Name _____

Ask yourself:
What is
more important
to me,
showing motion
or showing DOF

if motion is important,
then you will change
the shutter speed
(put camera on M or TV/S)

use a fast shutter
to freeze motion

If on M, then pick aperture
to get correct exposure

If on TV/S, then the camera
will pick the aperture
to get correct exposure

use a slow shutter
to blur motion

If on M, then pick aperture
to get correct exposure

If on TV/S, then the camera
will pick the aperture
to get correct exposure

if DOF is important,
then you will change
the aperture
(put camera on M or Av/A)

use a bigger aperture
for shallow DOF

If on M, then pick shutter speed
to get correct exposure

If on AV/A, then the camera
will pick the shutter speed
to get correct exposure

use a smaller aperture
for greater DOF

If on M, then pick shutter speed
to get correct exposure

If on AV/A, then the camera
will pick the shutter speed
to get correct exposure

Manual Mode
Where Do I Start?

1. Set your ISO
(sensor speed)

Set your ISO to:

100--> Sunny
200-->Partly Sunny
400-->Getting Dark
800-->Sports/Action
1600--> Poor lighting
3200--> Dark (grain)t

2. Set your Aperture
(f-stop)

Set your f-stop to

1.2-2.8--> Very Blurry Background
(Shallow Depth Of Field)
2.8-5.6--> Kind of Blurry Background
5.6-32--> The Higher the Number,
the more your background
will be in focus

Low numbers (1.2-4.0) are perfect for portraits.
High Numbers are great for landscapes.

3. Set Shutter Speed
(Fraction of time)

Use a tripod if you use
Slower Shutter Speeds
(1 second to 1/15th of a second)
....
Use slower shutter speeds to
blur action.
....
Use Faster Shutter Speeds
to Freeze action
***Rule of Thumb: Keep Shutter
speed at a min. of 125 for sharp
photos

4. Watch Your Meter

Keep your meter at 0
for proper exposure!!
....
Put at +1 for brighter photos
....
Put at -1 for darker photos

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MAKE SENSE OF SHOOTING MODES

The mode you choose affects the amount of control you have over camera settings

Auto mode
If you're a complete novice, this mode is ideal because the camera takes care of all the settings automatically.

Auto Flash Off mode
The same as Auto, but for museums, theatres or indoor sports venues where using a flash might get you thrown out!

Portrait mode
The camera softens skin tones and uses a wide aperture to throw the background out of focus.

Landscape mode
Designed for vivid landscape shots taken in daylight. The built-in flash is switched off and you might need a tripod in poor light.

Child mode
In this mode, the camera makes backgrounds and clothing colourful but keeps skin tones soft and natural looking.

Sports mode
The flash is switched off and the camera uses faster shutter speeds to help freeze fast-moving subjects.

Close-up mode
This favours a smaller aperture to improve depth of field. Consider using a tripod when there's a risk of camera-shake.

Night Portrait mode
The flash fires to light your subject, but the camera uses a slower shutter speed to capture the background lighting too.

Manual mode
This is designed for experts. You choose the shutter speed and aperture yourself, though the camera still suggests settings.

Aperture Priority
Use this if you want to choose the aperture yourself. The camera will set the shutter speed automatically for correct exposure.

Shutter Priority
Use this if you want to choose the shutter speed yourself. The camera will set the aperture automatically so that the exposure is correct.

Program AE mode
Ideal for general use, or when there's little time to think. The camera sets the shutter speed and aperture but you get to control other settings.

GUIDE
A special feature on the D3100 that shows you what to do as you're taking pictures. It's a great way for beginners to learn about photography.

Nikon

Canon

Full Auto
The idiot 'green square' mode – sets *all* the camera settings for you automatically.

Creative Auto
Only found on most recent EOS SLRs. Lets you tweak aperture and exposure compensation in a jargon-free way.

Metered manual
You set both aperture and shutter speed, but the camera still gives a meter reading (see p97).

Aperture priority
You set the aperture, and the camera then sets the shutter speed for you.

Shutter priority (time value)
You set the shutter speed, and the camera then sets the aperture for you.

Program shift
The camera pairs aperture and shutter speed, but you can tweak them – see below.

Movie mode
Only found on the mode dial of some newer EOS models that feature HD video recording.

Portrait mode
Sets a wide aperture to blur backgrounds, but overrides other settings, see p96.

Landscape mode
Sets aperture to maximise depth of field, but overrides other settings, see p96.

Close-up mode
Sets a wide aperture to blur backgrounds, but overrides other settings, see p96.

Sports mode
Sets a fast shutter speed to freeze action, but controls other settings too, see p96.

Night portrait mode
Combines flash with a slow shutter speed, but fixes other settings, see p96.

Flash off mode
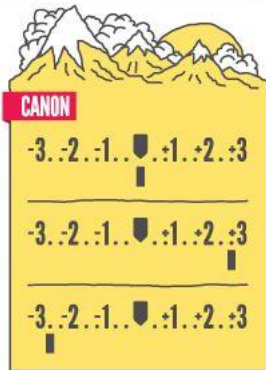Fully automatic mode that ensures flash does not fire – see full details on p96.

Automatic depth of field
Tweaks aperture and focus to ensure key parts of picture are sharp. See p96.
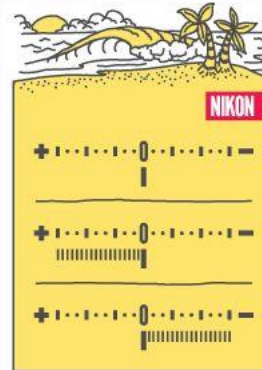
TOTALLY RAD! QUICK REFERENCE GUIDE
MANUAL PHOTOGRAPHY

EXPOSURE

CANON

-3..-2..-1.. ▮ ..+1..+2..+3 ← JUST RIGHT →

-3..-2..-1.. ▮ ..+1..+2..+3 ← TOO BRIGHT →

-3..-2..-1.. ▮ ..+1..+2..+3 ← TOO DARK →

NIKON

APERTURE

← SHALLOW ┅┅ DEPTH OF FIELD ┅┅ DEEP →

| F/1.4 | F/2.0 | F/2.8 | F/4.0 | F/8.0 | F/16 | F/22 |

MORE LIGHT - BLURRY BACKGROUND ← → **LESS LIGHT - SHARPER FOCUS**

SHUTTER SPEEDS

BULB · 30" · 15" · 8" · 4" · 2" · 1" · 1/2 · 1/4 · 1/8 · 1/15 · 1/30 · 1/60 · 1/125 · 1/250 · 1/500 · 1/1000

MORE LIGHT › **TRIPOD HIGHLY RECOMMENDED** › **BLURRED MOTION** › **HANDHELD - OK** › **LESS LIGHT**

ISO - FILM SPEED

LESS NOISEY · KINDA NOISEY · VERY NOISY · EXTREMELY NOISY

← 100 ▬ 200 ▬ 400 ▬ 800 ▬ 1600 ▬ 3200 ▬ 6400 →

LOW - BLURRED MOTION ‹‹‹ ☀ **LIGHT SENSITIVITY** ☾ ››› **SHARP ACTION - HIGH**

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DARKER

SHUTTER	APERTURE	ISO
LESS MOTION BLUR	**BACKGROUND SHARP**	**LESS GRAINY**
1/4000	f22	100
1/2000	f16	200
1/1000		
1/500	f11	400
1/250	f8	500
1/125		
1/60	f5.6	640
1/30	f4	800
1/15		
1/8	f2.8	1000
1/4	f2	1250
1/2	f1.4	1600
1		
2	f1	hl
MORE MOTION BLUR	**BACKGROUND BLURRY**	**MORE GRAINY**

LIGHTER

the Tripod diaries

SHUTTER SPEED

SHOTROCKERS

How fast your camera's shutter opens and closes to expose the sensor. The longer the shutter is open the more light is exposed to the sensor and visa-versa.

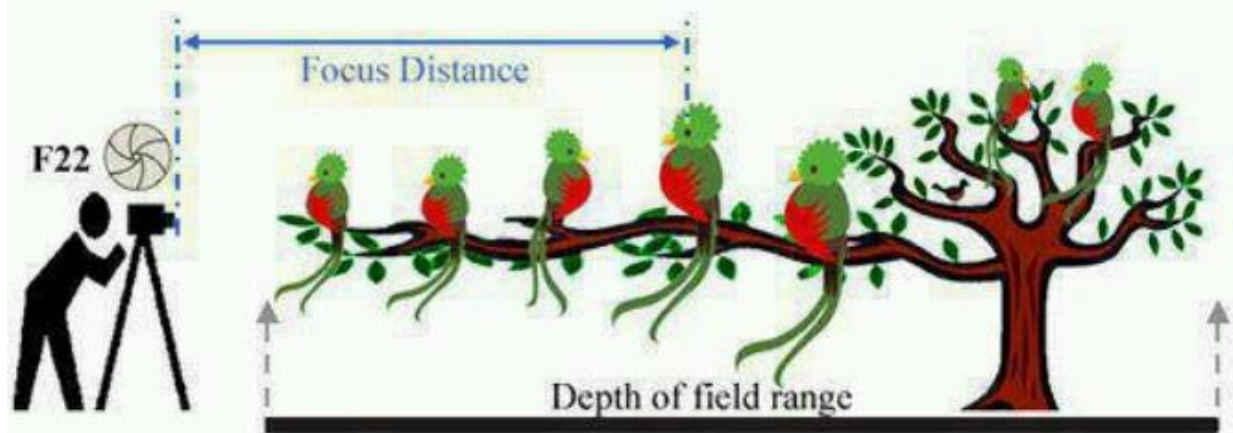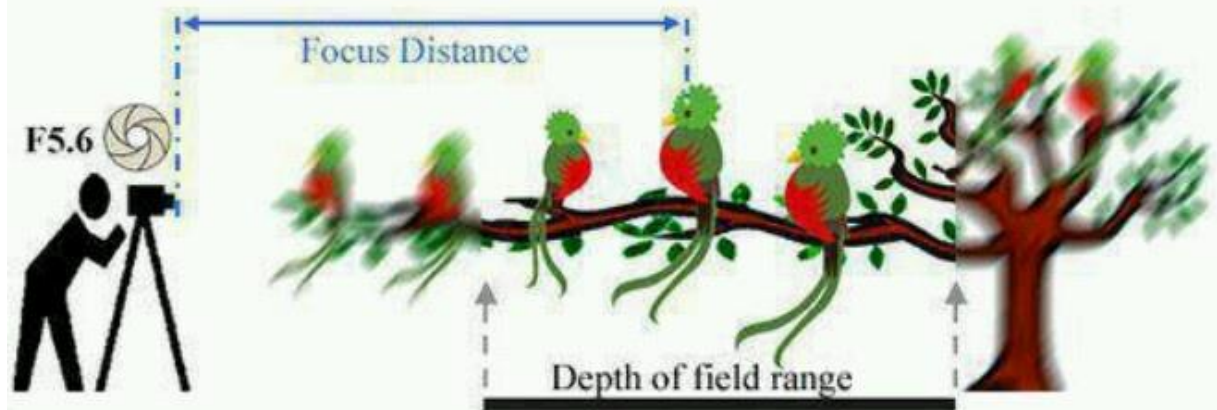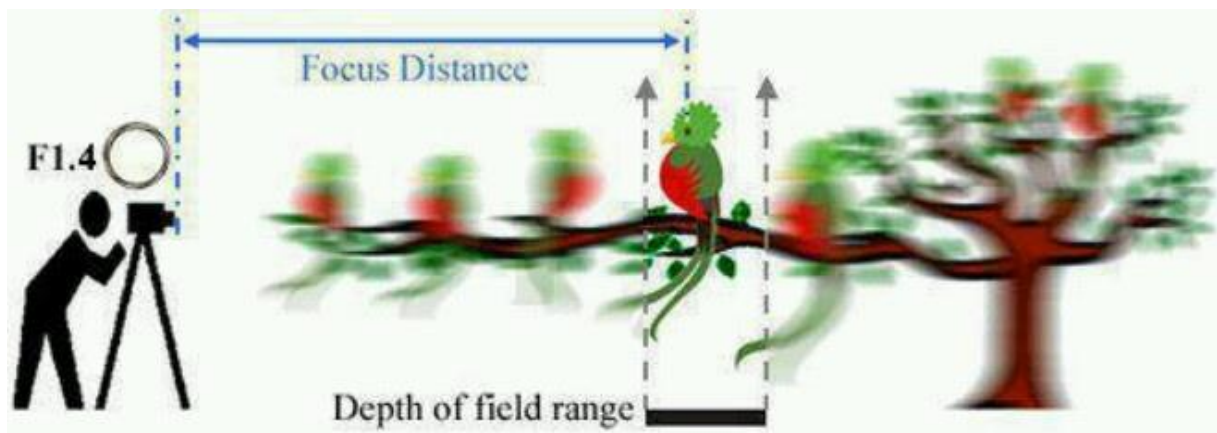| Shutter Speed	Typically Used For
1/4000 sec	freezing super fast objects
1/2000 sec	freezing cars driving fast
1/1000 sec	sports photography
1/500 sec	slow moving sports (soccer, basketball, etc)
1/250 sec	photographing kids
1/125 sec	standard photos
1/60 sec	slowest handheld shot
1/30 sec	when panning sports/cars
1/15 sec	blur objects in motion
1/8 sec	blur fast moving water
1/4 sec	panning people walking
1/2 sec	blur slow moving water
1 sec or slower	very long exposure

focus

f/4

blur   blur

Aperture is too big.
Parts of the subject are out of focus.

f/8

blur   blur

Aperture is smaller.
Subject is in focus and background is out of focus.

f/22

blur

Aperture is too small.
Everything is in focus.

F1.4

Focus Distance

Depth of field range

F5.6

Focus Distance

Depth of field range
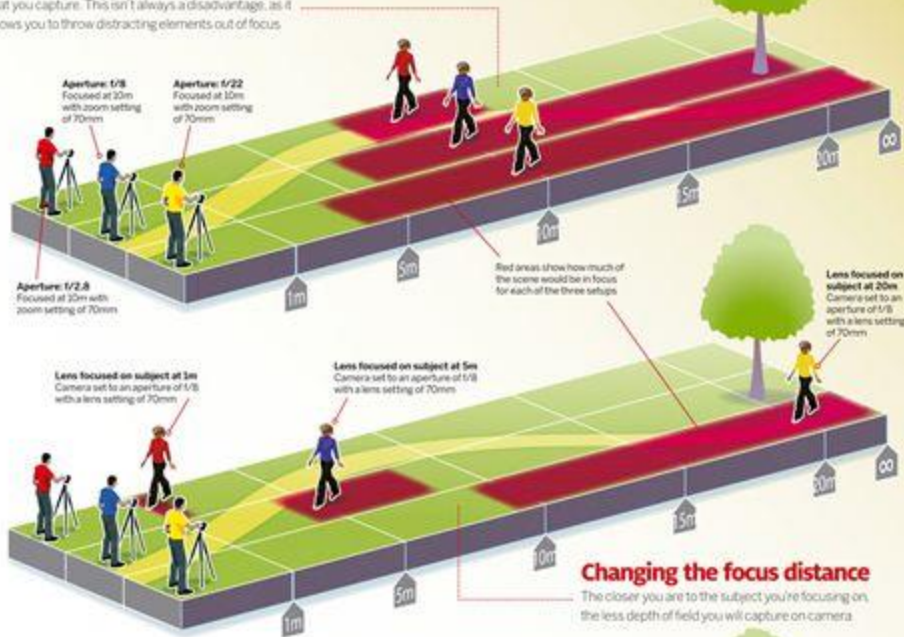
F22

Focus Distance

Depth of field range

Three ways to affect depth of field

How aperture, focus distance and focal length affect what will appear sharp

Changing the aperture

The wider the aperture you use, the less depth of field that you capture. This isn't always a disadvantage, as it allows you to throw distracting elements out of focus
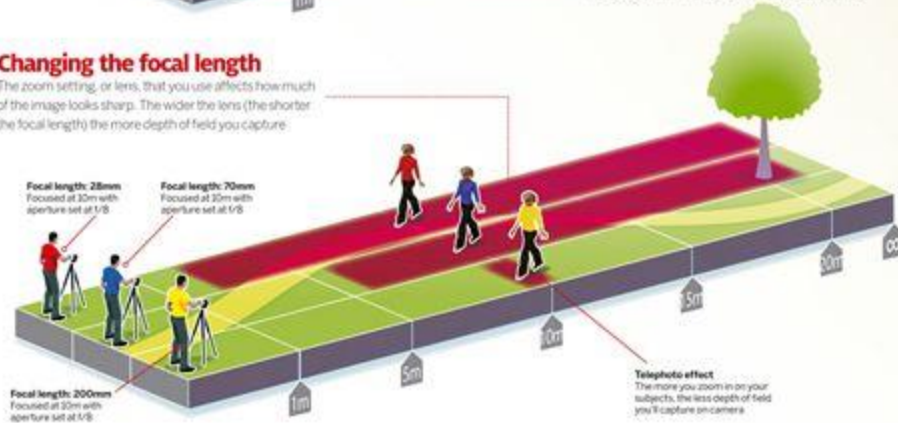
Aperture: f/8
Focused at 10m with zoom setting of 70mm

Aperture: f/22
Focused at 10m with zoom setting of 70mm

Aperture: f/2.8
Focused at 10m with zoom setting of 70mm

Red areas show how much of the scene would be in focus for each of the three setups

Lens focused on subject at 20m
Camera set to an aperture of f/8 with a lens setting of 70mm

Lens focused on subject at 1m
Camera set to an aperture of f/8 with a lens setting of 70mm

Lens focused on subject at 5m
Camera set to an aperture of f/8 with a lens setting of 70mm

Changing the focus distance

The closer you are to the subject you're focusing on, the less depth of field you will capture on camera

Changing the focal length

The zoom setting, or lens, that you use affects how much of the image looks sharp. The wider the lens (the shorter the focal length) the more depth of field you capture

Focal length: 28mm
Focused at 10m with aperture set at f/8

Focal length: 70mm
Focused at 10m with aperture set at f/8

Focal length: 200mm
Focused at 10m with aperture set at f/8

Telephoto effect
The more you zoom in on your subjects, the less depth of field you'll capture on camera

ISO

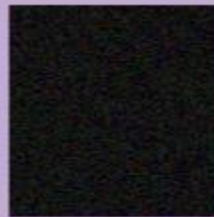|	
100	Full Sun, no shade
200	Lots of sun, could be in partial shade or an overcast day out in the open
200	Inside on a sunny day, directly by a large window
400	In the shade on a sunny day or under a covered area on an overcast day
700	Inside on a sunny or overcast day (near a window)
640-800	Sun is starting to set and less light
800	Inside, quite a distance from a window (sunny outside)
850-1000	Inside, quite a distance from a window (overcast day)
1250	Inside during the evening, light bulbs are the only source of light
1600	Inside a dark room where there is a light source (theatre, school production, etc)

Noise Warning

ISO:

The light sensitivity of either the film or sensor in a camera. They can range from as low as 12 to as high as 12500. With increased ISO there is increased noise or grain in a photo, so for higher quality photos stick to the lowest possible ISO setting. In digital captures, this noise leads to larger file sizes, so you are able to take less photos per memory card. ISO also increases with the length of the exposure, but in film the grain is predetermined by grain existing on the emulsion, the light sensitive coating on the film.

50	*** 100**	**200**	Use these in bright natural light or to allow for slow shutter speeds.
* 400	*** 800**	**1600**	Use these in flashless indoor lighting or in combination with the flash.
3200	**6400**	**12500**	Use these in dark lighting, mainly to avoid camera shake or freeze motion.

*Each ISO shown is in whole stop increments, but one-third stops exist on some cameras.

*An ISO of 100 is the most common lowest setting available on most cameras. It is most useful for landscape photography, brightly lit situations, and long exposures.

*An ISO of 400 is a good no flash indoor lighting setting. it will be just enough to freeze most motion and will help avoid camera shake - especially coupled with a larger aperture.

*An ISO of 800 is ideal for combined use with flash. Higher ISOs also capture more ambient light and increase depth in dark lighting. This is combined with a flash to balance out foreground and back-ground light - particularly with a back-lit subject.

Wide-angle to telephoto

Understand the difference between focal lengths, from 10mm to 400mm

Your lens focal length affects the angle of view you can see through your camera's viewfinder. To really see the difference focal length can make to the angle of view, it's good to compare a sequence of shots of the same subject taken at different focal lengths. See our examples for how much or how little of the scene you can capture in your frame, depending on your effective focal length (EFL).

400mm (EFL: 640mm)

200mm (EFL: 320mm)

125mm (EFL: 200mm)

55mm (EFL: 90mm)

35mm (EFL: 55mm)

11mm (EFL: 18mm)

18mm (EFL: 28mm)

Effective Focal Length (EFL)

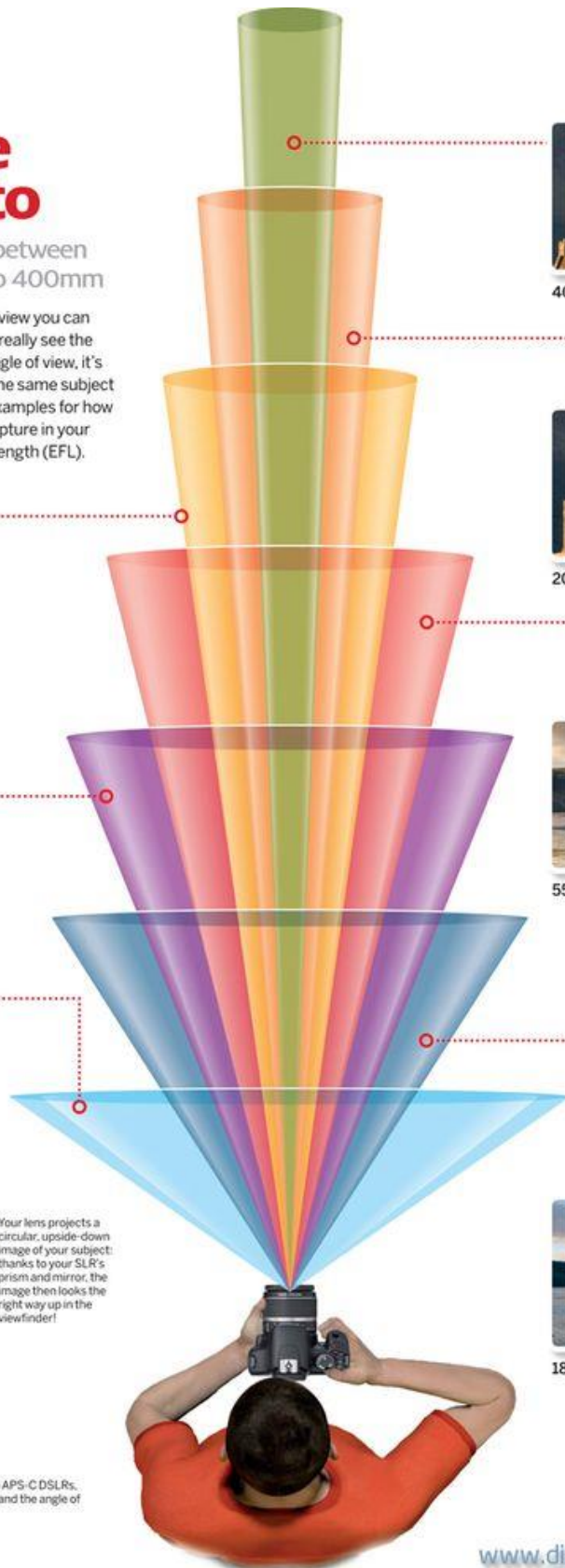Your lens projects a circular, upside-down image of your subject; thanks to your SLR's prism and mirror, the image then looks the right way up in the viewfinder!
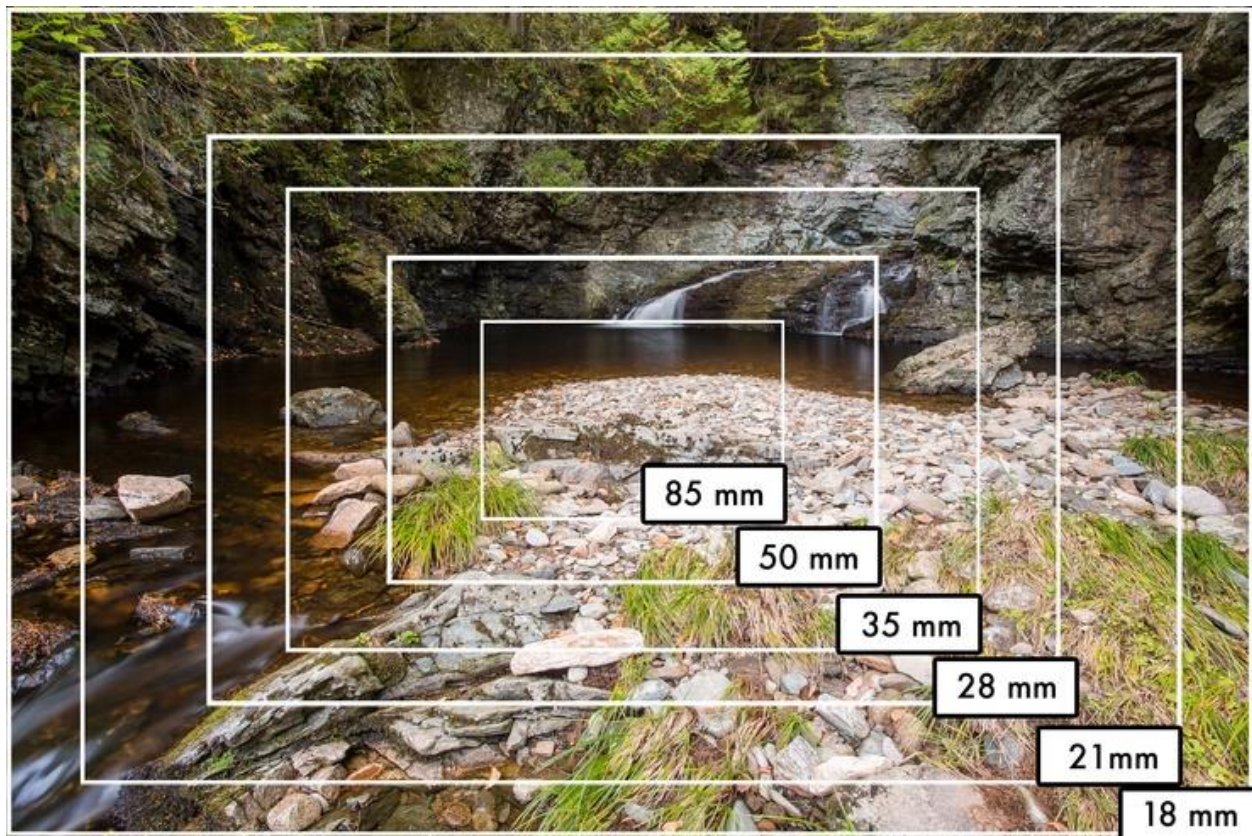
The view on a full-frame camera (sensor size: 36x24mm, same size as 35mm film).

The cropped view on APS-C DSLRs, the EFL is increased and the angle of view decreased.

Photos: Craig Roberts. Illustration: Andy McLaughlin

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85 mm

50 mm

35 mm

28 mm

21mm

18 mm

-1 ▪▪1▪▪ ▼ ▪▪1▪▪ +2

correctly exposed meter

Metering Modes

Centre-weighted

Spot

Partial

Evaluative

-1 ▪▪1▪▪ ▼ ▪▪1▪▪ +2

under exposed meter

-1 ▪▪1▪▪ ▼ ▪▪1▪▪ +2

over-exposed meter

640   2.8   -2·ı·ı·⌄·ı·ı·+2 ISO   100   13 ●

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WHY YOU SHOULD TAKE PHOTOS IN RAW

PHOTOGRAPHERS SETS EXPOSURE SETTING & PRESSES THE SHUTTER BUTTON

Cameras capture light

Camera might apply an algorithm

Digital gain is applied

Camera clips image data to black point

Camera might apply noise reduction

Camera applies white balance

Camera applies sharpening

Camera applies colour saturation

Camera applies a colour space

Camera applies contrast settings

Camera reduces bit depth of image from 12 to 8 bit.

Camera compresses file

CAMERA SAVES **RAW** FILE

CAMERA SAVES **TIFF** FILE

CAMERA SAVES **JPG** FILE

LEGEND

- Non destructive action
- Positive destructive action
- Negative destructive action

Source: http://bit.ly/raw-files-ftw

Treatment :   Color | Grayscale

WB :   Daylight ⇕

Temp   5500

Tint   + 10

Tone   Auto

Exposure   0.00

Recovery   0

Fill Light   0

Blacks   5

Brightness   + 50

Contrast   + 25

PHOTOSHOP SHORTCUTS

Hello, here are the most useful Photoshop keyboard shortcuts I know. Hope it helps...

m = marquee

l = lasso

c = crop

j = spot healing brush

s = clone stamp

e = eraser

r = blur

p = pen

a = direct selection

n = notes

h = hand

d = make colours default (b/w)

v = pointer

w = magic wand

k = slice

b = brush

y = history brush

g = gradient

o = dodge

t = type

u = rectangle

i = eye dropper

z = zoom

x = switch between colours

f = change screen mode

ESSENTIALS

⌘ n = new document

⌘ o = open document

⌘ w = close document

shift ⌘ s = save as

⌘ q = quit

⌘ p = print

⌘ c = copy

⌘ x = cut

⌘ v = paste

⌘ z = undo

option ⌘ z = multiple undo

⌘ spacebar + click = zoom in

option ⌘ spacebar + click = zoom out

⌘ a = select all

⌘ d = deselect

shift ⌘ i = inverse selection

spacebar + click = hand tool

⌘ t = transform tool

⌘ r = show/hide rulers

⌘ ; = show/hide guides

[= make brush smaller

] = make brush larger

tab = show/hide all tool pallets

⌘ tab = change application

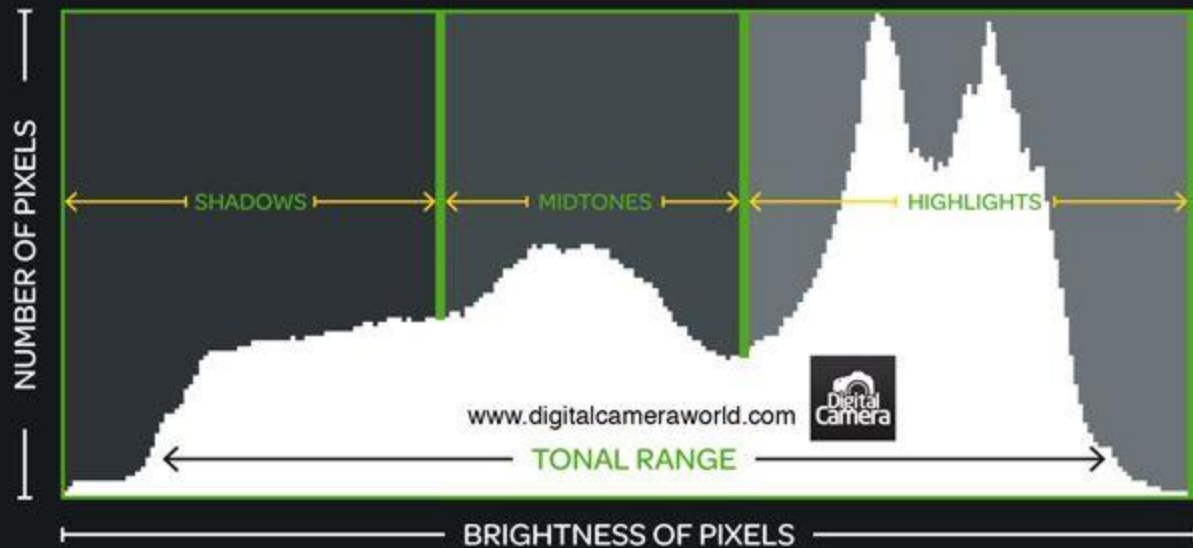⌘ 0 = document full magnification

⌘ + = zoom in

⌘ – = zoom out

EXPLAINED HOW TO READ A HISTOGRAM

A camera's histogram is an accurate guide to exposure, as it illustrates the range of tones, or brightness levels, present in an image. You should review the histogram each time you take a picture, so that you can assess if you need to make any exposure adjustments.

NUMBER OF PIXELS

← SHADOWS → ← MIDTONES → ← HIGHLIGHTS →

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TONAL RANGE

BRIGHTNESS OF PIXELS

The horizontal axis of the graph represents the brightness level, from darkest on the left to brightest on the right. The vertical axis shows how many pixels in the picture are at that brightness level

The histogram's size and shape gives you an instant guide to the contrast level of this scene. This image contains a full range of tones, including slightly clipped shadows (on the left of the shot) and burnt-out highlights (on the windows)

Name _____ Study Guide photo 2/3/portfolio

What is exposure:
-overexposed=
-underexposed=
-correct exposure=

Shutter speed
-visual effect fast shutter=   -numbers of fast exposure=
-visual effect slow shutter=   -numbers of slow shutter
How to be able to achieve faster shutter speeds=

Aperture
-visual effect large aperture=   -numbers of large aperture=
-visual effect small aperture=   -numbers of small aperture=
-what else can affect the depth of field

ISO
Low iso pro=   Low iso con=
High iso pro=   High iso con=

Focal Length
Lower number lens=   High number lens=

Metering modes
Evaluative/matrix=   Center weighted=   Spot=
Reading a light meter=

Choosing a **focal point**=

White Balance (color temperature)
Lower numbers=   higher numbers=
Daylight is=

Why **Raw**=

Photoshop Shortcuts
-copy=   -paste=   undo=   inverse=   brushsize=   zoom=   transform=   save=
Select all=   deselect=   make a flattened layer=

How to read a **histogram**
Left=   middle=   right=