

Digital Photography Assignment



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Image Composition



Your initial impulse may be to use the camera's LCD monitor instead of the viewfinder to compose pictures. You can do this, but this technique can also result in "soft" focus images; holding a lightweight camera away from your body is an invitation for motion blur. Holding the view finder to your eye provides built-in stabilization that helps ensure sharp images.

To stabilize the camera, hold it with one hand, and support it with the other. Keep your elbows close at your side. Stand with your feet shoulder-width apart to steady the camera. Get close to your subject when possible. This eliminates potentially distracting background details and focuses attention on your subject. Pay attention to the background!

Use the Rule of Thirds! Avoid placing objects dead centre – this helps to create visual interest. Try to take shots from interesting angles. Force people to see things in unique ways.



Perspective #1: In the Cafeteria under a bench



Perspective #2: In a corner in the Cafeteria



Rule of Thirds #1: A toy barn placed on a table



Rule of Thirds #2: A toy elephant placed on a table

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.



Slow Shutter Speed 2.5 Sec.



Fast Shutter Speed 1/8 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.



Manual White Balance



Automatic White Balance

Aperture Settings



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.



Big Aperture, Exposure Time $f/3.5$. The bigger the aperture the clearer and nicer the photo turns out.



Small Aperture, Exposure Time $f/20$. The smaller the aperture, the darker the photo comes out.

Depth of Field



The camera's aperture setting also controls the depth of field of your photos.

Depth of field is the range of distance from the camera lens that appears in sharp focus.

The smaller the aperture opening (or higher F-Stop number), the greater the depth of field (or larger range of focus).

The larger the aperture opening (or smaller F-Stop number), the shallower the depth of field (small range of focus).



The barn is blurred while the elephant looks clearer.



In this picture, the elephant is blurred while the barn looks much clearer.

ISO



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 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 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.



High ISO. ISO Speed-1600. The photo is too bright causing the image to look not too clear and kind of chipped.



Low ISO. ISO Speed-200. The photo is dark causing the image seem like it was taken at night.

Lighting



You will be using a 3 point lighting kit with a key light, a fill light and a back light.

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.

Remember:

to use the camera's review feature to record the exposure settings, ISO, Shutter, Aperture and note the lighting conditions for each of your photos.

- Leave the stage lights on and take a picture of the subject.
- Turn on the key light, shut off the stage lights and take a picture of your subject.
- Turn on the key and fill lights, shut off the stage lights and take a picture of your subject.
- Turn on the key, fill light, and background lights, shut off the stage lights and take a picture of your subject.
- Adjust the lights to create a different lighting arrangement such as backlighting, lighting your subject from below or your own variation and take a picture. Make sure you make notes or sketch the new setup.



1 Light in the control room.



2 Lights in the control room.



Natural lighting #1 behind the school.



Natural lighting #2 behind the school.

Nikon VS. Canon



Body

There is definitely a big difference in the bodies' construction. The Nikon is made from magnesium alloy, and is a far more appropriate camera if you aim to shoot outside in terrible weather conditions. The Canon is made from a plastic shell. Both cameras have comfortable hand grips. But, even though the Canon is made of plastic, it's both bigger and heavier than the Nikon.

LCD Screen

The Canon is without a doubt the better camera in the LCD department. The screen has more resolution than the Nikon. It's also equal at 3:2, which means that it displays images at a more natural ratio.

Image Quality

Both cameras perform well at high ISOs, giving printable results. The Nikon, however, produces much better colour interpretation in JPEG format than the Canon, although both produce stunning RAW images. Both cameras have a trend to overexpose in high-contrast situations, although it's definitely more noticeable on the Nikon by a large degree. This is probably because Nikons tend to run a little bright on colors, which reflects back into the problem.

In Conclusion

In my mind, the Canon just edges the Nikon because of its slightly greater image quality. For those new to DSLRs, it's an easier camera to begin using well straight out of the box. And if you're interested in making movies, the Canon has far more options.

I would, however, recommend the Nikon if you plan to work in harsh conditions (as it's far more solid) or are only ever going to shoot in JPEG. Otherwise, I'd recommend the Canon.

Nikon VS. Canon



Nikon



Canon

