

JESSOPS

NO.1 IN PHOTOGRAPHY

making a start in photography



Jessops is proud to support The Scout Association
and sponsor the Scout Photographer Badge



know your camera!

welcome to the exciting world of photography!

To successfully complete the Photographer Badge, you will need to learn the basic functions of a camera, how to use accessories, and how to care for your equipment. You will also need to understand composition, exposure and depth of field, film types, how to produce prints and common photographic mistakes. This booklet aims to help you! Additional information can be found in the huge range of photographic books available - try your local library. And of course you will need to practise taking photos!

For the Photographer Badge you can choose to specialise in either **traditional** or **digital photography**. We have colour coded the guide (pink for traditional and purple for digital) so that you can easily see what applies to you.

You can also choose Video Photography - basic information is included in the booklet - please see your Scout Leader for further details on this aspect of the badge.

Good luck and get snapping!



Single use cameras

Single use cameras offer an inexpensive and risk-free way to take great photos. They are built complete with a film inside and once this is used up, the whole camera is sent for processing. They are perfect for taking to places where you may be worried about losing or damaging expensive equipment (Scout camp for example) and you can even get models suitable for underwater use - perfect for taking to the beach!



35mm or APS compacts

Compacts, as the name suggests, are small cameras. They have built in lenses and a range of features such as flash, red eye reduction (preventing the problem of red dots in the subjects eyes when using flash), auto-focus, self-timer etc. depending on the model. These are great 'point and shoot' cameras, they set most of the functions automatically - but they give you limited creative control.



SLRs

'Single lens reflex' cameras, often called SLRs, come in two main types - manual and auto-focus. SLRs give you greater artistic control as they can be combined with a vast range of interchangeable lenses and accessories (such as lens filters). You can also adjust almost every setting on the camera yourself - aiding your photographic knowledge and the creative possibilities!

With manual SLRs, the photographer is in complete control - and responsible for deciding all the cameras settings. With auto-focus SLRs you can choose a range of pre-set programmes for common situations such as sport, portrait or landscape. Here the camera chooses the relevant aperture and shutter speed (see pages 4 and 5) although as a beginner it is better to practise doing this manually. On an auto-focus model you can also set the camera to manual mode - meaning the camera operates in exactly the same way as a manual SLR.

Traditional cameras, whether single use, compacts or SLRs - capture images onto film. Film contains light sensitive salts, which react to light at different speeds depending on how coarse they are. The coarser the particles, the faster they respond to light and so the 'faster' the film.

Basic parts of a SLR camera



Digital cameras

Digital cameras come in both compact and SLR formats. Rather than saving an image to film, digital cameras save images onto memory cards. They have tiny sensors which convert an image electronically into 'pixels' (short for picture elements) which are put together to make up the complete image.

Capturing images this way means that as soon as the picture is taken, you can view it on the LCD screen featured on most digital cameras. If you don't like the picture, you can delete it and take another one - a great advantage over traditional film cameras.

Digital SLRs also have the advantage that they record the camera's setting for each image - allowing you to learn a lot about why certain images worked and others didn't.

Basic parts of a digital camera



Whichever type of camera you have, make sure you spend time getting to know it. Read your camera manual so that you are familiar with all its functions and programme settings - and make sure you practise using them!

Apertures

The aperture is the hole in the lens through which light travels and sets onto the film.

Apertures are known by 'F' stops. These can range from F1.2 (large hole) to F32 (tiny hole).

A typical sequence of apertures on a standard 50mm lens is:



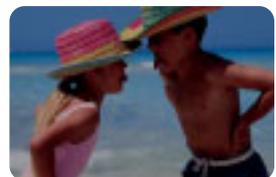
F1.8 F2.8 F4 F5.6 F8 F11 F16 F22
Large Medium Small

Largest hole = more light = smaller depth of field
Smallest hole = less light = greater depth of field

By using a combination of apertures and shutter speeds (see opposite) you can control the amount of light that gets onto the film (or is captured by your digital camera), the depth of field (or focus) and the brightness of the final picture.



Too much light gives **over exposure**
e.g. a picture that is too light



Too little light gives **under exposure**
e.g. a picture that is too dark

Start creating rather than just taking pictures!

- By setting the camera's aperture and shutter speed you have control of the final look of the picture and can govern exactly how light or how dark the picture will be.

By controlling the size of the aperture you can decide the depth of field in the picture - the area which is in focus.

Depth of field

This is the distance between the nearest and farthest parts of the picture that are in focus (sharp). As a rough guide F2.8 gives a very shallow depth of field, F22 gives a long depth of field.

For example, most landscapes need maximum depth of field - sharp focus from foreground to infinity. So you might use F16 or F22 and a slow shutter speed to get maximum quality. Your camera would need to be on a tripod to prevent camera shake (making your images blurred).



Maximum depth of field

By contrast, when taking a portrait you probably want the person being photographed to be totally in focus but don't need the background to appear sharp. Therefore you might use F4 or F5.6 and a faster shutter speed.



Minimum depth of field

Shutter speed

This is the speed at which the shutter blind opens and closes to let light onto the film at a given aperture (or lets light onto your digital camera image sensors). The slower the speed the longer the shutter is open, and the more light gets in.

Shutter speeds range from very slow (for pictures taken at night for example, which need more light) through to very fast - when you are capturing fast moving subjects in daylight.

Playing with the shutter speed allows you to learn about the different effects that you can create with your camera - for example blurring running water or lights at night with a slow shutter speed - (you will need to use a tripod for this).



Lights at night with a slow shutter speed



Movement with a fast shutter speed

Lens focusing

Just like manual and auto-focus SLRs, you can also get manual and auto-focus lenses. Manual lenses (where the lens is twisted to bring the subject into focus) can be used on either manual or auto-focus SLRs. They are used when you set the camera to manual mode.

Manual focusing takes practice but can be helpful in difficult photographic situations (such as low lighting) where an auto-focus lens may have trouble deciding what should take priority in the picture.

Auto-focus lenses focus automatically and can only be used with auto-focus bodies. The shutter is pressed half way on the relevant subject matter, the camera then focuses automatically. The shutter is then fully pressed to take the picture.



A picture in focus



A picture out of focus

Before you start to snap!

- Make sure you hold your camera correctly - a good grip is essential for maximum control and to ensure you are not covering essential parts of the camera such as the lens or flash.
- Remember to take a spare battery and film so that you don't miss that important photograph!

Composing a photograph

This is to do with picture structure and is as important as technical ability when producing a good photograph. The idea is to organise the elements in the picture to create the strongest and most striking visual impact.

The first rule of photography is to never be afraid to experiment! That doesn't mean you should snap just anything. If you want to create photos rather than just take photos, you need to think about what you want to capture and how you can achieve it.

Creating the photo means deciding how to frame the picture - including what you leave in and what you leave out. Don't just think of the centre of the picture - you need to be aware of the edges too! Look around the viewfinder and carefully compose the picture before pressing the shutter button.

Don't always place the main subject in the centre of the frame - look for more unusual compositions and move to the best vantage point to capture this. Look up and down at the scene as well as the straight 'what the eyes see' shot - try lying down, crouching or gaining height by using something to climb on.

Look for atmosphere, light, pattern, shape, texture and colour. Watch the background making sure there is nothing intrusive in your photograph - such as a post sticking out of someone's head!

Remember to think about the aperture you use. By using a large aperture you can throw the background out of focus to isolate the subject.

What makes a good picture?

- Interesting subject or mood
- Technical brilliance
- Action well caught
- Vivid colour and use of light



What makes a bad picture?

- Boring subject or bad composition
- Too much distance between you and your subject
- Unnecessary clutter and jumble or chopping off heads, hands etc when you don't mean to
- Camera shake
- Poor exposure - over or under
- Poor focus
- Lack of personal expression in the picture



Remember that anyone can take a picture. However, very few can take a memorable shot of quality.

Advice from the experts



Garry Coward-Williams
Editor, *Amateur
Photographer Magazine*

Portraits

Generally, with portraits the aim is to show your subject in the most flattering way possible. Firstly, use the longest focal length lens (or setting on your zoom compact) as you can. The extra distance between you and the subject naturally makes their face slimmer. Secondly, if you take the image from a viewpoint that is a little higher than the subject (i.e. looking very slightly down on them), that perspective narrows and therefore flatters the cheek lines and equally means that you are not looking up the subject's nose!



William Cheung
Editor, *Practical
Photography Magazine*

Land or seascape

The camera is not a fixed object in a fixed position - it can be moved. Taking a few steps closer into the scene or aiming the camera down to exploit an interesting foreground can make the world of difference. Turn your camera on its side: the landscape format obviously suits landscape scenes but the upright format can often do a much better job.

Top tips

Capturing sunsets and sunrises

Give extra impact to your landscape photography by capturing strong and interesting silhouettes. But remember never to look directly at the sun - especially through your camera lens.

Sport or action photography

Use fast shutter speeds to capture clear and sharp action shots. Then try following the action using a slow shutter speed - this blurring effect can be very effective.



Still life photography

Try to be original in the things you photograph - choose items that are important to you or reflect a particular subject matter (another hobby for example). Try different positions, lighting effects and depth of field to create a range of results.

Flash photography

Both traditional and digital photography requires effective lighting to achieve good results. A flash can be used to add contrast, create or prevent shadow, and to generally improve the look of your picture and allow you to experiment with different lighting effects. A range of studio lighting can also be purchased for these purposes.

Night photography

Try long exposures. These work well when moving traffic is included in the shot to create trailing light streaks. Use a tripod and medium or high-speed film.

Your portfolio

To complete the badge you need to produce 12 images, whether traditional or digital. When producing your portfolio, take a scrap book and write down any ideas which you might want to come back to later. With a bit of practise you will produce a portfolio of images you are really proud of!

Digital media

Digital cameras have removable memory cards, which are used to store images - the equivalent to film in traditional cameras.



There are various types of memory card available including CompactFlash, SmartMedia, Memory Sticks, xD Picture card, Secure Digital (SD). They all do basically the same thing - store your pictures. It just depends what camera you use as to which type of memory card you'll need.

Storing images

When you take a picture, the digital camera creates a file and saves it to the memory card.

The number of images you can save depends on three things. 1- the size of the memory card, - which is measured in megabytes, (MB's) ranging from 16MB to 1GB (1000MB). 2- the resolution at which the pictures are taken and 3- the amount of compression applied when storing the photos.

Once you have taken a picture you can transfer the image to your computer (via a connection cable) where you can simply save it or e-mail to your friends or family. You can also send your images via the Internet to a photographic printing service and get a set of prints produced. Results will be no different in quality from pictures taken with a film camera.

If you have a printer at home you can print images via your computer or direct from camera to printer with certain models. Special 'photo paper' is available to improve the finished result.

If you don't have a computer you can also take your memory card into selected high street photographic retailers and get photos back.

Once you have printed or saved your images, they can be deleted from your memory card, allowing you to take more pictures. Unlike film you can keep wiping your memory card and use it again and again, reducing costs!

Resolution, compression, digital manipulation and editing software

Understanding resolution

The higher the resolution, the higher the quality of the finished image, the larger size it can be printed.

Resolution is described either by stating the number of pixels running across an image by those down it - for example 1600x1200 - or by quoting the total number of pixels. The term 'megapixel' is used to describe one million pixels.

The higher the number of pixels, the better the resolution (and quality of the image).

Resolution guide

| |
|---|
| E-mail and Internet use only BELOW 1 MEGAPIXEL |
| Prints up to 6"x4" AT LEAST A 1.3 MEGAPIXEL CAMERA |
| Print size 7"x5" to 8"x6" 2 MEGAPIXEL CAMERA |
| Print size 10"x8" 3 OR 4 MEGAPIXEL CAMERA |
| Print size 10"x12" 5 MEGAPIXEL CAMERA |

The print sizes above are based on 200dpi (dots per inch) output resolution. Larger print sizes are possible by reducing the output resolution, however this will reduce the quality of the final image.

Remember - higher quality photo images take up more space on your memory card.

Your camera will allow you to adjust your image quality, so your memory card can contain both high resolution and low resolution images. Use the high-resolution setting when you want to make large prints but don't want to take many pictures, and low-resolution settings when you want to take a lot of pictures but will probably only want 6"x4" prints or e-mail the pictures to your friends.



Poor resolution image



High resolution image

Compression

Digital cameras will compress the pictures you take so more can fit on your memory card. The higher the compression you use, the lower the picture quality of the image. You can change the compression depending on how you plan to use the photo - for example if you are taking pictures for e-mail use, you may want to use the highest level of compression. A good general rule is when shooting pictures you plan to make into prints, set your camera at the highest resolution setting and the medium compression setting.

Digital manipulation and editing software

If you transfer your digital images to your computer you can turn your attention from 'taking' pictures to 'making' pictures instead.

Image manipulation software opens up a range of possibilities limited only by your imagination (and skill!) You can use the software simply to tidy up imperfections - say cropping your images, removing red-eye or sharpening colour. But why stop there? You can use a range of tools to change the whole look of your picture, from joining two photographs together for a panoramic view or adding or removing people or objects... the list is endless!



BEFORE



AFTER

Digitising traditional photographs

If you have a computer and a flatbed scanner for photographs or a film scanner for negatives or slides, you can scan in your existing images, creating an electronic image. You can then use this file in the same way as an image captured on a digital camera, to store, e-mail or order further pictures (from a photo store or via the Internet).



Of course you can simply take your original negatives or slides to your photographic retailer for further reprints. You can also have the images put onto CD so that you have an electronic copy.

If you don't have the original negative your local photo retailer can also produce extra printed copies from a photograph itself.

Film

Main film types

- **Negative (35mm)**
- **Transparency (slides for projecting)**
- **Advanced Photo System film (APS)**
- **Instant Film - for use with instant cameras only.** This film is self-processing and an image 'develops' a minute or so after the photo is taken.

Film size and exposures

Standard film sizes are 35mm and APS. You also get medium format (or 120 roll/sheet film) and large format (or 5" x 4" sheet film). 35mm is the smallest of these - basically the bigger the film size the better the quality - but it's normally more expensive too!

Films also come in various exposures - that's the number of images you can capture on the film. Most standard films come in either 24 or 36 exposures on negative film and 25 or 40 exposures on APS.

Film speed

This is expressed as an ISO number. This identifies the film's sensitivity to light/how fast it reacts to light coming through the lens. The most popular films are 100, 200 or 400 ISO - although films can range from 25 (really slow speed) to 3200 ISO (very fast - for sports photography for example). The smaller the ISO number, the less sensitive it is to light, and so it needs a longer exposure. The higher the ISO number is, the more sensitive it is to light.

Different speed films help you take pictures to suit different lighting situations. Slow film is great in bright conditions. Fast films are designed to be used in low light conditions, poor weather or indoors.

Film speed is directly linked to image quality - slower films give better quality, whereas faster films (400 ISO and above) give a grainier result with lower definition - although you can use this effect for creative results.

Colour or black and white?

Colour photography is about reality - the world as it appears to be - so what you see is what you get. Black and white tends to be used in a more specialised and creative way, making an image look arty or moody for example.

Visit your local photo retailer to check out the huge range of films available.

Doing your own processing

If you have chosen to take black and white 35mm images for your portfolio, you need to undertake some of the processing yourself. There is a lot to learn - but this can be one of the most educational and enjoyable aspects of photography. A book on darkroom photography may be a useful purchase.

A brief guide

In a darkroom, your black and white film can be removed from the camera, loaded onto a specially designed reel, and placed inside a developing tank. Developing chemicals are then placed into the tank for the stated time. The developer is then removed, and exchanged for the stop bath to halt the developing process. A fixer chemical is then used (to fix the image) before the image is cleaned by a special liquid wash. It can then be left to dry, after which it can be put into the enlarger ready for prints to be produced.

Making prints

In a darkroom, light is passed through the enlarger lens, via the negative, onto special photographic paper which is sensitive to light. The image - in positive - is exposed for a period of time (which you decide depending on the desired contrast/effect) to form the final image. This is tricky because the image will only be revealed after it has also gone through the required chemicals - developer, stop, fixer and a wash bath - but it is very satisfying to see the image appear after all your hard work! A test strip (where you see the effects of different exposure times) is a good idea before printing full photos.

Items you need include:

- Enlarger
- Chemicals
- Developing tray
- Photographic paper



What accessories might I need?

The list of accessories you can buy for your camera - especially if you use an SLR - is almost endless. What you will purchase depends greatly on the type of photos you want to create.

Essential:

Film or memory cards and batteries. You may also want to purchase a bag or case to protect your camera.



Desirable:

Tripod

A tripod will keep your camera steady and prevent camera shake. This is good for photography where you are using a slow film and in low light conditions.



Filters for your SLR

Filters can correct or enhance colours and create a range of special effects. For example a polarising filter can give dramatic skies. This filter intensifies blues and increases contrast and can also help with reflections. A Skylight/UV filter is to absorb UV haze in landscape photographs.



Flashguns and reflectors

These help to improve lighting and avoid problems with undesired shadows - especially for portrait or studio photography.



Inkjet paper and inkjet cartridges

For producing your own images at home from a printer.



Have a look in your photography book or in your local photo store to see the huge range of products available.

Caring for your camera

- Follow your camera's instruction manual to ensure it stays in perfect condition.
- If your camera has not been used for a while, check it to ensure that it is in full working order (or get an expert to check it for you).
- Make sure you keep your camera and lenses clean and dry and in a cool environment. Damp can cause fungal growth inside them, and heat can dry out the moving parts in the shutters.
- To keep it in top condition, regularly clean the front and back lenses. Do this with a soft anti static brush and lens cloth (don't breathe on the lens!).
- Using the lens cap when you are not using the camera will help to protect it from scratches and using a camera bag will keep the body protected from knocks and bumps.
- Be careful where you take your equipment. For example sand is very bad news for cameras. If you're on the beach make sure you keep your camera protected - something as simple as a plastic bag is a great way to stop sand-causing damage. Water and extreme temperatures will also damage your camera.



with this card

(name)

of

(Scout Group)

is entitled to

10% off

all single use cameras, film, inkjet paper, inkjet cartridges, developing & printing services, camcorder & audio tapes, paper & chemicals at any Jessops store.

Call 0800 652 9898 for your nearest Jessops store.

*Discount not currently available online.

Valid until 01/04/05. Not valid with bulk purchases or any other offers.

videography

There are two main types of camcorders - **digital** and **analogue**.

Digital models tend to be more compact, as they use smaller recording tapes. They can often also capture still images that can then be printed, e-mailed, or posted to web pages via a personal computer.



Analogue camcorders do not offer quite as good quality recording as their digital counterparts, although they are perfectly adequate for general use. They tend to come with a lower price tag and so are popular with home users.

Both formats come with a range of tape format options - these vary from model to model. For example MiniDV, Digital 8, VHS-C, 8mm, or Hi8. Each varies slightly in size, quality and price.

Remember that many of the topics covered in this booklet can also be applied to video photography. For example composition, knowing your products features and the importance of good lighting.

Just like still cameras, many camcorders have automatic settings. Once again, this can restrict your creative control - instead try to use manual settings wherever possible.

Main features to look out for:

- Optical zoom lens - for magnifying your subject
- LCD screen - for easy viewing when recording or playing
- Image stabiliser - which reduces camcorder shake

If you have a PC, once you have shot your film, you can transfer it to a computer for editing. A range of editing software is available for you to edit your footage and add special effects.

Before you start filming

Watch a range of different films and TV programmes and look out for the range of camera techniques used, such as panning and zooming. Make a note of the effects they create. Think how you can use these effects in your own film. For example:

Close-ups - highlight the importance of a particular item or person, adding dramatic effect

Long shots - setting the scene, establishing where we are.



JESSOPS
NO. 1 IN PHOTOGRAPHY

discount card



please present this card at the
beginning of each transaction
www.jessops.com/scout

JESSOPS
NO. 1 IN PHOTOGRAPHY

Jessops is Europe's leading photographic retailer with stores nationwide. It sells a comprehensive range of photographic products including traditional and digital cameras, camcorders, binoculars and accessories. Film and digital processing is also available.

For more information visit www.jessops.com
Tel: 0800 652 6400