Digital Photography Camera Manual

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Know your Camera

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As with any piece of electronic equipment, you want to take the time to learn how to operate your camera correctly.

o The first step is reading over the manual.This is important, since you want to ensure you are familiar with basic operations, charging instructions, how to load memory cards, transfer images to your computer, etc.

o For your first shots, limit the settings you change so that you can get started quickly.

o On most digital cameras, you adjust settings using a menu that is displayed in the camera's LCD panel.

o The settings are within menus much like computer software.

o Your camera will also have a control on it – usually on the back or top – that functions like a four-sided computer mouse so you can select different settings.

SHUTTER SPEED

Shutter speed refers to the amount of time the camera's shutter is open. Longer shutter speeds will cause moving subjects to appear blurred. Freezing quick moving subjects require fast shutter speeds.

Shutter speeds slower than 1/120 of a second require a tripod to eliminate camera shake.

Task:

- Select a well lit moving subject.
- Select a slow shutter speed (approx. 1/8) and take a picture.
- Adjust the shutter to approx. 1/30 and take a picture.
- Adjust the shutter to approx. 1/500 or faster and take a picture
- Repeat the series with another subject.

Note:

Fast shutter speeds may result in underexposed (dark) pictures. You can compensate for this by adding light to the subject using the hot shoe flash. An alternative method would be to increase the camera's ISO speed.

Examples:

High shutter speed
Aperture – f/4.5
Shutter speed – 1/30 sec.

Low shutter speed
Aperture – f/20
Shutter speed – 1/3 sec.

WHITE BALANCE

White balance is a camera feature that compensates for colour cast in the pictures caused by the colour temperature of the lighting you are working with. Natural, incandescent, and fluorescent lights all have their own colour which will effect how white appears in your photos. The camera has an automatic white balance setting but it also allows you to select different settings based on the lighting that you are using.

Task:

- If the weather is nice select an outdoor subject that contains white areas.
- Use the camera's controls to adjust the white balance to natural light. Take a picture.
- Readjust the white balance to Fluorescent and repeat the picture.
- Readjust the white balance to Incandescent and repeat the picture.
- Select and indoor subject and repeat the process taking three more pictures indoors.

Examples:

Incorrect white balance

Correct white balance

ISO SPEED

ISO refers to the speed at which the camera's CCD captures the image. Lower ISO speeds (200) create a higher quality image but require longer exposure times. Lower speeds are well suited to brightly lit subjects and still life photos. Higher ISO speeds (1000 or higher) result in quick exposure times with slightly reduced quality. Higher speeds are suited to low light conditions or moving subjects.

Task:

- Select a subject.
- Use the camera controls to adjust the camera to the lowest available ISO speed and take a picture of your subject.
- Readjust the ISO speed to the highest available and take another picture of the subject.
- Select another subject and repeat the process.

Examples:

High ISO – 1600

Medium ISO – 400

Low ISO – 200

Settings

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Aperture

Aperture refers to the size of the hole the lens uses to allow light into the camera. Aperture is measured in F–stops with an F–stop of 3.5 being a large aperture and an F–stop of 22 being a small aperture. Large apertures will allow light into the camera quickly but they create a picture with short depth of field. This means that only a small range of the picture, the subject, will be in focus. Conversely, a small aperture allows less light into the camera causing longer exposure times but the pictures will have large depth of field. This means the foreground, background, and subject will be in focus.

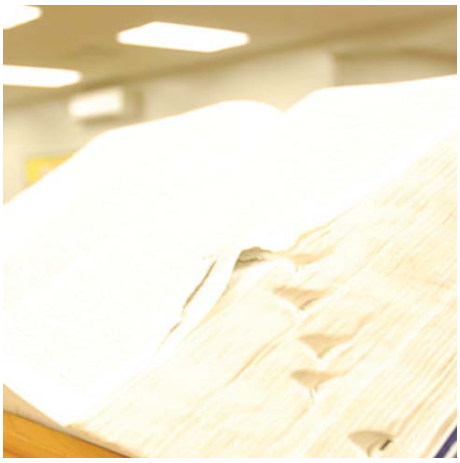
Task:

- Select a well lit subject with good range of depth and detail along the Z– axis.
- Set the camera's aperture to the largest available aperture (lowest F–stop) and take a picture.
- Set the camera's aperture to the smallest available aperture (highest F–stop) and repeat the picture.
- Select another subject and repeat the sequence.

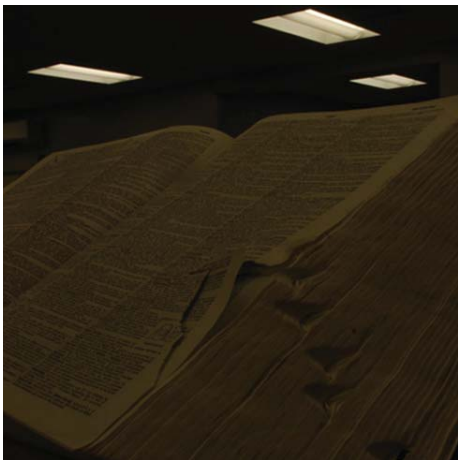
Note:

Reducing the aperture will mean that less light is allowed into the camera resulting in longer shutter speed times. This means that you must use a tripod to eliminate camera shake. It is a good idea to use the self timer mode on the camera to prevent camera shake caused by pressing the shutter button.

Examples:



Over–exposed
Aperture – f/3.8
Shutter speed – 1/10 sec.



Under–exposed
Aperture – f/25
Shutter speed – 1/10 sec.

Correct exposure
Aperture – f/9
Shutter speed – 1/10 sec.

DEPTH OF FIELD

Depth of field is the distance to which objects behind and in front of the focus point appear to be in focus. Large apertures (low f–numbers) reduce depth of field, blurring objects behind and in front of the main subject. Small apertures (high f–numbers) increase depth of field, bringing out details in the background and foreground (note that depth of field is also

influenced by other factors, such as focal length and focus distance). Short field depths are generally used in portraits to blur background details, long field depths in landscape photographs to bring the foreground and background into focus. To preview depth of field, press and hold the depth–of–field previewbutton. The lens will be stopped down to the current aperture value, allowing depth of field to be previewed in the viewfinder. The camera's aperture setting also controls the depth of field of your photos.

Note:

o Depth of field is the range of distance from the camera lens that appears in sharp focus.
o The smaller the aperture opening (or higher F–Stop number), the greater the depth of field (or larger range of focus).
o The larger the aperture opening (or smaller F–Stop number), the shallower the depth of field (small range of focus).

Examples:

Shallow depth of field
Aperture – f/4.5
Shutter speed – 1/20 sec.

Wide depth of field
Aperture – f/13
Shutter speed – 1/13 sec.

Working with Light

Camera Setup

You will need to shut off the flash on the camera as you do not want it to interfere with the light set up. You will also need to adjust the camera's automatic exposure area. Under normal conditions the camera calculates its exposure settings based on the full frame of the photograph. Since you are using a dark background with a bright subject This will result in your subject being overexposed (too bright). You will need to change the cameras exposure area to spotlight mode so that it will calculate exposure based only on the subject. You will be using a 3 point lighting kit with a key light, a fill light and a back light.

Lighting Setup

The key light should be set at roughly a 45 degree angle (both vertically and horizontally) to your subject. With the key light aimed correctly your subject should be brightly lit with heavy shadow patterns caused by the nose and the eyebrows.

The fill light will be used to soften, but not eliminate, the shadows. It should be set at approximately a 45 degree angle on the opposite side from the key light. Aim the fill light away from the subject and use the umbrella reflector to reflect light onto the subject. With both key and fill lights on the subject should be well lit with light shadow patterns caused by the eyebrows and nose.

The background light should not be aimed at the subject. It will be aimed at the backdrop in order to light it evenly and eliminate any shadows caused by the key and fill lights.

Working with Light

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Composition Tips

o Your initial impulse may be to use the camera's LCDmonitor instead of the viewfinder to compose pictures.
o You can do this, but this technique can also result in"soft" focus images; holding a lightweight cameraaway from your body is an invitation for motion blur.
o Holding the viewfinder to your eye provides built–instabilization that helps ensure sharp images.
o To stabilize the camera, hold it with one hand, andsupport it with the other.
o Keep your elbows close at your side. Stand with yourfeet shoulder–width apart to steady the camera.
o Get close to your subject when possible.
o This eliminates potentially distracting background details and focuses attention on your subject.
o Pay attention to the background!
o Use the **Rule of Thirds!** Avoid placing objects dead centre – this helps to create visual nterest.
o Try to take shots from interesting angles. Force people to see things in unique ways.

Natural Lighting

Natural Lighting – Example 1

Natural Lighting – Example 2

Three Point Lighting & Flash

Flash

1 Light

2 Lights

3 Lights

Rule of Thirds

Rule of thirds – Example 1

Rule of thirds – Example 2

Unique Angle

Unique angle – Example 1

Unique angle – Example 2

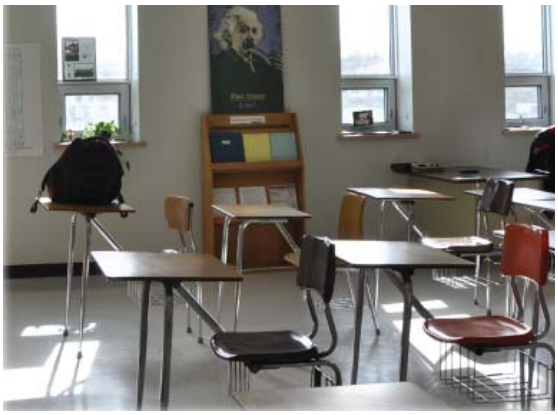
Nikon Vs. Canon

The Canon T5i and Nikon D90 are comparable cameras in quality and price; it all comes down to what your preferences are. Opperating the two cameras is quite different. The Canon has a touch screen and all the settigns are located in one place so that it is easy to change them all at once. Inversely, the Nikon has more manual adaptive settings. Aperture and shutter speed are controled by dials on the front of the camera.

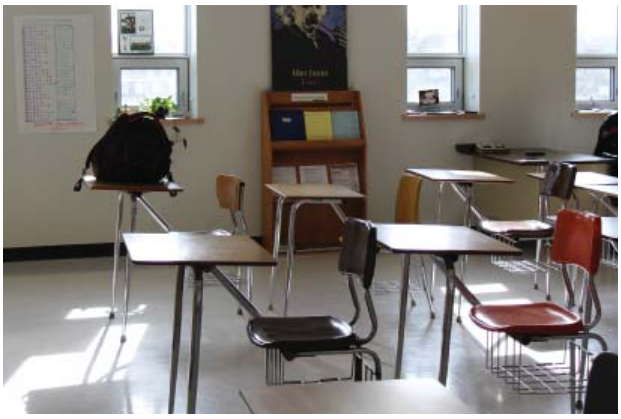
The actual quality of the pictures is very similar and settings can be adjusted to achieve whatever effect you want. So, to compare cameras, we used all manual settings to see how they cameras looked beside each other. The below pictures are what we found. You can compare for yourself.

Nikon – Auto settings

Canon – Auto settings



NIkon – Auto settings



Canon – Auto settings