How to Use a DSLR to Shoot Video

The basics

DSLR (Digital Single Lens Reflex) Overview

Shooting Mode: Video
Movie Recording Size and
Frame Rate
Exposure: (Same as when shooting photos)
ISO
Aperture
Shutter Speed
Focus: Manual
Recording Sound

www.usa.canon.com

How to use a DSLR

The basics

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Turn the Camera on

Make sure there is a memory card in it (with enough space for what you want to capture)

*Remember that video captures require more memory

Make sure there is a battery in it

(Charge the battery beforehand to be sure it is ready to go when you need it)

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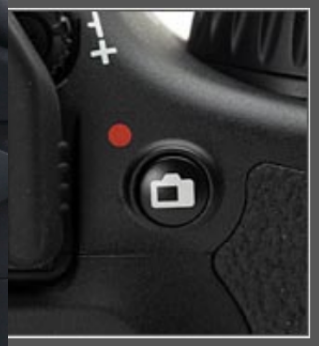
To shoot movies choose the
Movie Mode
And Live View



Icon	Description
	Movie mode Movies are recorded in .mov (Quicktime) format using H.264 codec for video and PCM for audio. The maximum duration is 29m 59sec, maximum file size is 4GB. You get the option of auto or manual exposure and can set various other parameters including (in a big step up from the EOS 500D) sizes and frame rates. A new 'crop' mode shoots VGA footage using the middle of the sensor (as opposed to downsampling the entire frame), giving the equivalent of a digital teleconverter. You start and stop recording by pressing the dedicated movie button on the back of the camera. Pressing the shutter button while you are recording a video will interrupt the video and record a stills image. The EOS 550D offers control over the various movie settings. You can change the following parameters: • Movie rec size (1080P, 720P, 640x480, VGA crop) • Frame rate (1080: 30, 24 or 24 fps, others 50/60 fps according to PAL/NTSC setting) • Exposure mode (auto or manual)
	Live View / Movie record In shooting mode a press of this button takes you in and out of Live View. The 'Live View function setting' option on the setup menu controls if Live View is available, whether a grid overlay is shown, how long the metered value is displayed and the type of Auto Focus used in Live View mode; Quick mode (Passive; mirror-flip), Live mode (Contrast detect; like a compact camera) or Face Detect.

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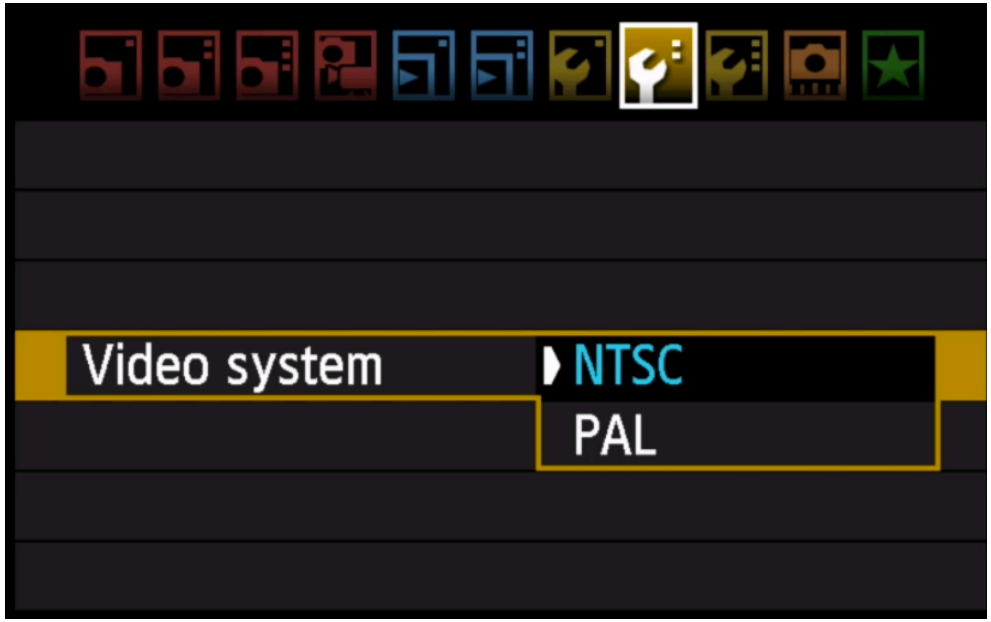
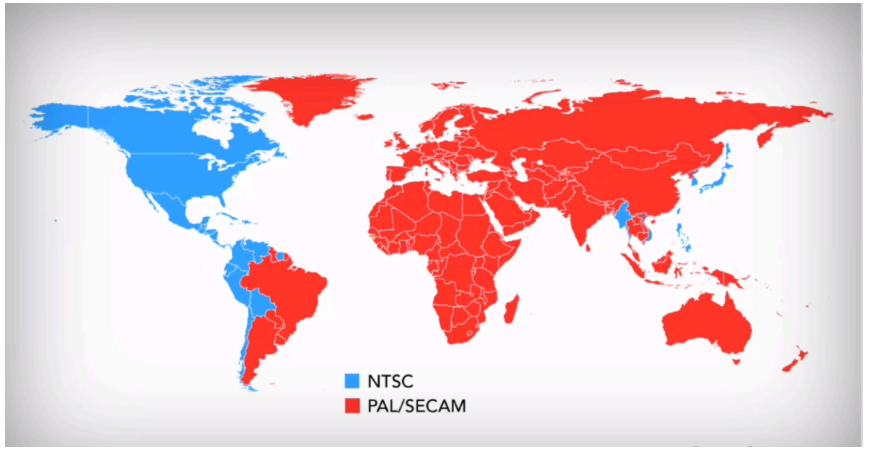
Choose the Video System you want to use
In America we use the NTSC

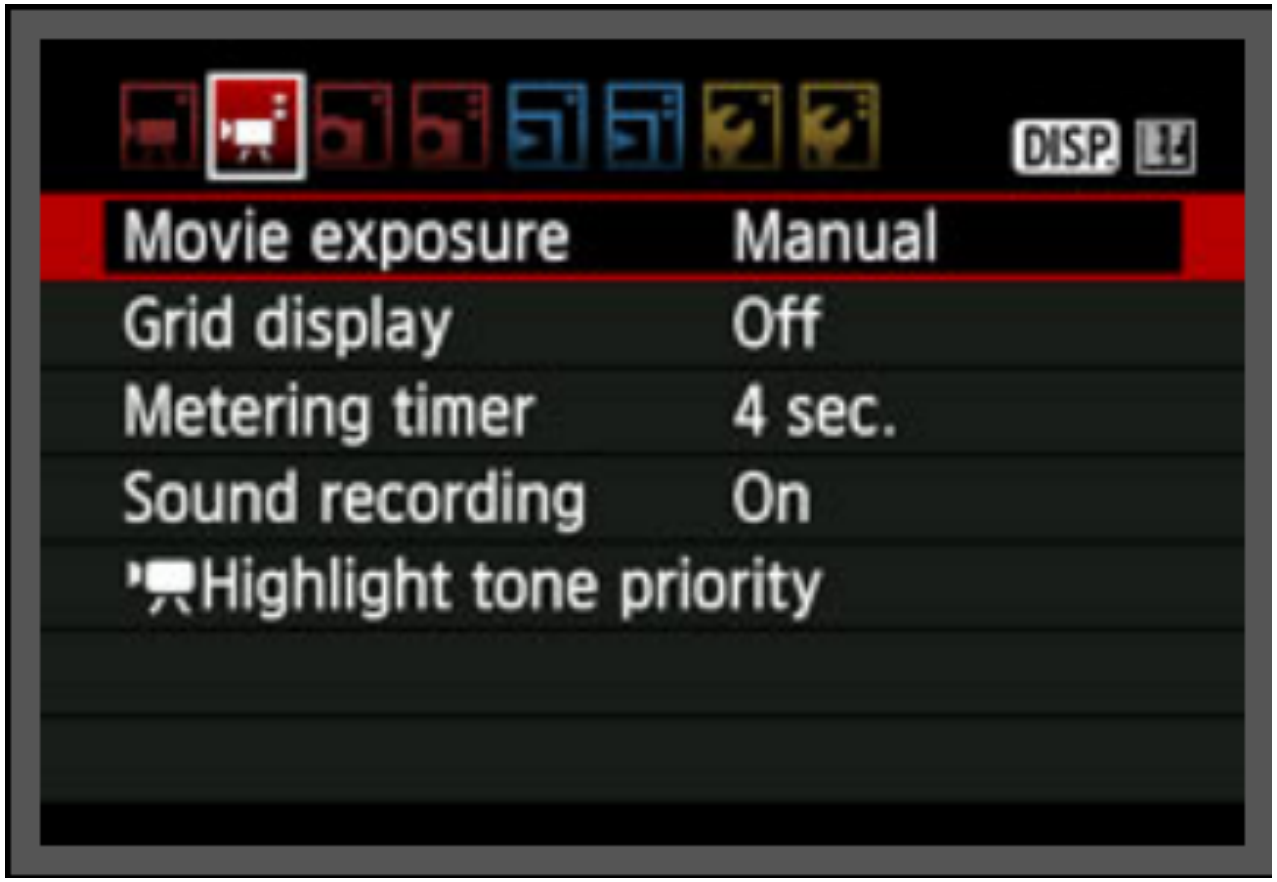




How to use a DSLR

The basics

Set the Movie Exposure to Manual



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The basics

Choose your Image Record Size and your Frame Rate.

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www.lynda.com

How to use a DSLR

The basics

It is always best to choose the best possible quality.

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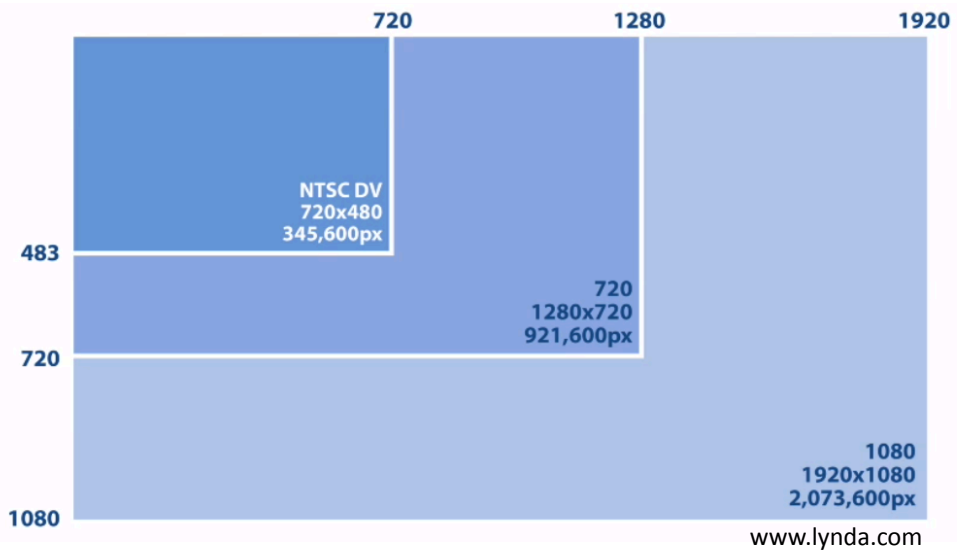

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The basics

Video is just a series of many still photographs in a row.
Frame Rate Refers to how many frames per second are being captured

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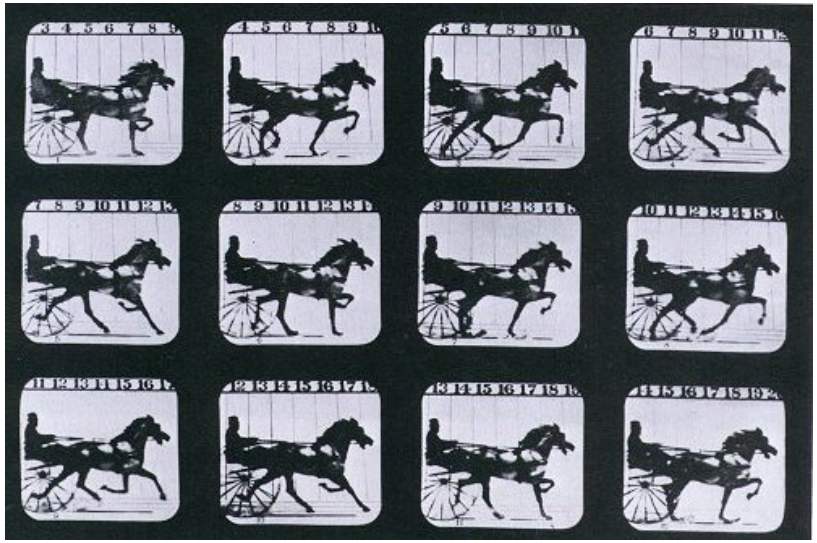

http://www.gdim.co.uk/00219434/files/2013/02/carriage.jpg

24 fps -24 frames are being captured every second.

30 fps - 30 frames are being captured every second.

60 fps - 60 frames are being captured every second.

How to use a DSLR

The basics

Which Frame Rate you should use depends on what type of feel you want to achieve.

24 fps -24 frames are being captured every second.
Has a Cinematic Feel (What you are used to seeing in traditional movies)

30 fps - 30 frames are being captured every second.
Has a Video/ Broadcast Feel

60 fps - 60 frames are being captured every second.
Has an almost Hyper-Reality Feel (Good for Sports or Action)

How to use a DSLR

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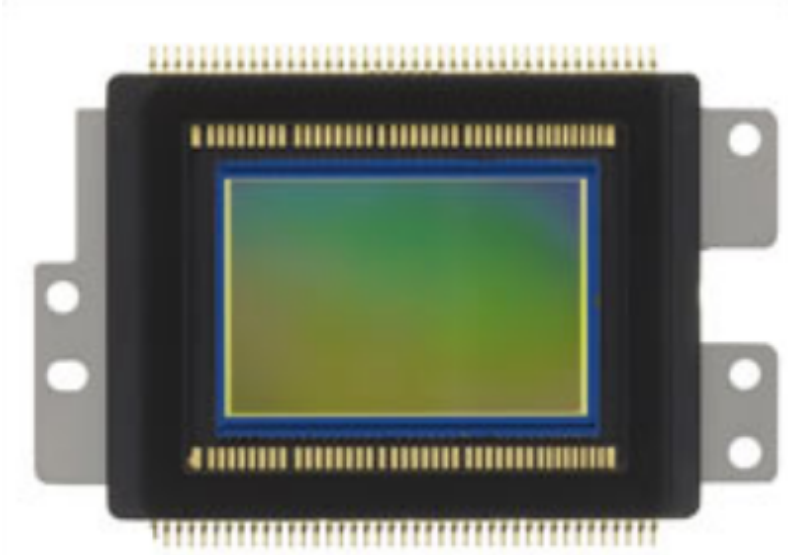
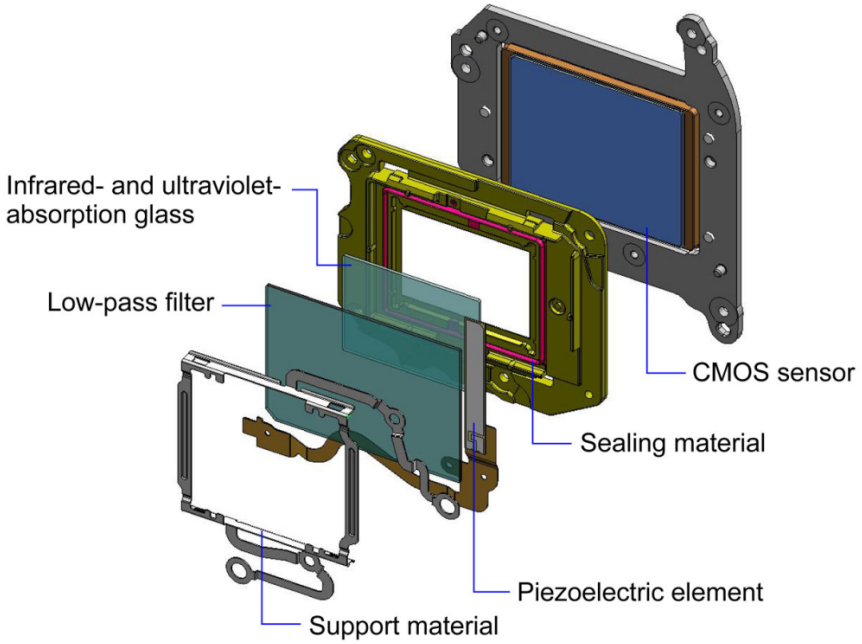
Exposure

Exposure is the amount of light hitting the camera's sensor when you take a photo. Think of it like film speed.



18.7 megapixel CMOS sensor



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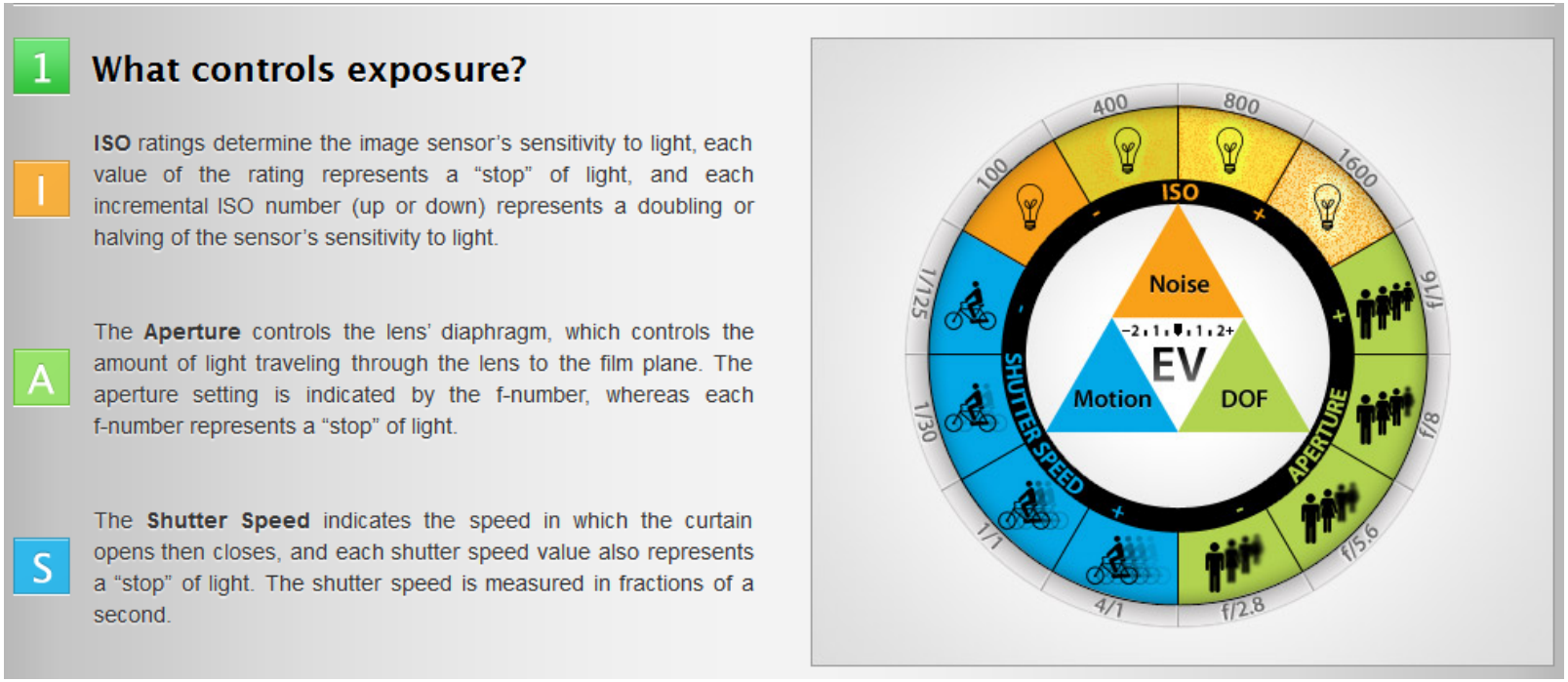
How to use a DSLR

The basics

Exposure

When you're changing the settings on a camera, you're trying to find the proper exposure for the subject and lighting conditions. Generally, you will want the exposure set so that the image captured by the camera's sensor closely matches what you see with your eyes.



http://www.exposureguide.com

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Exposure

When these three elements (ISO, Aperture and Shutter Speed) are combined, they represent a given exposure value (EV) for a given setting. Any change in any one of the three elements will have a measurable and specific impact on how the remaining two elements react to expose the image sensor and how the image ultimately looks. For example, if you increase the f-stop, you decrease the size of the lens' diaphragm thus reducing the amount of light hitting the image sensor, but also increasing the *DOF* (depth of field) in the final image. Reducing the shutter speed affects how *motion* is captured, in that this can cause the background or subject to become blurry. However, reducing shutter speed (keeping the shutter open longer) also increases the amount of light hitting the image sensor, so everything is brighter. Increasing the ISO, allows for shooting in lower light situations, but you increase the amount of digital *noise* inherent in the photo.

*It is impossible to make an independent change in one of the elements and not obtain an opposite effect in how the other elements affect the image, and ultimately change the EV.

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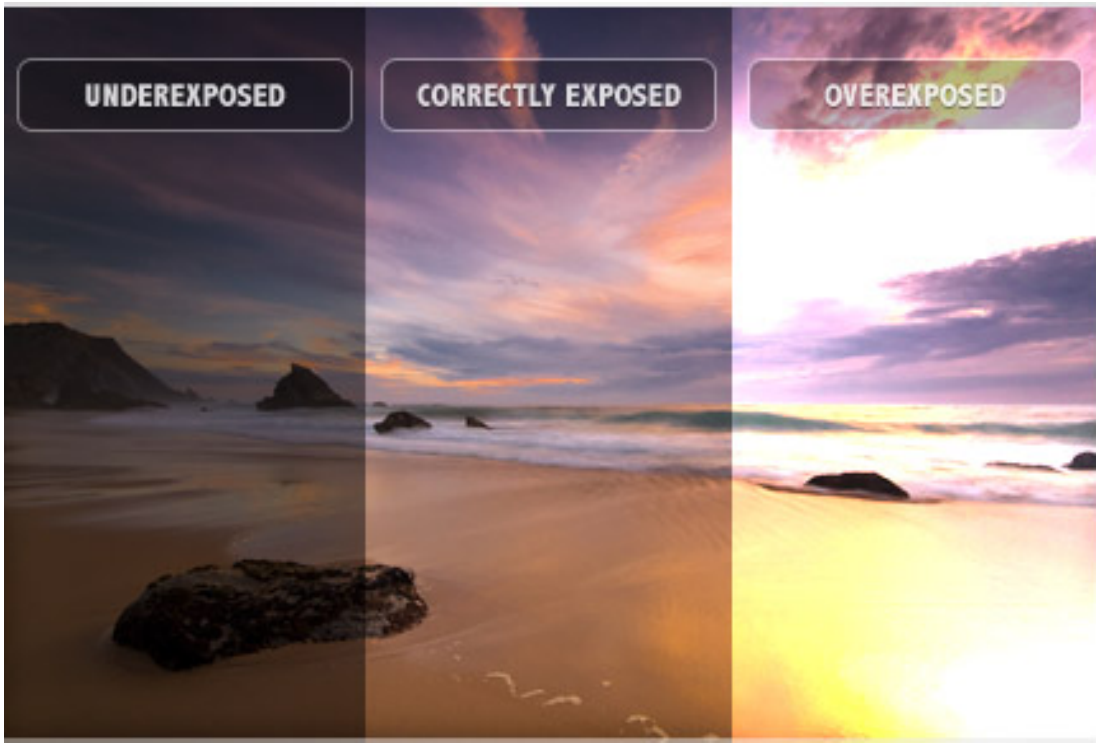
Exposure

A more technical approach recognizes that a photographic sensor (or film) has a physically limited useful exposure range sometimes called its dynamic range. If, for any part of the photograph, the actual exposure is outside this range, the sensor cannot record it accurately.

In a very simple model, for example, out-of-range values would be recorded as "black" (underexposed) or "white" (overexposed) rather than the precisely graduated shades of color and tone required to describe "detail". Therefore, the purpose of exposure adjustment (and/or lighting adjustment) is to control the physical amount of light from the subject that is allowed to fall on the sensor or film, so that 'significant' areas of shadow and highlight detail do not exceed the useful exposure range. This ensures that no 'significant' information is lost during capture.



http://www.exposureguide.com

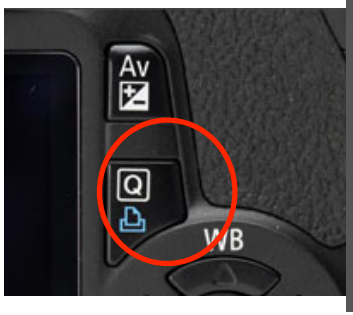
How to use a DSLR

The basics

Exposure:

Point the camera at what you want to shoot and depress the shutter ½ way.
Press the Q button and look at the light meter and notice if the indicator is at the 0 mark.
If the indicator is to the left of the 0- your image will be underexposed- (there is not enough light). If it is to the right of the 0- your image will be overexposed- (there is too much light). Adjust the Aperture and shutter speed until the indicator is at the 0 mark and there is just the right amount of light hitting the sensor to properly expose your image.

*You will also see a green light meter when you look through the viewfinder



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How to use a DSLR

The basics

Camera settings display (Quick Control Screen)

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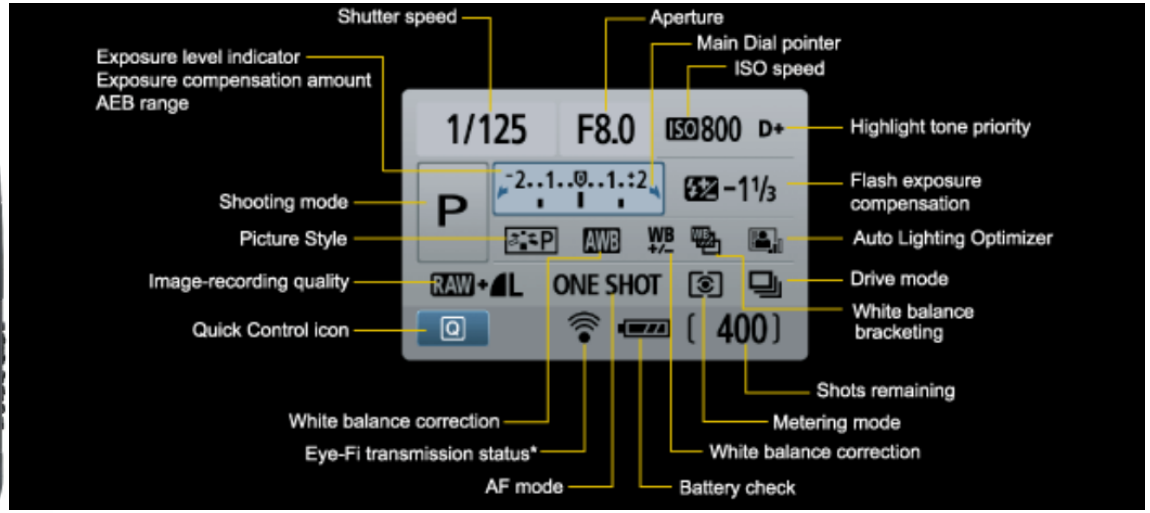

www.dpreview.com

Press the 'Q' button to access the interactive 'Quick Control Screen' – which gives you access to virtually all current settings, including image quality, ISO, Aperture, & Shutter Speed – you can check that your settings are as you like them OR dive in and change things directly right from this screen.

How to use a DSLR

The basics

ISO

Think of it like film speed

ISO is actually an acronym, which stands for ***I**nternational **S**tandards **O**rganization*. The ISO rating, which ranges in value from 25 to 12,800 indicates the specific light sensitivity. The lower the ISO rating, the less sensitive the image sensor is and therefore the smoother the image, because there is less digital noise in the image. The higher the ISO rating (more sensitive) the stronger the image sensor has to work to establish an effective image, which thereby produces more digital noise (those multi-colored speckles in the shadows and in the midtones).

So what is digital noise? It is any light signal that does not originate from the subject, and therefore creates random color in an image. The digital camera engineers have designed the image sensor to perform best at the lowest ISO (just like with film). On most digital cameras this is ISO 100, although some high end DSLRs have a mode that brings the ISO down to 50 or even 25.

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Try to keep the ISO as low as possible for a better quality image!

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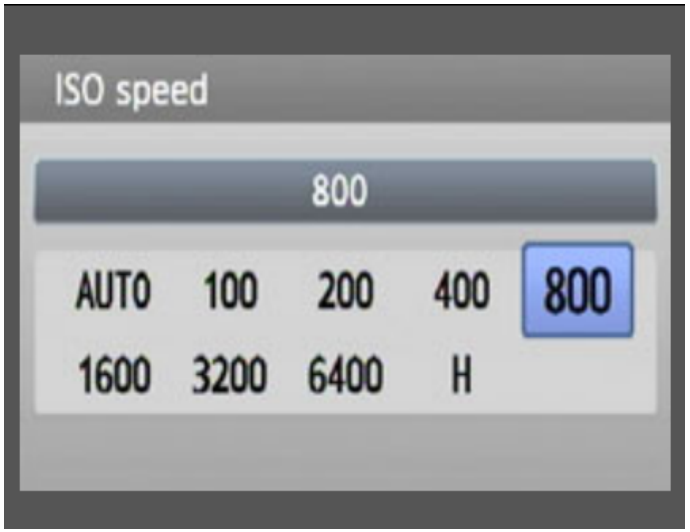


ISO Speed Guide

ISO Speed	Shooting Situation (No flash)	Flash Range
100 - 400	Sunny outdoors	The higher the ISO speed, the farther the flash range will be (p.64).
400 - 1600	Overcast skies or evening time	
1600 - 6400, H	Dark indoors or night	

How to use a DSLR

The basics

Aperture:

Aperture refers to the size of the opening in the lens that determines the amount of light falling onto the film or sensor.

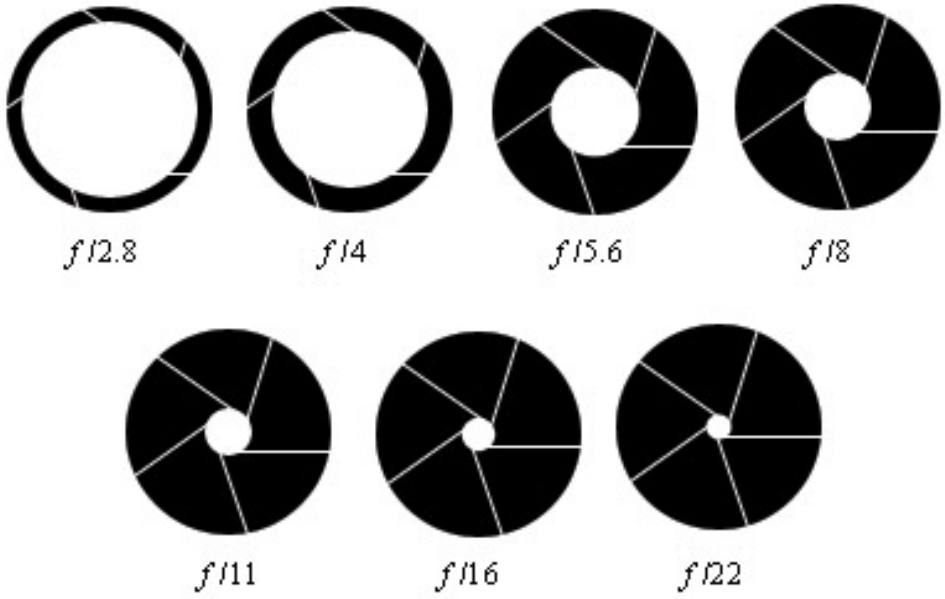
The size of the opening is controlled by an adjustable diaphragm of overlapping blades similar to the pupils of our eyes.

Aperture affects both exposure and depth of field.

A larger aperture means more light gets through. A smaller aperture means less light gets through.

Aperture is measured in f-stops.

Larger f-stop = more light & less depth of field



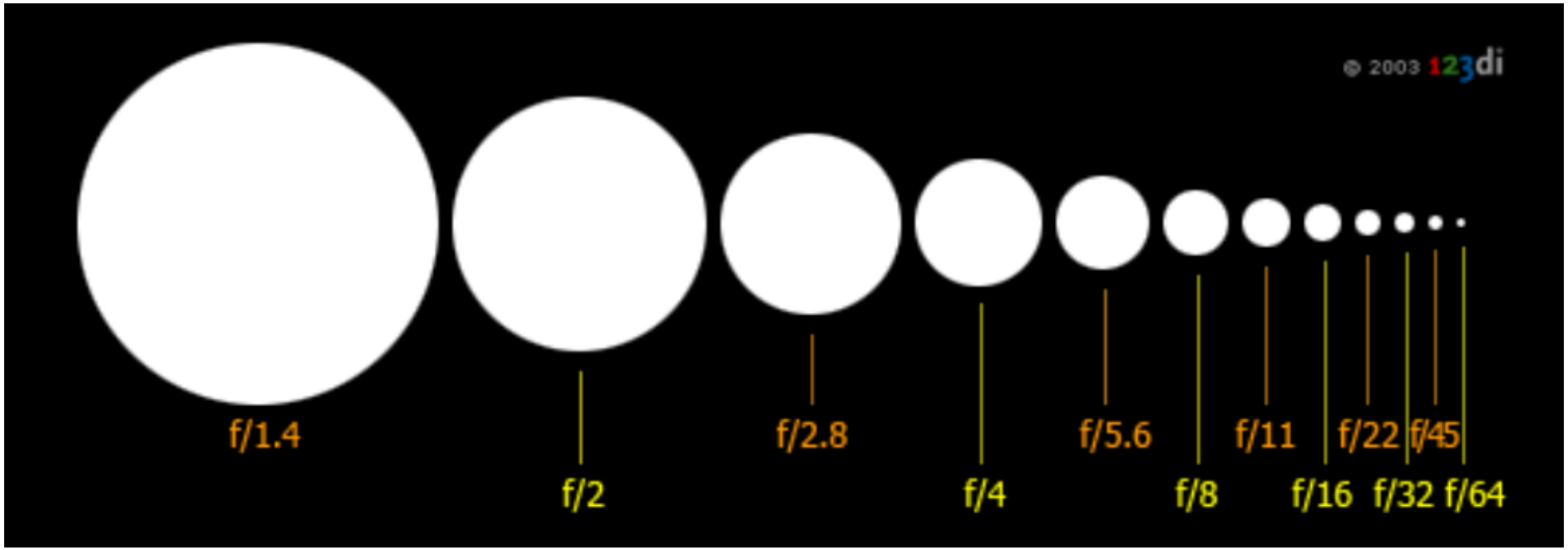
Smaller f-stop = less light & more depth of field

http://www.geekinspired.com

How to use a DSLR

The basics

Just like successive shutterspeeds, successive apertures halve the amount of incoming light. To achieve this, the diaphragm reduces the aperture diameter by a factor 1.4 (square root of 2) so that the aperture surface is halved each successive step as shown on this diagram.



Because f-numbers are fractions of the focal length, "higher" f-numbers represent smaller apertures.

How to use a DSLR

The basics

Because of basic optical principles, the absolute aperture sizes and diameters depend on the focal length. For instance, a 25mm aperture diameter on a 100mm lens has the same effect as a 50mm aperture diameter on a 200mm lens. If you divide the aperture diameter by the focal length, you will arrive at 1/**4** in both cases, independent of the focal length. Expressing apertures as fractions of the focal length is more practical for photographers than using absolute aperture sizes. These "relative apertures" are called f-numbers or f-stops. On the lens barrel, the above 1/**4** is written as f/**4** or F**4** or 1:**4**.

We just learned that the next aperture will have a diameter which is **1.4** times smaller, so the f-stop after f/**4** will be f/**4** x 1/**1.4** or f/**5.6**. "Stopping down" the lens from f/**4** to f/**5.6** will halve the amount of incoming light, regardless of the focal length. You now understand the meaning of the f/numbers found on lenses.

http://www.dpreview.com

How to use a DSLR

The basics

Aperture:

The aperture setting also affects depth of field, the amount of the photograph that is in focus. Depth of field (DOF) is a term which refers to the areas of the photograph both in front and behind the main focus point which remain "sharp" (in focus).

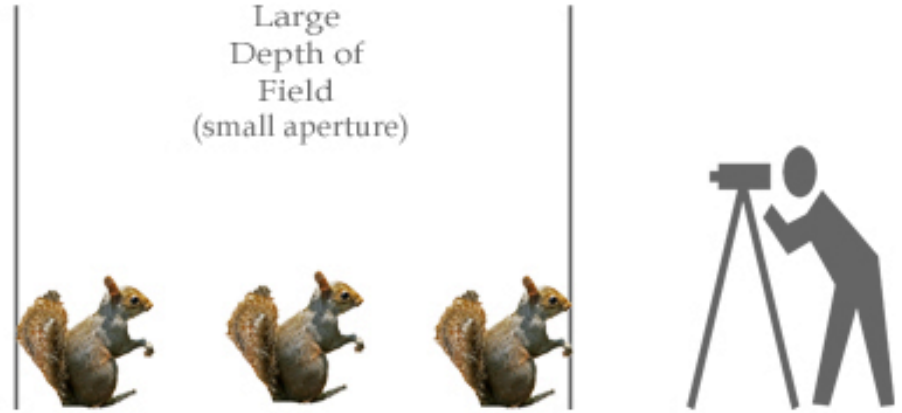
http://www.fortheloveofbeads.com

A larger aperature (smaller f-number, e.g. f/2.8) has a shallow depth of field. Anything behind or in front of the main focus point will appear blurred. A smaller aperture (larger f-number, e.g. f/11) has a greater depth of field. Objects within a certain range behind or in front of the main focus point will also appear sharp.

How to use a DSLR

The basics

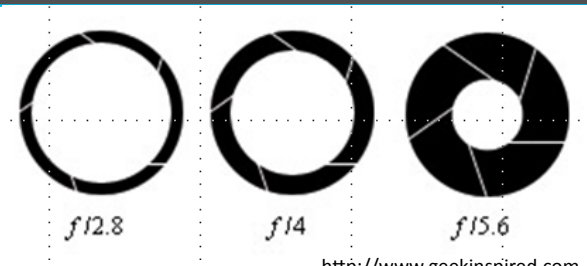
Aperture:



How to use a DSLR

The basics

Aperture:



http://www.geekinspired.com

A larger aperture results in a shallow depth of field, which you normally use for close-up shots and portraits.

www.wikipedia.com

http://www.digital-photography-school.com

www.sandraphoto.com

http://www.secondpicture.com

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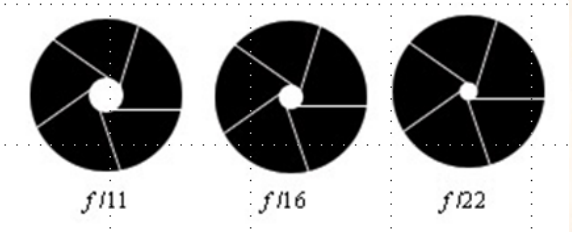
The basics

Aperture:

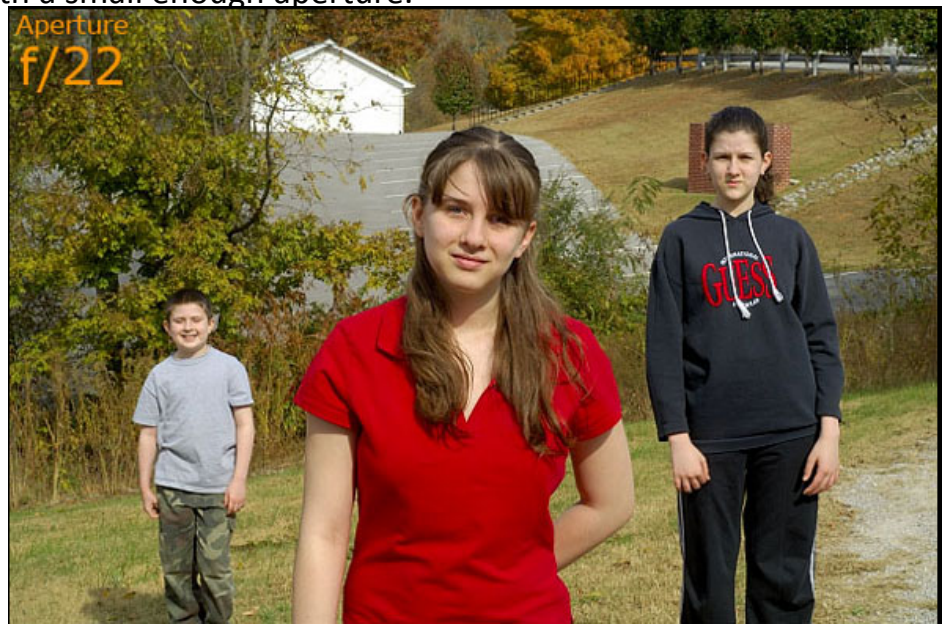
Smaller apertures (higher f-stops) give longer depth of field. A person in the foreground and a person in the background could all be in focus with a small enough aperture.



http://www.geekinspired.com

www.wikipedia.com

http://files.renegadebs.com



http://www.nikonians.org

www.digitalphotographyschool.com

How to use a DSLR

The basics

Aperture:

To set the aperture press the Q button then press the AV button and turn the main dial to the desired aperture.

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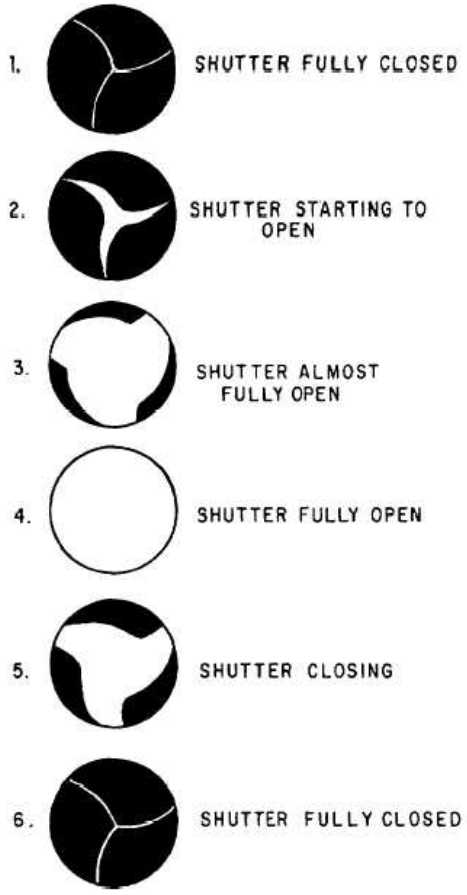
How to use a DSLR

The basics

Shutter Speed

Shutter speed is the amount of time the shutter remains open to allow light through it. A fast shutter speed is anything faster than 1/60 of a second, an extremely fast shutter speed is 1/2000 of a second. Anything slower than 1/60 of a second is considered slow, an extremely slow shutter speed can range from seconds to hours. One-sixtieth of a second is about as slow a shutter speed as you can use when taking a hand-held shot, and not get any blur. Some photographers force their camera shutters to stay open for much longer to create various special effects. Leaving a camera pointed at the night sky with the shutter open for several hours results in a photo of the paths the stars seem to take across the sky as the Earth rotates.

Practice and experience are the best ways to figure out which combinations of aperture and shutter speed are best for different kinds of photos. While a slow shutter speed lets in more light, it also makes it very difficult to get a crisp picture. Any movement at all (of either the subject or the camera) will result in blurring. Sometimes you might want this effect, but for a clear photo of a moving object, you need a fast shutter speed (and a tripod or a very steady hand :).



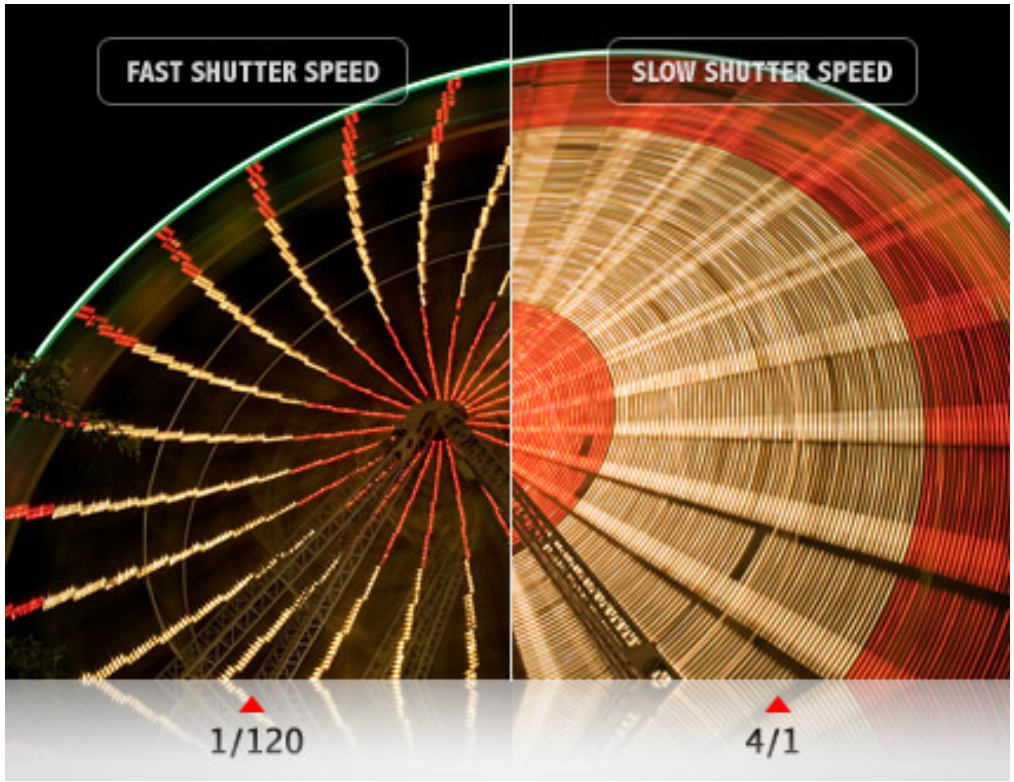
www.tpub.com

How to use a DSLR

The basics

Shutter Speed

Snapping the shutter in a fraction of a second, also gives you control on how motion is recorded. If the shutter speed is faster than the object or background, then the image will be tack sharp. If the shutter speed is slower, then you'll get blurred objects. Think about the rain in a rainstorm, how fast is that water falling? Well, at 1/30th the raindrops are streaks of undistinguishable white. But at 1/250th, the raindrops hover in mid air and you can see the full swell of each water drop.



http://www.exposureguide.com

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The basics

Fast

Shutter Speed

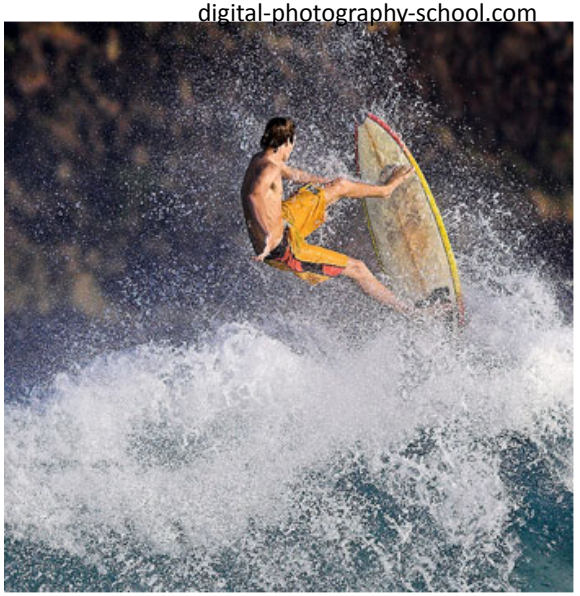
1/60 sec.-1/2000 sec

www.waildlives.blogspot.com

thomashalldsdn144.blogspot.com

http://www.guidetofilmphotography.com

digital-photography-school.com



e-portfoliompt1483cikdaa.blogspot.com

How to use a DSLR

The basics

Slow

Shutter Speed

1/30 sec.-hours

digiphotomag.com

Photo by: Bjorn Grigholm

http://www.audiesumaray.com

http://www.digital-photography-school.com

e-portfoliompt1483cikdaa.blogspot.com

How to use a DSLR

The basics

Shutter Speed

As a standard to get a normal looking shot choose a shutter speed that is ~2x your frame rate.

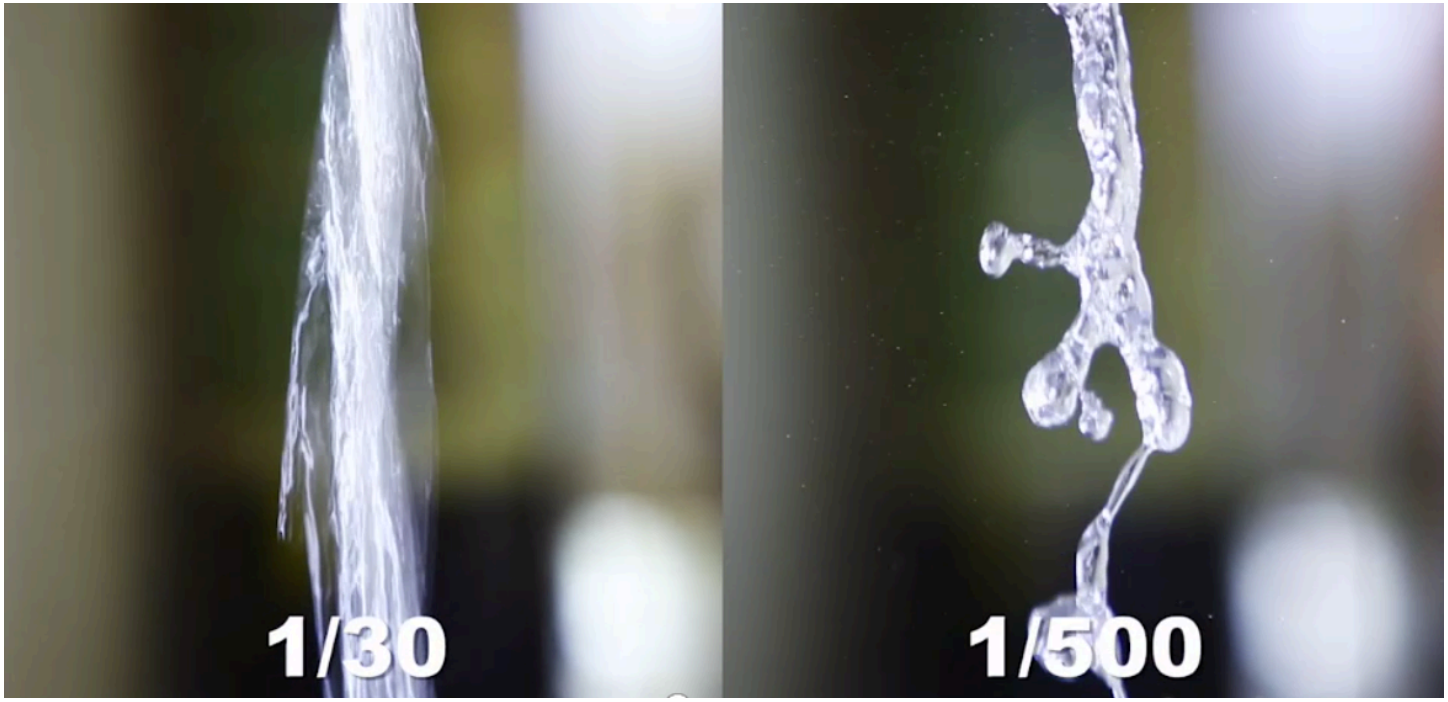
But that is not to say that you can not try super fast or slower shutter speeds for visual effect!

How to use a DSLR

The basics

Shutter Speed

But that is not to say that you can not try super fast or slower shutter speeds for visual effect!



www.lynda.com

How to use a DSLR

The basics

Shutter Speed:

To set the Shutter Speed press the Q button then turn the main dial to the desired shutter speed.

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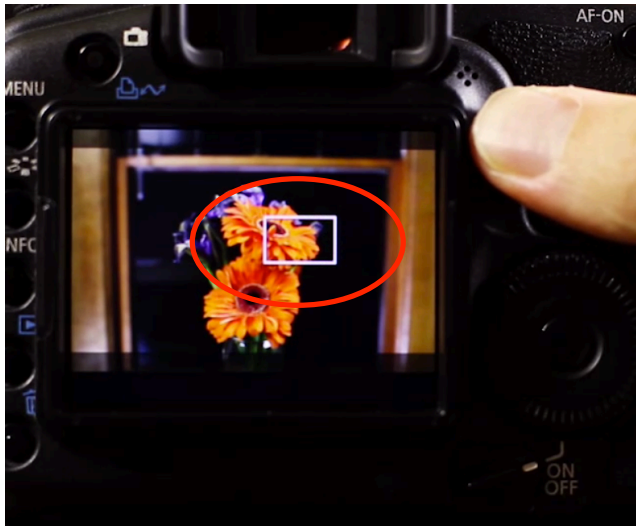
How to use a DSLR

The basics

Focusing

Using Live View
You will see a
white focus square

www.dpreview.com



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Focusing

Move the square using the arrow controlls to the desired place you want to focus

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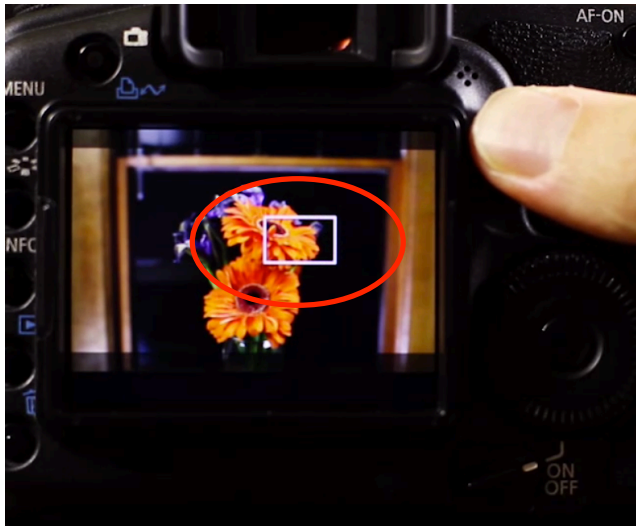

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How to use a DSLR

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Focusing

Zoom in using the zoom buttons to get a clearer view.

Zoom out to see the whole image again.

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How to use a DSLR

The basics

Toggle the switch on the lens barrel to "MF" Manual Focus

http://www.kenrockwell.com/canon/lenses/images/50mm-f12/product/DSC_6426-rebel.jpg

If using a Zoom Lens make sure to turn the Focus ring and not the Zoom ring.
(The focus ring is the one furthest from the camera body and closest to the exposed glass)

Also if the toggle is not turned to MF you could damage the lens- never force it!
If you hear a mechanical sound – double check that you are set to MF.

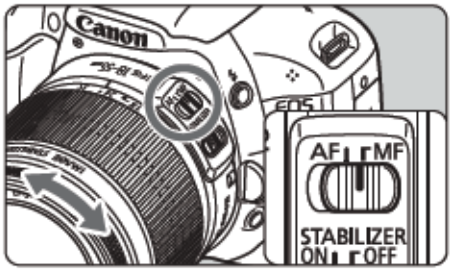
How to use a DSLR

The basics

You will always want to use Manual Focus when shooting video- Automatic Focus moves the lens and makes noise which will negatively effect your video and audio capture!

Focusing Manually

You can magnify the image and focus precisely manually.



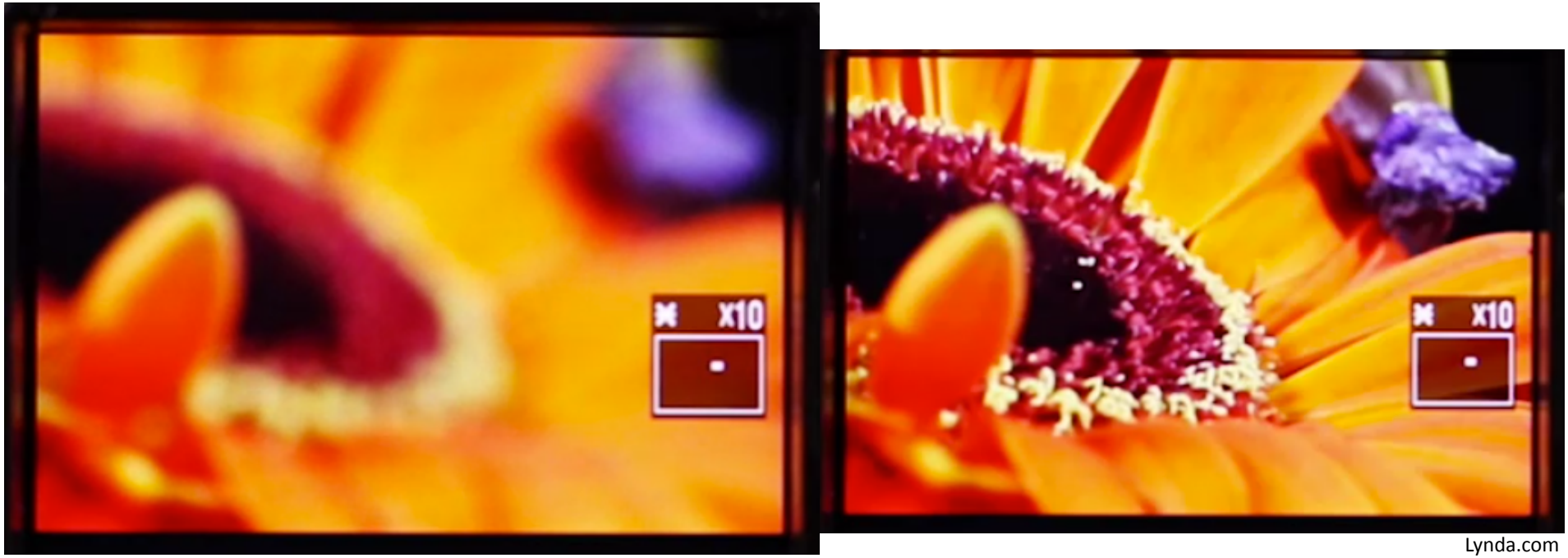
1 Set the lens focus mode switch to <MF>.

- Turn the lens focusing ring to focus roughly.

Canon 550D manual

How to use a DSLR

The basics



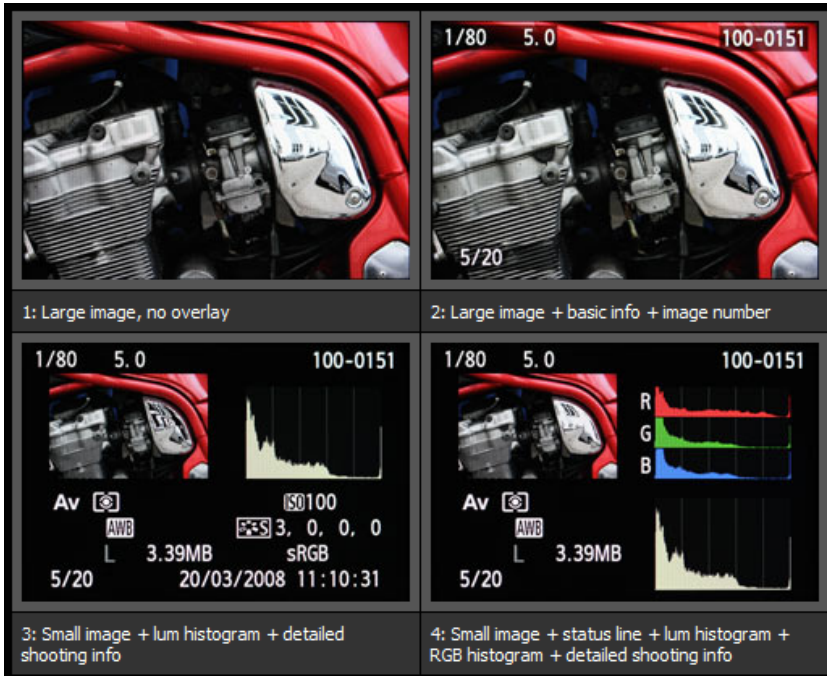
Lynda.com

Turn the Focus ring until you obtain focus.
One popular effect is to start out of focus and pull focus for your shot while recording.

How to use a DSLR

The basics

Pressing the DISP button while in Play view gives you the option of four display modes, you can also optionally enable 'Highlight alert' (blinking highlights) and / or 'AF point display' (the last two in the table below).



www.dpreview.com

Pressing the DISP button while in Live View also toggles between the four available display modes, each with differing levels of overlaid information.

www.dpreview.com

How to use a DSLR

The basics

Experiment with Different
Camera Shots
Camera Angles
Camera Movements
Pulling Focus
Zooming

White Balances
Compositions

Using and Changing the
Available Lighting

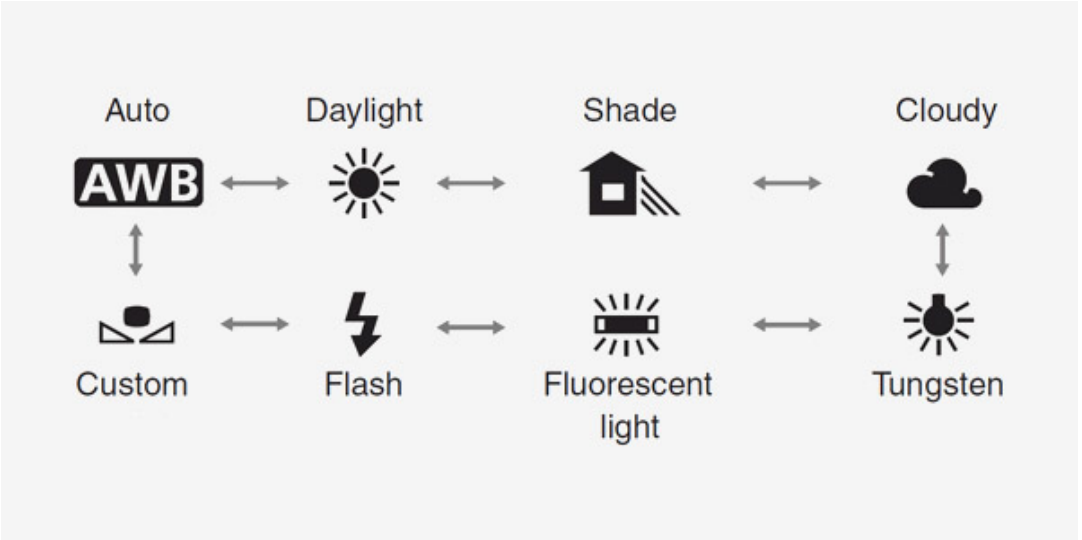
http://www.youtube.com/watch?v=d1japIhKU9I

How to use a DSLR

The basics

Remember to set the White Balance
by Pressing the WB button
And choosing the White Balance that best fits your conditions
*You do not want to choose AWB because if the lighting conditions change during shooting you could experience a color shift in your footage.

www.dpreview.com



http://lavidaleica.com/sites/default/files/white_balance_0.jpg

Working with Audio

The Basics

Why use a sound recorder?
My DSLR has a built in microphone?

http://ecx.images-amazon.com/images/I/51hLoiEAYWL._SY300_.jpg

Sound Recording with a DSLR is compromised-

It is not a professional grade audio

You have less control than with an audio recorder

The microphone is on the front of the camera-it's positioning is directly dependent on where the camera angle is (which isn't always the best solution)!

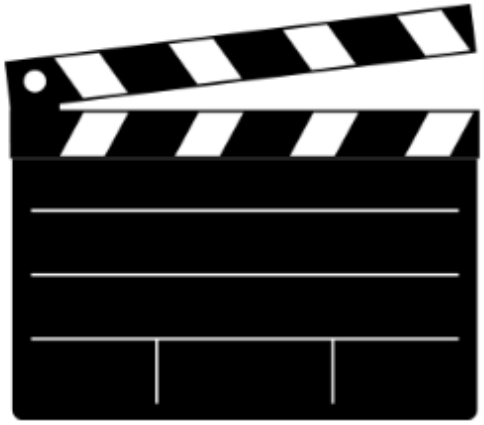
If you aren't getting the sound quality you need with the dslr then use a sound recorder!

How to use a Sound Recorder

The Basics

If you are using the audio with video you need to sync the sound so that you can line it up to the video in post.
This is one of the main uses of the slate-
You can use a traditional one or download an app for your iPad (make sure to sync the time settings to your camera!)
If you don't have one- you can also achieve the same effect by clapping your hands.

http://digitalmedia.oreilly.com



http://www.clker.com/

http://smallbiztrends.com

www.lynda.com

How to use a Sound Recorder

The Basics

Always Record 1 minute of Ambient Sound

When you are recording dialogue- for example an interview- there are ambient noises as well as a basic level of ambient sound in the room that you might not be aware of .
This is almost impossible to eliminate when recording.

The work around is to record 1 minute of ambient sound of the room which you can use later on to splice in.

That way there is no dead silence (which is very unnatural and can be very irritating) In post production the ambient sound can be cut and paste and it will make the editing more natural.

How to use a DSLR

The basics

Press the Play button to review the videos you have taken.
Use the arrow and Enter/Set keys for Playback

Delete the videos you don't want or need.
Be careful- you can not get them back!

www.usa.canon.com

Play

Enters play mode which displays the last image taken or the last image on the card.

Erase (during record review)

Press the Erase button during record review to display a Cancel / Erase option, selecting OK removes the displayed image before it is finalized to the card.

www.dpreview.com

How to use a DSLR

The basics

www.dpreview.com

www.pic2fly.com

Consider using a tripod when shooting movies: It will help with stabilization and make your shots smoother. Handheld shots are also interesting to try!

How to use a DSLR

The basics

www.usa.canon.com

Attach the camera to your computer with the provided USB cord to download your movies.

How to use a DSLR

The basics

*Before you return the camera, make sure you format the card!

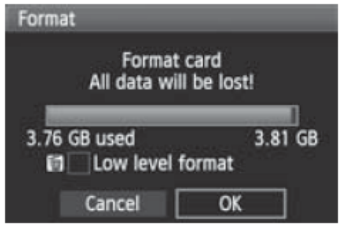
MENU Formatting the Card

If the card is new or was previously formatted by another camera or computer, format the card with the camera.

When the card is formatted, all images and data in the card will be erased. Even protected images will be erased, so make sure there is nothing you need to keep. If necessary, transfer the images to a computer, etc., before formatting the card.

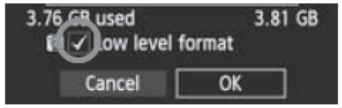
1 Select [Format].

- Under the [ ] tab, select **[Format]**, then press <SET>.



2 Format the card.

- Select **[OK]**, then press <SET>.
- ▶ The card will be formatted.
- ▶ When the formatting is completed, the menu will reappear.



- For low-level formatting, press the <🗑> button to checkmark **[Low level format]** with <√>, then select **[OK]**.

Canon 550D manual

How to use a DSLR

The basics

And that's just the begining!

For more information
Consult the manual that
Comes with the rental
Camera or you can
download
It here:

http://gdlp01.c-wss.com/gds/9/0300003169/01/eosrt2i-eos550d-im-en.pdf

Canon 550D manual

Where to Rent Equipment

On Campus

1. New Media Department

Location: Stewart Hall/ IMRC Center
Phone: 207-581-4390
FirstClass: Aaron Boothroyd and Neil Shelley
E-mail: Aaron.Boothroid@umit.maine.edu
Neil.Shelley@umit.maine.edu
Web: http://www.imrccenter.com/services-and-equipment/equipment-list/

Rental Hours are M-F 12:00pm-3:00pm.
No weekends. No Holidays.

Equipment can be rented in 24 hr cycles or over a weekend **and**
*you must leave a $20 deposit that you will get back when you return the equipment.

Where to Rent Equipment

On Campus

2. <u>CML (Collaborative Media Lab)</u>

Location: 1st Floor, Fogler Library
Phone: 207-581-4641
First Class Conference: Information Technologies/Collaborative Media Lab
E-mail: CML@umit .maine.edu
Web: http://www.umaine.edu/it/helpcenter/cml/

M-Th 8:00 a.m. to 12:00am
F 8:00 a.m. to 10:00 p.m.
Sat 10:00 a.m. to 6:00 p.m.
Sun 10:00 a.m. to12:00am

Equipment can be rented in 24 hr cycles **and**
*you must leave a $20 deposit that you will get back when you return the equipment.

Where to Rent Equipment

On Campus

3. <u>AV Services</u>

Location: 28 Shibles Hall (Basement)
Phone #: 581-2500
FirstClass Conference: AV Services
Web: http://www.umaine.edu/it/divisions/av/

Call ahead to check on availability
and for rules on renting equipment.

Sources

Used In this Presentation

http://electronics.howstuffworks.com/cameras-photography/digital/digital-photography.htm
www. http://usa.canon.com
Manual for canon T2i/550D
www.dpreview.com
http://www.exposureguide.com
www.digitalphotographyschool.com
www.wikipedia.org
DSLR Video Tips with Richard Harrington and Robbie Carman (www.lynda.com)
Up and Running with DSLR Filmmaking with Chad Perkins (www.lynda.com)

References:

http://www.dpreview.com/learn/glossary.asp

Inspiration for DSLR video:

http://vimeo.com/groups/beyondthestill