, Contrast and Color Correction beneath the Quick Fix option will apply automatic enhancements.

To adjust the brightness and contrast interactively, go to Enhance, Adjust Brightness/Contrast and use sliders to correct your image. Enhance, Adjust Lighting provides tools for correcting common errors such as backlighting and poor flash exposure.

Complex colour tools are provided under Enhance, Adjust Color. Color Variations is fun if you would like Elements to make automatic changes to your image, but Hue/Saturation and Remove or Replace Color offer more control over changes you make to your pictures. Color Cast is an excellent tool: by clicking on an area of an image that should be white, black or grey, it quickly changes the overall colour tone of a photo.
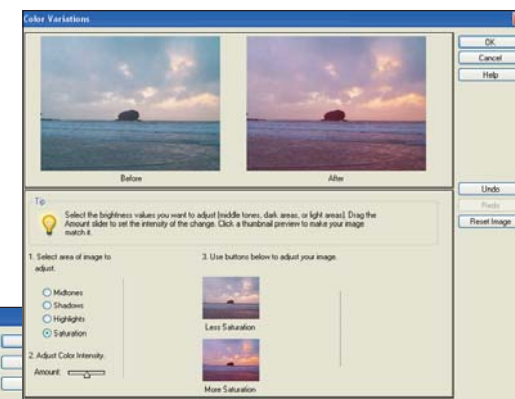
↑ Mask tools are available when you want to edit only part of an image

As you draw around elements of your image, you will see that the dotted marquee line jumps to the part that is most clearly defined.

Making the best print

Editing images onscreen is fine to a point, but many people who use digital cameras and scanners also want to print out their photos. Any of the printers in our colour inkjets chart (see page 154) will do an excellent job of producing prints of your pictures so long as you understand a few of the basics.

• Using masks Sometimes you will not want changes to apply to the whole image, which is where masking (or marquee) tools are extremely useful. These are found in the top part of the Tools palette and include regular (rectangular and oval) marquees, lasso and brush tools for irregular selections, a magic wand when you need to select a particular colour and the crop tool. For the regular masks and lassos you can hold the mouse down on the Tool palette to change between the types of marquee.

If you need to select an irregular portion of a picture that is clearly defined, then the Magnetic lasso is the simplest tool to use. Hold the mouse down over the lasso icon then select Magnetic Lasso Tool.

↑ You can also use Photoshop Elements to automatically control saturation, contrast and brightness

← Elements includes a number of tools to optimise your image automatically

Software and printing tips

1. Learn the program **Read the manual and follow any tutorials provided to get the most from your chosen image editor.**
2. Undo, undo, undo **Remember the shortcut Ctrl, Z to undo your mistakes.**
3. Be kind to your eyes **The larger your monitor, the easier you will find it to work with images onscreen.**
4. Get the resolution right **For printing, increasing the dots per inch rating above 600 will often have little effect on the overall impact of the image; 300dpi is plenty.**
5. Paper maketh prints **Your image is only as good as the paper it's printed on. Use glossy, photographic paper for high-quality prints.**

• Getting the right size In the section on image editing, we discussed changing the overall size of an image on screen – but resolutions on a monitor and on paper are two very different things. When using Elements to adjust your picture, go to Image, Resize, Image Size, but if you are adjusting the size of a picture for print you need to make changes to the lower box, Document Size, rather than Pixel Dimensions. Here you can set the dimensions for your photo as it will appear on the page in inches, centimetres or pixels.

• Dots per inch Changing dimensions for a print is not, by itself, enough. A photograph that looks crisp onscreen can become very blurred when printed out because of differences in resolution. Images look sharp onscreen at 72dpi (dots per inch), whereas prints require at least 150dpi. In the same box where you change the size of a document, you can also set its resolution as pixels per inch/centimetre.
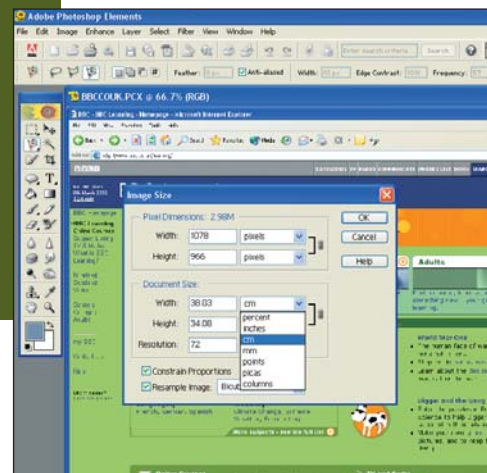
→ The same tools you use to change image size are also available to set the dimensions for print

Increasing the resolution of a photograph from a digital camera will usually reduce it in size (cameras operate at 72dpi), while the claims made by some scanner and printer manufacturers should be taken with a pinch of salt. Clear prints up to A4 size are usually possible at 300dpi; for enlargements, scan at 600dpi. Scanners that claim to import images at resolutions of 9,600dpi and above (sufficient to transform your postage stamp into an A0 poster) do so by digital interpolation. This has the side effect of turning images at full resolution into a blur.

• Paper and ink Finally, for the best print from your scanned images/digital photos, pay attention to the paper and ink you use. Photographic quality is typically achieved by printers that use four or more colours (mixing cyan, magenta, yellow and black). Don't choose a cheap printer that does not provide a cartridge for true black, as shadows and dark areas will be muddy.

Likewise, do not expect spectacular results if you intend to print on copier paper. Something that is sufficient for letters is not suitable for high-resolution graphics. Be prepared to use glossy coated paper, or high-quality matte stocks, if you want to produce an image worthy of being displayed. ■

Where to buy

Digital cameras
• Olympus Camedia C-220 Zoom **0800 072 0070; www.olympus.com; £164.**
• Nikon Coolpix 4500 **0800 230 220; www.nikon.co.uk; £495.**
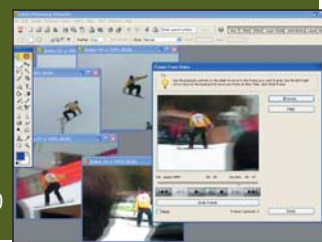• Nikon Coolpix 5700 **0800 230 220; www.nikon.co.uk; £850.**

Flatbed scanners
• Canon CanoScan D1250U2 **08705 143 723; www.canon.co.uk; £75.**
• Umax Astra 4500 **0870 906 4400; www.umax.co.uk; £68.**
• Visioneer OneTouch 8700 **01483 445 480; www.visioneer-europe.com; £83.**

Image-editing software
• Adobe Photoshop Elements 2.0 **020 8606 4000; www.adobe.co.uk; £59.**
• Adobe Photoshop 7.0 **020 8606 4000; www.adobe.co.uk; £499.**
• Paint Shop Pro 7.0 Anniversary Edition **www.dabs.com; £35.**

← Olympus Camedia C-220 Zoom

↑ Canon CanoScan D1250U2

→ Adobe Photoshop Elements 2.0