

Digital photography is a rewarding pastime but it's frustrating when pictures don't turn out as you imagined. Gordon Laing looks at how to set up particular effects, cope with different lighting conditions and what to do when either your camera or photos go horribly wrong

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Take better digital snaps

Have you ever felt your camera was conspiring against you? You took a photo of a spectacular vista, colourful sunset or fabulous portrait, but your camera saw something completely different. Maybe the subject wasn't in focus or perhaps the image was too bright. Camera shake could have spoiled a shot and undesirable reflections ruined another.

Digital photography is deceptively easy but many of the problems we faced with old film cameras continue to haunt us. Incorrect exposures and out-of-focus images are equally possible with digital cameras, while storage space and battery life are further concerns.

Don't give up, though. Getting the photos you want is just a matter of learning a few easy tricks. Over the following pages we'll explain the essentials of creative photography and show you how to control focus to achieve sharp landscapes and stylish

portraits. Challenging shots such as extreme closeups and night exposures will no longer pose a problem and you'll see how a flash can be useful even in broad daylight.

Finally, we'll look at the thorny issues of memory, battery life and megapixels, along with ensuring your camera is working at its best possible quality. It's time to make the most of your digital camera, exploiting its qualities, avoiding the pitfalls and ultimately taking the photos you want.

Megapixel mania

Before taking any photos it's important to ensure your camera is using the best quality settings, especially as many models default to those which won't exploit their maximum potential.

Most devices allow you to reduce their resolution or increase the compression in order to squeeze more images on to the

Everything in focus

memory card. Unfortunately, both these actions reduce quality. Unless you're exclusively shooting pictures for a website or to send by email, select the highest resolution and lowest Jpeg compression settings. You can always shrink copies of the pictures using your PC later for online use.

Watch out for your camera defaulting to its second best compression or resolution settings and correct it if you want top-notch quality. The Tiff and RAW options on sophisticated cameras are for expert users – most of us will be fine with the best quality Jpeg setting.

If you're new to digital photography and are wondering how much resolution you really need, it's all a question of how much detail you want to capture. More megapixels means greater detail and bigger enlargements or crops before you begin to see those jagged edges.

You're free to print your photos as large as you like but, generally speaking, for photographic quality most inkjet printers like to be fed 200ppi (pixels per inch). Consequently, 2, 3, 4 and 5Mp cameras are capable of producing good-looking inkjet prints measuring 8x6in, 10x8in, 11x9in and 13x10in respectively. Commercial mini-lab services prefer 300ppi, resulting in maximum print sizes one third smaller than those of inkjets.

Remember, if you crop an image you'll also have fewer pixels to play with which will mean printouts are smaller too. We therefore recommend choosing a camera that can capture at least 3Mp for reasonable flexibility.

Memory issues

Memory is clearly an important aspect of digital photography as it literally dictates how many pictures you can take. Earlier we recommended selecting your camera's highest resolution and mildest compression settings, but these in turn produce the biggest file sizes and fill the memory card quickly.

File sizes vary between cameras and compositions but as a rule of thumb you're looking at between 1MB and 2MB for each digital photo recorded at its highest resolution and best quality Jpeg settings. It's therefore easy to calculate how much memory you'll need to store a certain number of photos. The 16MB cards supplied with most cameras are inadequate for anything more than a handful of snaps, which is why we'd recommend buying a 64MB or 128MB SmartMedia memory card as soon as possible.

There are several memory card formats available – just ensure you're buying the right one for your camera. If you're choosing a new model and want lots of memory it's worth considering a device that takes the cheapest variety. CompactFlash is currently around half the price of Memory Stick and xD media. A 128MB card should cost between £25 and £60 inc VAT, depending on the format.

Memory cards can be erased and reused but you'll want to back up your images first. Most people copy their snaps on to a PC, but what happens if you run out of space on the move? Many professionals carry notebooks or portable disks for this



1 Landscape photos benefit from having a subject in the foreground but this often appears out of focus – as illustrated by the rock foliage



2 The trick to having both the foreground and background in focus is to use a large depth of field set to a high f-number. If your camera has an aperture priority mode, select an f-number such as 11 or 16. If your camera has a landscape preset mode it may automatically select a high f-number. If you want a portrait with a blurry background, go for a small depth of field set to the lowest possible f-number (usually two or four). Also stand back and use the optical zoom to accentuate the effect

Night shots



1 Most night photos are shaky and dim, as shown here. The key is to keep your camera steady and use long exposures – for skylines you’re looking at between one and four seconds, as well as some experimentation to get it right. No one can handhold an exposure this long so don’t even try. While tripods are the ultimate answer, equally good results can be had by simply balancing your camera on a nearby ledge, post or railing. Place the device on top of an item of clothing to adjust the angle and protect from scratches



2 To eliminate wobble when pressing the shutter button, just activate the self-timer and stand back. Loosely hold the strap in case it falls. It’s also a good idea to switch off your flash unless there’s someone you’d like to illuminate in the near foreground. Long exposures are normally set using shutter priority modes, but if your model doesn’t have one, or a specific night mode, leave it on auto and ensure the flash is switched off. This will force the camera to make a longer exposure

very purpose, but the rest of us should either ensure we’ve got enough memory for a trip or look for alternative means of backup. Some high street photo labs can copy your images on to blank CDs, allowing you to free up precious memory mid-holiday – but check this facility is available before relying on it.

Keep on running

The lifespan of digital camera batteries depending on the model and usage, but one to four hours of solid use is about standard. In practice you’ll power down the camera between pictures, allowing you to take around 50 photos over a period of several days.

If you’re going away for more than a few days, or routinely make heavy use of your camera’s screen and flash, it’s crucial you take your recharger and preferably some spare batteries too. Make sure all the cells are fully charged before you leave. Fortunately for world travellers, most rechargers can adapt to international voltages. However, you will still need a travel adapter so the recharger fits foreign mains sockets.

Of course, if your holiday takes you to a remote location without mains electricity then you’ll have to carry sufficient spare batteries to last. While we ultimately prefer cameras that use lithium-ion cells (thanks to their long life, light weight and short recharging time), photographers consistently visiting remote locations may be better served by a camera that takes readily available AA batteries. Be aware, though, that disposable alkaline AA cells won’t last long in a digital camera.

Take care

Speaking of exotic locations, it’s important to remember a digital camera is a sophisticated piece of equipment with fine electronics, mechanics and optics. Water or even excessive damp and humidity could permanently damage it. Some also fail to operate at extreme temperatures.

If your model gets wet allow it to dry out somewhere warm for a few hours before trying to switch it on. In a worst-case scenario where the camera is broken, the memory card should still be okay as it’s quite a robust item. Unlike sensitive film, cards are also oblivious to x-ray machines used to scan luggage at airports.

If you are going on an action holiday or are likely to spend a lot of time on the beach or near water, consider buying a smaller model with an optional waterproof casing. Otherwise it might be best to stick to an old-style film camera.



Through the window

Maximum exposure

All digital cameras have an autosegting which calculates what it anticipates will be the most suitable exposure. Most devices get it about right, but mistakes happen. There will also be times when you want a darker or brighter result.

In these situations use the exposure compensation settings available on all but the most basic cameras. These allow you to deliberately over- or underexpose the image and are normally offered in a range described as -2EV to +2EV, in EV increments of a third. A setting of -1EV halves the exposure and darkens the picture, while +1EV doubles the exposure making it brighter.

Deliberately underexposing an image can be an effective way of cutting through haze or bringing out a colourful sunset. Overexposing is also handy if your subject is dark and you can't or don't want to use a fill-in flash (we'll discuss this later on page 116). Just remember to set the exposure compensation back to zero afterwards though.

Focus group

All digital cameras offer an autofocus mode but, as with autoexposure, it can easily go wrong. The most common problem is where the subject in the foreground is out of focus, but the background is sharp. It's clear

that the camera has focused on the background by mistake, but how do you fix it?

The trick is to understand that most cameras will only focus on the spot in

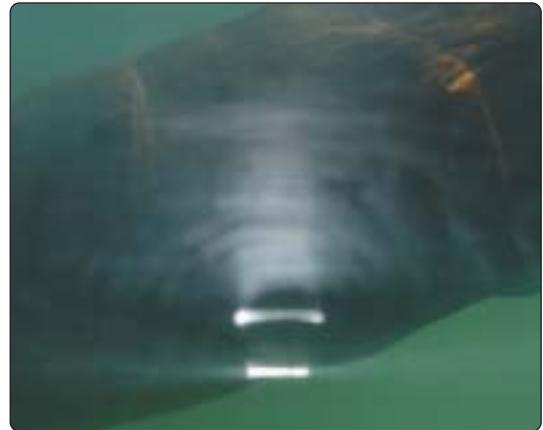


the middle of the frame. So if your subject is not bang in the middle you should first point your camera at it, then lock the focus by pressing the shutter button halfway. Now recompose the shot while keeping the button half-held and, finally, press it all the way to take the photo.

The first time you try this it's easy to press the button all the way and accidentally take the photo early. It takes practice to learn the right pressure, but at least a digital camera lets you delete the pictures that went wrong.

Focus-locking is an invaluable technique, but it relies on the camera's autofocus system to be working in the first place. Under some conditions the autofocus won't work properly – for example, at dark parties or through windows.

In such cases you'll need to use manual focus, with a setting of 1-2m for people at parties and infinity (indicated by a figure 8 on its side) when shooting through a window. If you're taking extreme closeups activate your camera's macro mode, indicated by a small flower icon. Like exposure compensation, though, ensure you set your camera's autofocus mode afterwards.



1 There can be great views through the windows of tall buildings, aeroplanes and aquariums, but sadly most are plagued by reflections. Flashes create awful reflections, so simply turn them off. This is also a good idea when photographing living creatures as it could disturb them – to avoid frightening the shark we deliberately waited until he had swum by for our example here



2 To avoid other internal reflections, put your camera right up against the window and use your hand or an item of clothing to shield any gap between the lens and window from any interior lights. By adjusting your hands and the camera you'll soon see the undesirable reflections on your camera screen and how best to minimise them.

Focusing can sometimes be a problem. If you're in a plane or a tall building it's safe to say the view is far away, so manually set the focus to infinity (indicated by a figure 8 on its side). If the view is hazy, you should also try underexposing a little by using exposure compensation

Fill-in flash



1 Everyone knows a flash is essential when taking photos of people in dark conditions, but it can also be a lifesaver at other times of day. The portrait here was taken at noon on a sunny day, but the background was much brighter than the foreground. Your camera can only expose correctly for one but not both, so either the subject will be too dark or the background too bright



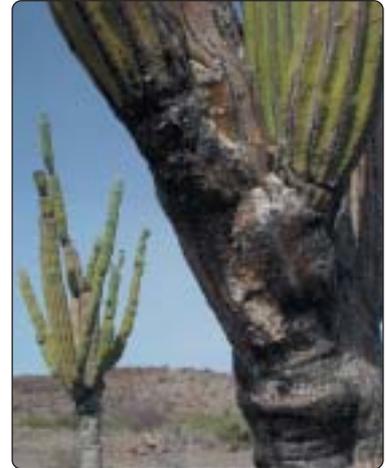
2 The solution is to expose the background but use the flash to illuminate the foreground. Since the flash has a range of just a few metres it will only affect the nearby subject – in our example this has allowed both the foreground and background to be correctly exposed.

This technique is called a fill-in flash and is also invaluable during dusk, dawn or dim conditions; you should additionally use it in long night exposures to illuminate someone stood close by. To force your flash to fire, cycle through the flash settings until you see the icon with the lightning symbol

Field of dreams

Depth of field is a technical term referring to how much of the picture is in focus. A large depth of field has lots in focus, while a small depth of field only has the main subject in focus.

The former is perfect for compositions where you want close and far away items to be sharp, while the latter is great for portraits with blurred backgrounds.



The depth of field is controlled by the lens aperture, described by its f-number. Smaller f-numbers mean smaller depths of field; larger f-numbers mean larger depths of field. Digital cameras generally have a range of f-numbers between f2.8 and f11.

These numbers are traditionally selected using aperture priority mode, but this function is restricted to more sophisticated models. Many digital cameras can automatically set small or large depths of fields by selecting portrait or landscape scene preset modes. Note that larger depths of field require longer exposures to compensate, so hold the camera steady. Depth of field can also be accentuated by the lens' focal length.

Exploiting your lens

Most digital cameras are fitted with optical and digital zoom facilities. It's best to disable the digital zoom as it just crops the centre of the picture and enlarges it, thereby losing quality. The optical zoom uses lenses to get closer to a subject with no loss in quality, but zooming in and out also has other effects.

Shorter focal lengths have larger depths of field, so if you want the maximum in focus zoom out to the widest setting. Conversely longer focal lengths have smaller depths of field, so if you want a portrait with a blurry background stand back and zoom in to the closest setting. Adjusting the lens in this way in combination with specific aperture settings will best control the depth of field.

Finally, rather than just standing still and zooming in and out, try moving closer or further away from your subject to see how the composition changes and often improves.



Perfect closeups

Flash tips

The key to using the flash is to understand its limitations. Built-in flashes are only effective over a distance of a few short metres and, beyond this, have no effect at all. Unless your subject is within a few metres, you might as well switch off the flash. It's also a good idea to switch off the flash when shooting through windows to avoid reflection (see *Through the window* on page 115).

Flashes are useful in more than just darkened rooms, though. If you're taking a portrait outdoors during dusk, at dawn, in dim conditions or even on very bright days, forcing the flash to fire can really help illuminate the foreground subject. This is known as a fill-in flash and is essential when taking a picture of someone in a long exposure night scene.

Take a look

The big advantage of digital cameras is being able to use their screens to check a photo immediately after taking it. This is invaluable for checking exposure and composition, not to mention potentially blinked eyelids.



Beware, though, as the screen resolution is too low to confirm whether a picture is definitely in focus. So if you've got a particularly important shot, play it back afterwards and zoom in closely to ensure everything's fine.

Camera screens are also handy for tricky angles. While those that flip out and twist round offer the most flexibility, you can still pretty much see what's going on if you hold your camera above the heads of crowds – great for snapping celebrities or concerts.

Getting the best prints

Even the very best digital camera images can benefit from a certain amount of retouching or manipulation using your PC. We'll go into detail in future issues, but for now here's a few tricks to get started.

Prints can really benefit from having dark blacks and pure whites. Try slightly bringing in the extreme left and right sides of the levels or histograms in programs like Photoshop and Paint Shop Pro. Digital images can also look a little fuzzy, so consider electronically sharpening the image with the Unsharp Mask tool.

Many photos can also be improved by creative cropping – and not necessarily just to enlarge the central subject. Try cropping landscapes into wider shapes, or tall buildings into narrower ones to accentuate the effect. Just remember the two key rules: always work on copies so your original image is safe and, secondly, there is no right or wrong. Experiment to your heart's content. ■



1 Closeup photography is technically known as macro and virtually all cameras have a macro mode, indicated by a small flower icon. Some cameras can focus much closer than others, though, so check your manual to ensure you're within its limits. Successful results often require you to get much closer than you'd imagine. This photo of two flowers was taken at a distance of 15cm, which seems close when you're holding the camera



2 To achieve this really close result we were just 3cm away and virtually touching the flower; only a handful of cameras can focus closer than 5cm though. At such close distances it's easy to cast a shadow on the subject, so try not to stand between the subject and the sun.

Interestingly, the sun's reflection on our lens provided additional illumination of the flower's centre. Since even the slightest motions will be amplified, try and take macro shots of flowers on a still day