Photography Badge

This is a short and simple article on the **basics you need to get your photography badge.** If you are really interested in photography, please use the Search box on most pages, searching for "Photography" and choose the article marked" Photography Extensive".

Requirements of Photography Badge:

1. Demonstrate and explain the use of your camera, video (camera) or other (ie: Blackberry or cell phone with a built-in camera)
2. Explain how your camera records an image as well as the developing process, if appropriate
3. Show examples of your work, explaining composition, choice of subject matter and lighting and exposure.

If you have been taking pictures with a camera for a while you will already know the basics; if you have a manual for your camera, I strongly recommend that you go through it with your camera in your hands. Manuals often will show you things that you did not even know about your camera!

1: Demonstrate and explain the use of your camera:

Applies to **Film** Cameras

Still camera Take the lens cap off, if there is one. Advance the film if you are using a film camera. In smaller, less expensive camera that may be a knob on the right side, at the top. On "SLR" (single lens, reflex) cameras and some other cameras, there is usually a lever that your right thumb flicks to the right a couple of times until the lever locks in place, indicating that your film has advanced to the next frame. Aim your camera at your subject.

Autofocus: Few, if any, film cameras have autofocus but there are some that you do not have to focus manually. Some less expensive film cameras have "no focus" or "infinite focus" meaning that the lens will focus on everything from a few feet in front of you to the horizon. The lens does not actually move or change focus.

Aim your camera at your "subject" - what it

Applies to **Digital** Cameras

Still camera Take the lens cap off, if there is one. Aim your camera at your "subject" - what it is you want to photograph. If your camera has manual focus, look through the viewfinder (usually at the top, centre) turn outside of the lens until the picture is sharp where you want it sharp. Press down the shutter release button. That's the one that actually takes the picture.

Autofocus: Many digital cameras have autofocus and pressing only halfway down on the shutter release will activate the autofocus, if you want to see what the picture looks like before taking it. Otherwise, just press all the way down and the autofocus will work as the picture is being taken. If you have a digital camera, some have a little LCD screen to check your picture with. Read

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Repeat until all the pictures are taken, usually a maximum of 36 images. Rewind the film into the canister before opening the back of the camera or all your shots will be ruined by too much light hitting the film. (Check your manual for how to rewind properly) Then take the film to the camera store or drugstore or supermarket that offers film developing.

If your camera has a flash, find out how it can be turned on and off (if it can) and be able to show the difference between a picture made with and without a flash.

(Here's a useful hint for using flash - think you don't need flash to take a picture on a sunny day? You will see people's faces, but if there is strong sunlight, you may see a lot of shadows on the faces; use the flash to take care of most of the shadows.)

your manual to see which button that is.

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2: Explain how your camera records an image as well as the developing process, if appropriate.

Apertures and Shutters and ISO...Oh my!

Aperture: At the front of the camera is the lens which helps focus the light entering the camera. But we don't want too much or too little light to enter the camera. There are two things we can control that change how much light enters the camera. The amount of light that actually enters the camera and also how long we let light enter the camera. Cameras have an **aperture** - a fancy word for a hole! The hole is behind the lens. Some cameras have apertures that are one single size but most have one that can change; they open up to let in more light or they close down to let in less light. Digital cameras often do this automatically for you.

Shutter: How can we stop light from coming into the camera until we want it? The **shutter** - it's like a little light-tight gate that the camera - when we press the picture taking button - lifts to let light come in to the camera. If we want more light we can leave the shutter open longer or if we want less light, we can leave the shutter open a shorter time. Because light travels so fast, what we think of as a long time might be a minute or two but the shutter may think of a long exposure time as a split second... a digital camera may be able to open the shutter for as little time as 1/2000 of a second!

ISO: How sensitive to the light is the camera? Well, that depends. A film camera uses film that is rated for different "speeds", and those are usually listed as an "ISO" number. (Older photo buffs may be used to "ASA" numbers.) The higher the number, the more sensitive to light the film is. That means that a low sensitivity (low ISO number) will require either longer exposure of light (the shutter is open longer) coming into the camera, or more light coming in (through a wider open aperture)... or a combination of longer exposure time and more open aperture. Generally, the lower ISO number - though it needs more light to make a picture - results in a better picture with lots of detail and rich colours.

What if the ISO number of the film is higher? The opposite occurs. Less time is needed for the shutter to be open and the aperture can be closed down to let in less light. A high ISO number will give a decent picture with less light and in less time... but the quality of the picture may not be as good as with a lower ISO. But if you don't have a lot of light available, higher ISO may be the way to go.

Digital cameras use the same ISO numbers but they can often go higher than most films and there are lots of ISO settings between high and low that are not available with film. But the images are also similar in that low ISO (if you have plenty of light) setting on a digital camera will usually give the better picture, (if you have enough light) but a higher ISO will let you get a picture using less light and/or faster shutter speeds.

What happens once the light gets inside the camera?

Digital Camera: Light enters your camera through a lens. The lens "inverts" the light rays so that they fall on the film or on the digital camera's sensor *upside dow*n. A digital sensor will send the image it has captured to be electronically processed into an electronic file. This file is further processed so when it is sent to a screen in the camera, or to a computer and printer, it looks like the picture we took, including being right side up.

Video cameras work pretty much the same way except that they store a long series of images on magnetic tape, or a mini-hard drive, or in large capacity "memory". When the long series of ever-so-slightly-different still images is played back it appears that they are moving pictures!

Film Camera:

Film cameras, though pretty easy to use, have a complex way of recording your image. Light enters your camera through a lens but not until a shutter opens up for a brief time. The lens "inverts" the light rays so that they fall on the film or on the digital camera's sensor *upside dow*n. (When you get the pictures printed, we use a 'highly technical process' with the paper prints to make sure that we see them right-side-up. We turn them around!)

If you are using film, when the light hits the film inside the camera, (which is in total darkness except for the short time the shutter is open) the light changes some photosensitive dyes (meaning they react when light falls on them) which are included with tiny particles of "silver halides". These dyes and silver layers are in ultra-thin layers on the surface of the "film" which is really just a long strip of thin plastic. There is no picture on the film at this point. (There really is one, sort of- it's called a "latent image" but it cannot be seen yet.) Later, the photofinishing lab sends the film through certain chemicals that develop that latent image into an image you can see- though it's not what you might expect to see. The exact chemicals used depend on the kind of film but the basic steps are:

Developer, which turns the latent image into a "negative" image.

Then a "**Stop bath"**, a chemical that stops the development so the image is the way we want to see it. With no stop bath, the latent image would continue to develop until it was all black! It's kind of like baking cookies- you bake them until they are just right and then stop the baking process.

Finally, there is the "**Fixer**". Fixing in this case, means that it is "fixed" in place (like a "fixture" that doesn't move - it's "fixed"). The fixer chemical makes sure that the image will not deteriorate for a very long time.

So, at this point, we have an image on the film. Let's deal with one particular "frame" or image. If you look at it now, everything is backwards, that is a "negative". Light areas of the picture are dark and dark areas are light! It is a negative image- everything is the opposite of what it should look like. How do we get a picture of everything the way it should be - a "positive" picture? By making another negative - of the first negative! This is done by shining a light through the negative image on the film so the light hits photosensitive paper (just like the film was photosensitive). The paper also produces a "negative" image. But since it's producing a negative image ***of*** a negative image, it comes out as a positive image! A double negative (negative film plus negative photo paper) produces a positive image.

And, yes, the photosensitive paper also goes through a developer, stop bath and fixer.

3: **Show examples of your work, explaining composition, choice of subject matter and lighting and exposure.**

That's the easy and most fun part! Simply bring in your images, on paper, or a computer screen or a data (video) projector. **Explain to a Leader how and why you made the images the way you did, and tell us why the pictures was "composed" the way it is.** For instance if you have a picture of a friend but 90 percent of the picture shows the field of hay behind him, did you want all that hay in the picture of did you want it to be mostly your friend? Did you have your friend face into the sun so your camera did not have to face the sun? Are you able to explain the exposure time and "F stop" (how wide or closed the aperture, the opening behind the lens) was? Digital cameras may make that information available - they often also give you no choice in the exposure.

Well, that's what you need to get the photography badge. If you want to know more about photography, you can use the search box on this website and search for “photography extensive”.