

# HOW TO HOLD THE CAMERA



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Perfect to print A5 size  
14cm x 21cm / 5.83" x 8.27"

A sharp photograph results from several factors- all of which are of equal importance. These factors are: properly holding the camera, enough DOF, the lowest ISO setting possible, and a fast enough shutter speed to prevent camera shake.

## EYEBROW TOUCH

Rest the viewfinder against your eyebrow to create more support.

## HANDS

Use your right hand to grip the camera body and your index finger to press the shutter release. Cup the lens with your left hand, to create more support and stabilization.



## ELBOWS IN

Tuck your elbows in, resting your arms on your sides. This gives you a sturdy support.



## LEGS

Legs should be shoulder-length apart to create balance. If you need to lean in, move one leg forward and bend the knees slightly.



## KNEELING

Bring one leg up and rest your elbow on the knee. This basically creates a tripod-like shape.



## PORTRAIT

Turn the camera so the shutter release is at the top. Cradle the bottom of the camera with your left hand.

## BREATHING

Breathe out when taking a picture. Holding your breath in, creates a subtle shaking body motion.



## LEAN IN

Use a wall, flat surface or even another person's shoulder to create support. This is helpful when using a slow shutter speed and a tripod is not available.

# LENS FOCAL LENGTH

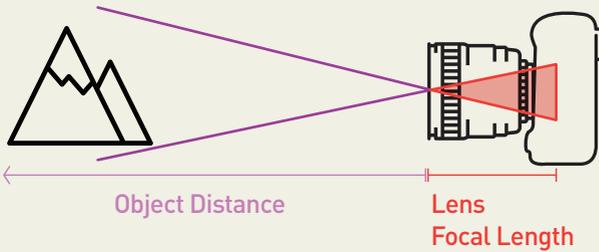


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The focal length tells us the angle of view: how much of the scene will be captured. And the magnification: how large individual elements will be recorded.

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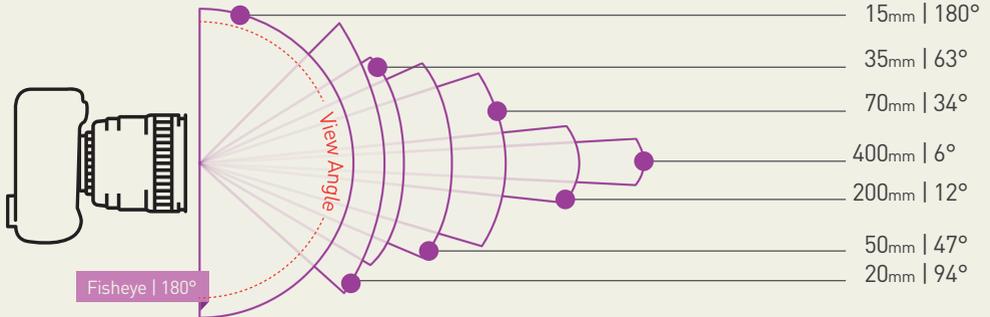
## WHAT IT IS AND HOW IT WORKS



It is represented in millimeters (mm), and it is **not the actual length of the lens**, but the optical distance from the point where the light rays converge to form an image of an object onto the digital sensor (or film) at the focal plane within the camera.

## ANGLE OF VIEW EXPLAINED\*

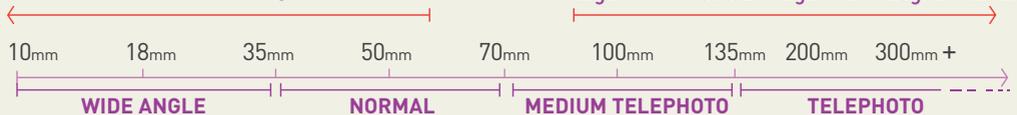
\* Based upon a 35mm sensor size.



## CLASSIFICATION AND BEST USAGE

The shorter the focal length, the wider the angle of view and the lower the magnification.

The longer the focal length, the narrower the angle of view and the higher the magnification.



Architecture, Landscape



Street, Portraits, Documentary



Nature, Wildlife



Nature, Wildlife, Sports

# TAKING SHARP PICTURES



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## BEFORE SHOOTING



### • PICK A MID-LEVEL APERTURE

f/5.6 to f/8 is a safe spot to give you enough depth-of-field (DOF) with most lenses.

### • HOLD THE CAMERA STEADY

Make sure that your arms are always in a comfortable position, with your elbows resting on your sides, legs or a steady surface. If not possible, use a tripod.

### • MIND THE ISO

Use a low to mid (200 to 640) ISO range to allow a good exposure, along with a proper shutter speed, and a mid-level aperture. A noisy image at higher ISO settings, **may seem** to appear unsharp.

### • SHUTTER SPEED AND FOCAL LENGTH

When handholding the camera, the shutter speed shouldn't be slower than the focal length of the lens in use. This rule does not apply if using a tripod.



Telephoto - 70mm

Shutter Speed: 1/80 and faster



Wide angle - 28mm

Shutter Speed: 1/30 and faster

## REFERENCE GUIDE\*

● Not recommended

● Depends on the situation

● Recommended

### HANDHELD - WITHOUT THE BENEFIT OF IMAGE STABILIZATION

Shutter Speed	1/10	1/20	1/60	1/125	1/400	1/1000	1/2500
15mm	●	●	●	●	●	●	●
28mm	●	●	●	●	●	●	●
50mm	●	●	●	●	●	●	●
200mm	●	●	●	●	●	●	●

### HANDHELD - WITH IMAGE STABILIZATION

Shutter Speed	1/10	1/20	1/60	1/125	1/400	1/1000	1/2500
15mm	●	●	●	●	●	●	●
28mm	●	●	●	●	●	●	●
50mm	●	●	●	●	●	●	●
200mm	●	●	●	●	●	●	●

\* This information should be taken as a general reference guide, since the results may vary depending on camera and lens models.

# SCENE MODES



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The use of "scene modes" helps a beginning photographer to understand camera settings by using pre-programmed information.

MODE	DESCRIPTION	USES
BEACH / SNOW	This mode compensates the exposure based on the premise that the scene should be primarily light tones, and brightly lit, with highly-reflective surfaces.	For scenes with a lot of white or light colors in it.
NIGHT SCENE	The camera self-adjusts the ISO to a medium-high setting. It also turns the flash off and sets a slow shutter speed, while exposing to preserve the highlights, and keeping the shadows detailed.	For night scenes without a central subject that needs special lighting.
NIGHT PORTRAIT	This mode behaves just Night Scene mode, except it usually turns on the electronic flash, red-eye detection, and in some cameras-face detection.	For night scenes with a particular central subject that needs additional light.
FIREWORKS	This is very similar to Night Scene mode, but it sets an even slower shutter speed to catch the trails of light from the fireworks.	Fireworks or moving lights with a dark background.
LANDSCAPE*	In order to get as much of the scene in focus as possible, the camera will set the focal length to a relatively wide angle (if the camera has zoom control), with a small aperture, and will set the focus to infinity.	Daylight or very well-lit landscapes or cityscapes.
MACRO/ PORTRAIT*	Either mode allows close focusing with a large aperture to blur the background. The camera sets the ISO as necessary.	Small subjects and portraits.
CANDLELIGHT**	This mode is a variation of Night Scene, but usually disables the flash to preserve the ambiance of the light, and adjusts the white balance toward the warm end of the light spectrum.	Low-light scene in with a subject illuminated by a soft, non-global light source.
SUNSET & FOLIAGE	These two modes bump up the contrast and saturation settings, and usually lowers the ISO while setting a faster shutter speed. The saturation increase only affects the .jpg files.	Dawn or dusk scenes or scenes where it's important to emphasize the colors.
SPORTS	To freeze fast-moving subjects, the camera will bump the shutter speed as high as possible, therefore raising ISO sensitivity to achieve a proper exposure. Many models might shift the camera to continuous drive and focus tracking.	Daylight or well-lit sporting events, fast-moving subjects, kids, and pets in movement.
MUSEUM	The camera turns off the flash, sets a relatively higher ISO, and a slow shutter speed.	Indoor scenes where the use of flash is not allowed.
FOOD*	Combines Macro and Night Portrait mode settings, and may also bump the saturation to bring up the colors of the food.	Indoor close-ups

\* This mode is not recommended, since results are not guaranteed. Instead, try Aperture Priority Mode.

\*\* This mode is not recommended. Instead, try Auto ISO and Shutter Priority Mode

# AUTO-FOCUS MODES



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The auto-focus mode allows you to tell the camera how you wish it to react when focusing.

## AF-A

### AUTO-SERVO AF

When you select AF-A, you are giving the camera control over whether to select AF-S or AF-C. This selection works best when you have a camera with many focus points (50 or more).



## AF-S

### SINGLE-SERVO AF

In this mode, when the shutter-release button is pressed down halfway, the focus is locked. Use it when photographing stationary subjects, or when you wish to pinpoint exactly where the focus will be placed (such as a subject's eyes).



## AF-C

### CONTINUOUS-SERVO AF

When the shutter release is pressed halfway, the camera focuses continuously, and then engages the "predictive focus tracking". This allows the camera to track the subject's movement, and it will predict the subject's position when the shutter is released. Use it when photographing fast moving subjects.



## WHEN TO AVOID IT

If the camera can't read the subject automatically, it might focus on the wrong area. In these cases, it's best to use manual focus.



Low-contrast



Dominating  
geometric patterns



Subjects behind  
bars, fences, etc



Too many fine  
details



Background is  
larger than subject

# BACKGROUND BLUR



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This guide is only meant to give a visual reference to the factors affecting background blur. Therefore, the values you will see here may or may not be precise. The numbers are not meant to be used as exact measurements of camera settings.

## APERTURE



f/1.4



f/2



f/2.8



f/4



f/5.6



f/8



f/11



f/22



### SMALL f /stop NUMBER MORE BLUR

Large aperture hole  
Shallow depth of field



### HIGH f /stop NUMBER SHARPER / LESS BLUR

Small aperture hole  
Wide depth of field

## FOCAL LENGTH



TELEPHOTO



NORMAL



WIDE



ULTRA WIDE

FULL FRAME

above 50mm

50mm

28mm

16mm

APS-C

above 30-35mm

30-35mm

17-18mm

10-11mm

Micro 4/3\*

above 24mm

24mm

14mm

8mm

Higher millimeter number  
Longer focal length  
Shallow DOF  
More Blur

Lower millimeter number  
Shorter focal length  
Wide DOF  
Sharper/Less Blur

## DISTANCE

### FOCUSING DISTANCE



SUBJECT CLOSER TO CAMERA  
Shallow DOF / More Blur



SUBJECT FARTHER FROM CAMERA  
Wide DOF / Sharper Background

### BACKGROUND DISTANCE



BACKGROUND FARTHER FROM SUBJECT  
Background out of focus



BACKGROUND CLOSER TO SUBJECT  
Background In focus or slightly out of focus

# DEPTH OF FIELD



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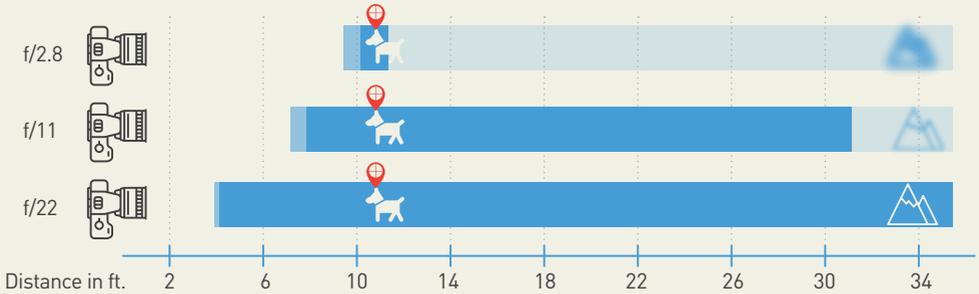
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It's not only the aperture factor that will render more or less depth of field -DOF-, there are other factors- like distance of the focal plane to the subject or the background, sensor size and lens focal length also add to the equation.

Focus point Closest DOF Window -slight blur- Furthest DOF Window - total blur-

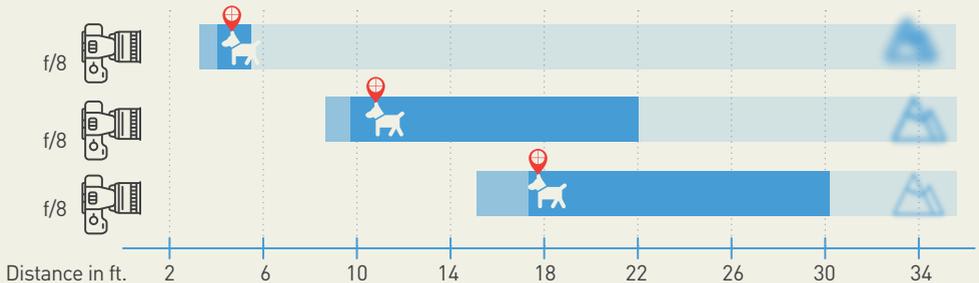
## APERTURE\*

The wider the aperture, the less depth of field -more blur-.



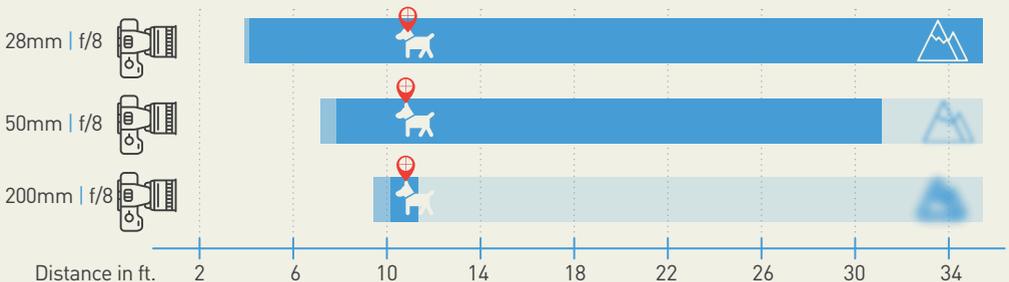
## DISTANCE\*

The closer the subject is to the camera, the blurrier the background will be at a given f/stop.



## FOCAL LENGTH\*

The wider the lens -shorter focal length-, the more depth of field -more in focus-.



\*Distances and other data are to be taken for reference only. The information may not be accurate.

# DRIVE MODES



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The choice of drive mode is an assist function of the camera. Most of the time you will use the single shot mode. However, there are situations where you will be happy to make use of the other options.

## SINGLE SHOT



Usually, the default drive mode in most cameras. In this mode, you take a single photo each time the shutter release button is pressed.

- **USE IT FOR:** When you have time to compose a single photo. It also helps when there's little space left on the memory card and you're conserving memory.

## CONTINUOUS/BURST



In this mode, the camera will take pictures continuously as long as the shutter release button is pressed. **This mode has two options:**

### LOW

The camera takes continuous shots- but at a slower pace.

- **USE IT FOR:** Taking pictures of kids, or any subject in motion- but there's no need to caption a large range of movement. Works best with slower memory cards.

### HIGH

The camera takes continuous shots at a faster pace.

- **USE IT FOR:** Taking pictures of fast moving subjects, sports, birds, etc.

## SELF TIMER



The camera adds a delay, from the moment the shutter release button is pressed, until the moment the picture is actually taken. The most normal default options are a 2 sec and a 10 sec delay. Some cameras offer customizable times and continuous shooting self timer options.

- **USE IT FOR:** Group photos, Selfie photos, and long exposure photography.

## MIRROR LOCK-UP



You can lock the mirror up completely, leaving it in its open position, and not covering the sensor. In this position, the mirror will block the viewfinder, and you will not be able to see through it. Frame up and focus the shot before activating this function. This is for long exposures such as night photography.

- **USE IT FOR:** Minimize vibration of the camera.

## REMOTE

The wireless, or wired, shutter release accessory is also known as a remote release.

- **USE IT FOR:** longer exposures where you do not want to "bump" the camera by pressing the shutter release button manually.

## QUIET / SILENT

This mode works just like Single Shot mode, except the mirror that moves up every time you take a photo, (causing noise), moves up slowly, minimizing the noise.

- **USE IT FOR:** Weddings, in museums, or situations that require silence.

# RAW vs JPEG



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A never ending debate in digital photography, these two file formats offer different options, especially post-production and workflow.

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## COMPARISON

### RAW

- Uncompressed file format
- Each camera maker has a different filename extension
- Traditionally needs a viewing/editing program to be processed (some newer cameras offer processing in-camera)
- Large size
- Preserves the most amount of information about an image and contains more colors and dynamic range
- Has to be post-process to get best results, the image looks dull without adjustments
- Gives extended control over exposure, colors, saturation, white balance, etc.

### JPEG

- Standard file format
- The same filename extension in all cameras (.jpg)
- It's processed by the camera, so it can be opened/view in any program
- Smaller size image format
- Because it is so compressed, certain information is removed from the image.
- Capable of displaying millions of colors in a highly compressed file
- Easily post-processed but there will be a small loss in quality over time



**RAW - Unprocessed**  
Original size: 32.3 MB



**JPEG Unprocessed**  
Original size: 9 MB



**RAW - Processed**  
-converted to jpeg for printing-  
Original size: 14.8 MB

## WHEN TO USE IT

### RAW

- Journalistic photography
- Image will be heavily processed: fashion, graphic design, etc
- Need perfect white balance and tones, or want complete control over the final look
- Image will be used for large prints

### JPEG

- Everyday snapshots
- Shooting for immediate display
- Shooting for web
- Restricted memory space
- Rapid succession burst shooting

### Most common camera manufacturers and raw filename extensions:

Canon: .crw .cr2 | Nikon: .nef | Kodak: .dcs | Sony: .arw .srf | Fuji: .raf | Samsung: .srw

# WHITE BALANCE



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The White Balance setting you choose will change the color in your pictures, making it warmer or cooler depending upon the existing light.

## WHITE BALANCE OPTIONS

**AWB** **AUTO** **AUTOMATIC / AUTO**

The camera sets the white balance. It can be used for snapshots, although small variations in light may change the colors from shot to shot.



**FLUORESCENT**

Designed to be used under fluorescent lights, this setting adds tones in the warm-red range to the image. It's helpful to balance images that look too green.



**TUNGSTEN / INCANDESCENT**

Designed for domestic lighting, since it adds cool tones to balance the color indoors. If use in other settings, the image will look very blue.



**DAYLIGHT**

This option adds warm tones to the image, to give a final neutral-colored photograph. It balances your images when shooting under direct sunlight.



**CLOUDY**

Cloudy days naturally cast cooler tones. To balance the image, this setting adds warmer tones.



**SHADE**

Designed for open shade, in daylight. It adds more warmth -orange- than the Cloudy setting, and gives more natural-looking skin tones.



**FLASH / AUTO FLASH**

Designed to be used with a flash unit or the in-camera flash, this option adds warm tones to the image. Using this setting prevents skin tones from looking too cold/blue.



**CUSTOM**

Designed to let the photographer set the white balance based on the light temperature.

Some cameras offer more options, such as:

**K:** Lets you manually change the Kelvin value from 2,500 to 10,000.

**Preset (PRE):** For color matching with a white card.

## WHITE BALANCE SITUATIONS



Domestic lights  
Candle flame



Bright skies  
Noon



Early morning  
Late evening



Built-in flash  
Electronic flash



Daylight  
overcast sky



Shade with  
clear sky

# APERTURE (f-stop)



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The aperture (f-stop) controls the amount of light reaching the sensor through the lens. The aperture size will regulate the sensor's degree of exposure to light.

## APERTURE SCALE



### BRIGHTER

Allows MORE light in

### DARKER

Allows LESS light in

## DEPTH OF FIELD FACTOR

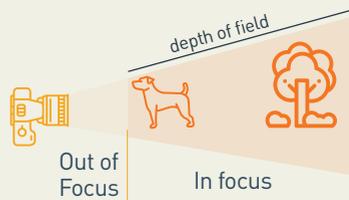


### BRIGHTER

SHALLOW DEPTH OF FIELD  
BLURRED BACKGROUND

### DARKER

DEEP DEPTH OF FIELD  
EVERYTHING IN FOCUS



## CREATIVE USES



f/1.4

Bokeh effect  
Low light



f/2.8 - f/5.6

Portraits - Sports



f/8 - f/16

Landscapes



f/16 - f/32

Long exposure

# DSLR TERMINOLOGY



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Even though each camera make and model is different, this guide will help you to easily identify basic parts and functions.

## PICTURE REVIEW BUTTON



**VIEWFINDER**  
The main source for viewing the scene and menu options

**LCD WINDOW**

## DIOPTR

It allows you to customize the viewfinder so that you can see a clear focused image.

## LENS ALIGNMENT MARK

Line up the matching dots to fit the lens into the mount, and then twist until it locks.



## DEPTH OF FIELD PREVIEW

It helps you see potential depth of field

## SHUTTER RELEASE

When pressed, the shutter of the camera is "released", so that it opens to take a picture.

## HOTSHOE

The mounting point on the top of the camera to attach a flash unit.

## SHOOTING MODE DIAL

Sets the camera to your desired shooting mode.



## LCD CONTROL PANEL

Provides information on camera settings (ISO, white balance, battery power, number of pictures left, etc.)



## BATTERY SLOT

## TRIPOD THREAD SLOT

# UNDERSTANDING ISO



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ISO is the level of sensitivity of your camera to light. The lower the ISO number, the less sensitive it is to the light, and the higher the ISO number, the more sensitive it is to the light.

## CALCULATING ISO BY THE INTENSITY OF THE LIGHT SOURCE



**ISO 100**

Full sun and no shade



**ISO 200**

Shade, overcast day, or inside near a window



**ISO 400**

Deep shade or heavily overcast day



**ISO 640-800**

Early, or late, hours of the day: sunrise or sunset



**ISO 800**

Bright interiors



**ISO 1000**

Mid-level lighting condition, indoors or outdoors



**ISO 1250**

Low-light level interiors, or post-sunset



**ISO 1600**

Extremely low light

This cheat-sheet is for natural light, not electronic flash.

The noise factor of the ISO settings can vary widely depending on the camera model.

## GRAIN / NOISE FACTOR



**ISO 200**



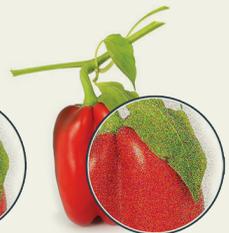
**ISO 640**



**ISO 1000**



**ISO 1250**



**ISO 1600**

# METERING MODES



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These options tell the camera how to set camera meter, to evaluate the image area, for tone value and exposure.

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## Evaluative / Matrix metering

The default mode in most DSLRs. It measures light across the whole frame, but places strong emphasis on the area around the auto-focus point in use at the moment. The camera applies its own exposure compensation, making a good option when you need to grab a shot quickly

**Great for evenly lit scenes, with not a lot of variation in lighting.**



## Center-weighted average metering

This mode meters the light across the whole picture, like an old-fashioned evaluative mode. Yet, it places greater emphasis on the center of the image. It doesn't take focus into account. It applies the same averaging pattern on every shot.

**Great for portraits, since it leaves any highlights, or shadows, in the corners of the image out of the equation.**



## Spot metering

This is the most accurate- yet hardest mode to master. It reads the intensity of the light over a small circular area in the center of the image. It offers pin-point precision.

**Great for scenes with varied lighting and when utilizing Manual Mode.**



## Partial metering

Measures the intensity of the light over a slightly larger circular area than in spot mode, making it easier to use.

# SHOOTING MODES

These options may tell the camera how to set the shutter speed and aperture, adjust ISO, set your white balance, pop the built-in flash, or change other picture settings internal to the camera.



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## CAMERA MODES

AUTO

### Full automatic mode

The camera sets all of the settings automatically for a properly exposed and sharp image.

M

### Manual mode

The photographer sets the Shutter Speed, Aperture and ISO. The camera provides a meter reading.

S / Tv

### Shutter priority mode

The photographer sets the Shutter Speed and the camera sets the proper Aperture. The ISO is set separately. Exposure is adjusted through the exposure compensation setting.

A / Av

### Aperture priority mode

The photographer sets the Aperture and the camera sets the proper Shutter Speed. The ISO is set separately. Exposure is adjusted through the exposure compensation setting.

P

### Program mode

The camera pairs up an Aperture and Shutter Speed combination. The ISO is set separately. Exposure is adjusted through the exposure compensation setting.



### Macro / close-up mode

The camera sets the ISO, shutter speed, and aperture to assist in macro photography.



### Landscape mode

The camera sets the ISO, shutter speed, and aperture to assist in landscape photography. The built-in flash is turned off.



### Night portrait mode

The camera combines the built-in flash and a slow shutter speed.



### Portrait mode

The camera sets a wide / large Aperture to blur the background. Overrides other settings.



### Sports mode

The camera sets a fast Shutter Speed to freeze action.

# SHUTTER SPEED



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Shutter speed is the length of time that the camera shutter is open to expose light into the camera sensor.

## HOW TO SET THE RIGHT SHUTTER SPEED TO GET SHARP IMAGES



**1/4000-1/1000**

Freezing fast moving objects



**1/250 - 1/60**

Everyday photos. Objects still or barely moving



**1/30 - 10"**

Capturing motion with blur

## SITUATIONS



**1/4000**

Very fast moving objects



**1/1000**

Fast movement, sports



**1/500**

People running or slow moving sports



**1/250 - 1/60**

Slow moving people, children



**1/60**

Slowest handheld setting for sharp images



**1/30 - 1/2**

Motion blur on consistently moving objects: waterfalls, rivers, cities



**2"**

Long exposure; fireworks



**5" - 10"**

Long exposure: painting with light, stars, milky effect on moving water

## LONG EXPOSURE / CREATIVE EFFECTS

## BLUR FACTOR



**1/2000**



**1/250**



**1/20**



**1/2**

# EXPOSURE COMPENSATION



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Exposure compensation tells the camera that a photograph needs to be lighter or darker than the calculated exposure.

## HOW IT WORKS



Most cameras have a button with this symbol on it.



Other cameras have a dial that you turn to change exposure.

These values are measured in stops, which can be half or double the amount of light recorded by the camera. So, a photograph shot at +1 exposure compensation will have recorded twice as much light as a photograph shot at 0.



## EXPOSURE COMPENSATION IN DIFFERENT CAMERA MODES

### A / Av APERTURE PRIORITY MODE

By default, in this mode, if you change the Aperture, the camera sets another proper shutter speed, and there is no change in the exposure level. Exposure compensation lets you change the shutter speed (and the overall exposure value) while staying at the same aperture.



This is helpful when you want to keep the depth of field, and can afford to have a small change in shutter speed.

### P PROGRAM MODE

In this mode, exposure compensation will change the Aperture and Shutter Speed equally, to meet the desired exposure compensation.

### S / Tv SHUTTER PRIORITY MODE

In this mode, exposure compensation changes the size of your aperture. You set a shutter speed, and the camera sets a proper aperture. Exposure compensation therefore changes the exposure by allowing you to change that aperture size.



To make sure that the subject movement is frozen, or blurred, the shutter speed was a priority, and a change in depth of field would not affect the result.

## WHEN IT WON'T WORK

### MANUAL

Since the photographer can change all the settings.

### AUTO

Since the camera has full control on the settings.

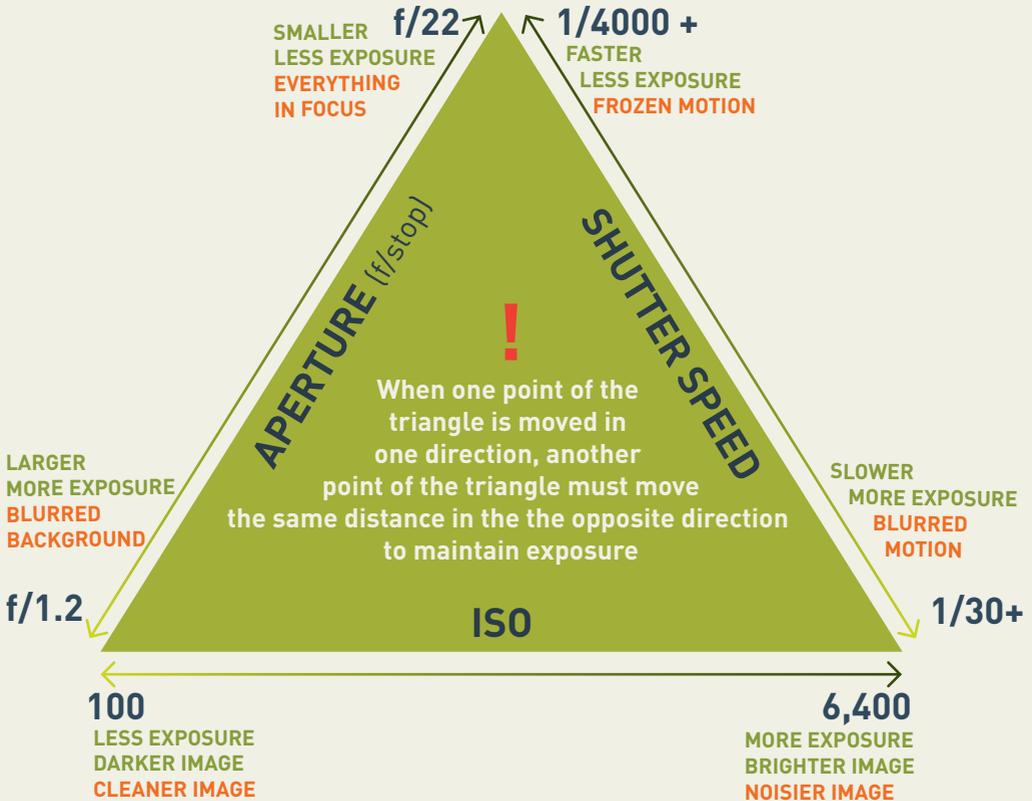
# EXPOSURE TRIANGLE



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Proper exposure is achieved by 3 camera functions coming into balance: ISO, f/stop and shutter speed. This is called the "Exposure Triangle".



## PRACTICAL EXAMPLE



### FULL SUN - OUTSIDE

Initial camera setting:

ISO: 100

Shutter Speed: 1/125

f/stop: f/16

Situation:

Subject is fast moving, you need to increase the shutter speed to get a sharp image.

Improved camera setting,  
as per the exposure triangle:

ISO: 100 | No change

Shutter Speed: 1/500 Move two stops up

f/stop: f/8 Move two stops down

# UNDERSTANDING THE HISTOGRAM

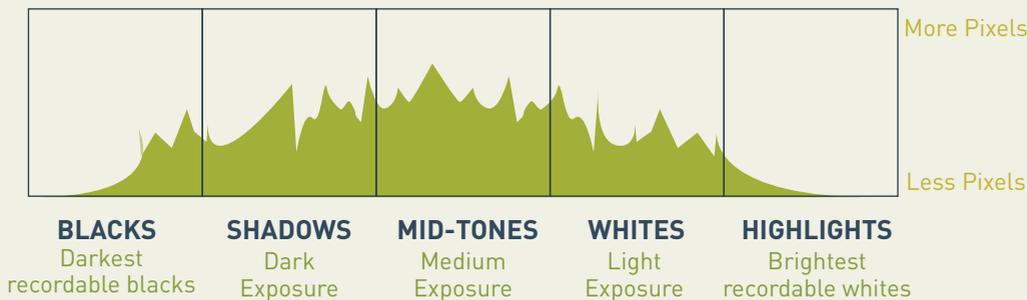


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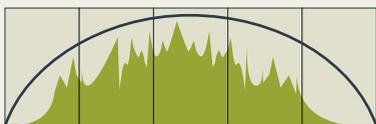
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This tool will give you a tonal analysis of your image, and thus allows you to get the best exposures on your photographs.

## HOW TO READ THE HISTOGRAM

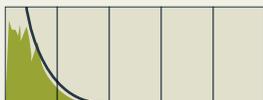


## WHAT THE HISTOGRAM TELLS ABOUT EXPOSURE



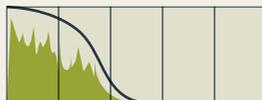
### NEUTRAL EXPOSURE

This reading produces the **safest exposure**. Even when the tones look slightly brighter in camera, this can be easily post-processed.



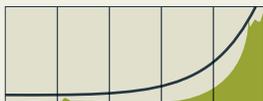
### UNDEREXPOSURE

Try to **avoid this reading**. Use a wider aperture or a longer shutter speed. Underexposed photos are very hard to recover in post-processing.



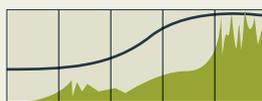
### TO THE LEFT

This reading can produce an acceptable photo. Can be fixed in post processing, although it might induce noise into the photo.



### OVEREXPOSURE

This setting eliminates many details in the image, by over-exposing the highlights. Use a lower ISO number to avoid it. Overexposed photos are very hard to recover in post.



### TO THE RIGHT

This reading can be fixed in post-processing fairly easily. The images will be less noisy, but it can be easy to slide into overexposure

# LANDSCAPE EXPOSURE



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Proper exposure for landscapes is difficult to master. There are several reasons for this. A landscape is generally far from the camera making it difficult to meter. The contrast range is likely to exceed the camera's ability to record all tones. Finally, the tonal value isn't likely an average setting.

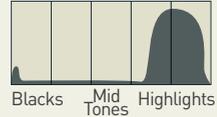


## WINTER SCENE / HIGH-KEY

- EVALUATIVE METERING**
- +3 STOPS** -in any shooting mode-

**ISO LOW**

When first metered, the scene will be **underexposed**, making the whites look gray. This is why exposure compensation is necessary.

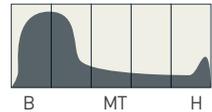


## DARK SCENE / LOW-KEY

- EVALUATIVE METERING**
- 1/-2 STOPS** -in any shooting mode-

**ISO LOW - MEDIUM**

When first metered, the scene will be **overexposed**, making the shadows look gray. This is why exposure compensation is necessary.

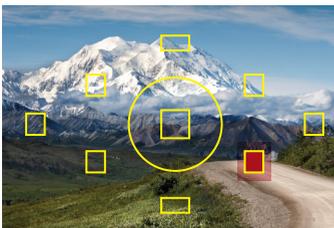
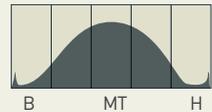


## BRIGHT SCENE / FULL TONAL RANGE

- EVALUATIVE METERING**
- ADJUST ONLY IF NEEDED**

**ISO LOW**

When first metered, the scene will be exposed with an **averaged** setting. Adjust the exposure compensation if needed.

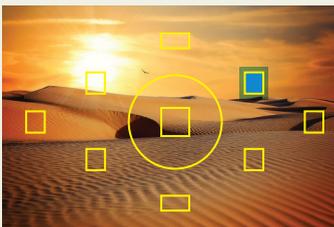
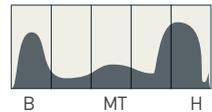


## DARK & BRIGHT SCENE / HIGH-CONTRAST

- SPOT METERING**
- EVALUATE ON SCENE**

**ISO LOW**

When first metered, the meter will either **overexpose the highlights** or **underexpose the shadows**. Place the spot meter on a mid-tone area and use exposure compensation based on the area you wish to stand out.

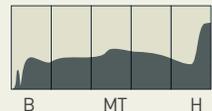


## BACKLIT SCENE / LOW TONAL RANGE

- SPOT METERING**
- EVALUATE ON SCENE**

**ISO LOW**

Place the spot meter on an area away from bright light sources or shadows. Adjust the exposure compensation if needed.



# PHOTOS IN LOW LIGHT



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In low light, your options are the use of a wide aperture, higher ISO, slower shutter speed, use of an electronic flash, and possibly the use of a tripod or other camera stabilization.

## ELEMENTS



### CAMERA

When possible, the best option is a lens that offers an aperture of  $f/2.8$  or wider. Image stabilization capability is a huge plus.



### EXTERNAL FLASH

Important for photos of people or objects where deep shadows are a concern.



### TRIPOD

In low light, it may be necessary to use a slower shutter speed, and using a tripod, or a monopod, will help steady the camera.



### REMOTE SHUTTER RELEASE

With long shutter speeds, even pressing the shutter release button can cause blur. With a remote release, there's no need to touch the camera.

## SETTING ESSENTIALS

### A / Av APERTURE PRIORITY MODE

Using a large aperture allows more light in. Set the camera on Av mode and choose the largest aperture (f/stop) possible- or use Manual Mode.



### EXPOSURE COMPENSATION

When in an auto exposure mode (Av, Tv, or P) Turning the dial to the positive numbers will help increase exposure.

### SLOW SHUTTER SPEED

The longer the shutter is open, the more light that comes in. Yet, the more likely to get camera shake blur. To avoid this, a tripod and a remote shutter release are needed.

### HIGH ISO + RAW

Increasing the ISO is another way to boost the exposure. The increased noise can be fixed in post-processing- especially if shooting RAW.

## SETTINGS GUIDE



### INDOORS

**Tripod:** Generally not needed  
**Ext. Flash:** Possibly  
**ISO:** Mid to High  
**Aperture:** Wide  
**Shutter Speed:** Min 1/60<sup>th</sup>



### HAND-HELD OUTDOORS

**Tripod:** Not needed  
**Ext. Flash:** Possibly  
**ISO:** Mid to High  
**Aperture:** Wide to Mid  
**Shutter Speed:** Min 1/125<sup>th</sup>



### CITY LIGHTS

**Tripod:** Yes  
**Ext. Flash:** Not needed  
**ISO:** Low to Mid  
**Aperture:** Wide to Med  
**Shutter Speed:** Slow



### STARS

**Tripod:** Yes  
**Ext. Flash:** Not needed  
**ISO:** Mid to High  
**Aperture:** Wide to Med  
**Shutter Speed:** Slow to Very Slow

# MANUAL MODE



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Manual mode requires the photographer to physically set 3 camera functions: ISO, f/stop and shutter speed.

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## 1 SET THE ISO



## 2 SET THE APERTURE



## 3 CHECK CAMERA METER FOR PROPER EXPOSURE: -2 | -1 | 0 | +1 | +2

Under      Over

## 4 ADJUST SHUTTER SPEED OR APERTURE UNTIL PROPER EXPOSURE

Fast shutter speed: freeze action

Slow shutter speed: blur motion

**Underexposed reading**

-2 | -1 | 0 | +1 | +2

**Proper reading**

-2 | -1 | 0 | +1 | +2

**Overexposed reading**

-2 | -1 | 0 | +1 | +2

Adjust the shutter speed or the aperture until the meter reads 0.

Adjust the shutter speed or the aperture until the meter reads 0.

## 5 FINAL CHECK

- Adjust exposure based on the subject:  
Do you need to freeze action or increase the depth of field?
- Keep the camera meter indicating proper exposure:  
**Is the image too light?** Move the camera meter towards underexposure (under 0)  
**Is the image too dark?** Move the camera meter towards overexposure (over 0)

# MASTERING BACKLIGHT



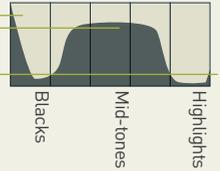
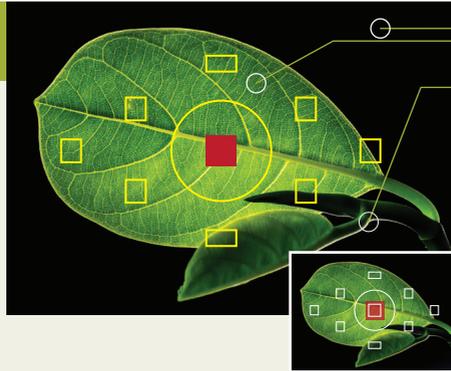
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Backlighting a subject is one of the most dramatic lighting schemes that you can employ. However, it can be challenging to find the correct subject and then meter the lighting appropriately.

## LIGHT THROUGH THE SUBJECT

- The backlight source must be placed behind the subject, it generally works best when there's little to no light hitting the background.
- This technique works with subjects that are translucent such as foliage, fabric, and windows.
- It creates a dramatic mood, especially in macro photography.

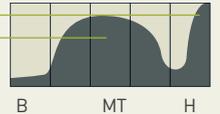
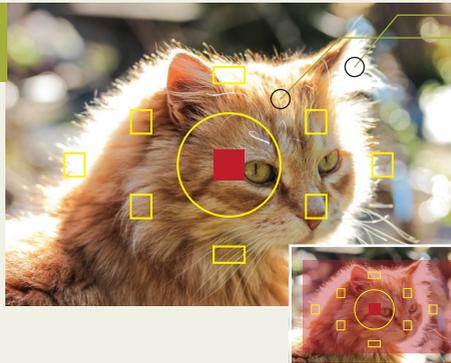


## SPOT METERING

Meter just the subject, not the background.

## BACKGROUND & SUBJECT

- The backlight source is behind the subject, and generally illuminating the background as well.
- In most cases, an additional light source from the front will be needed, such as an electronic flash or a white bounce card.
- Good for portraits, or making a subject stand out from the background in midday light.

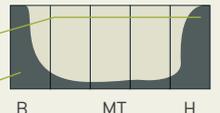
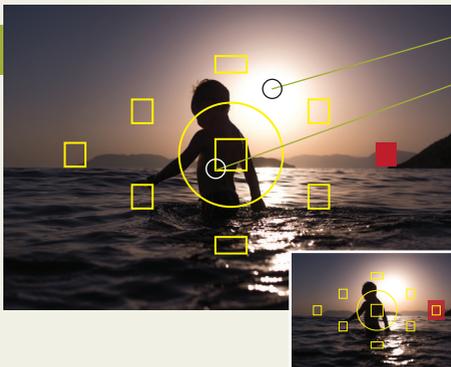


## EVALUATIVE METERING

place the center of the meter frame on the most important feature of the subject.

## SILHOUETTE

- The backlight source must be behind the subject.
- Manual mode is recommended.
- Excellent for high-drama effect.
- Avoid front light sources.
- Simple compositions work best.



## SPOT METERING

Place the spot meter on a mid-tone area of the background, making sure that the brightest part of the backlight source is outside of the metering frame.

# COMPOSITION BEGINNER TOOLS – PART 1



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Understanding composition, and how to apply it to the creation of a photograph, is without a doubt one of the most important skills for a photographer to master.

## STRAIGHT HORIZON LINE

A crooked horizon line, (or any horizontal main line), can feel unnatural and cause a viewer to sub-consciously feel an imbalance. In general, horizon lines work best when they're straight.

Straight  
Line



Crooked  
Lines

## MOVING OBJECTS

Moving objects should enter, not exit the frame. The human eye will try to follow the supposed path of a moving subject. If the subject is moving out of the frame, it feels as if the photograph is incomplete.



Entering the Frame

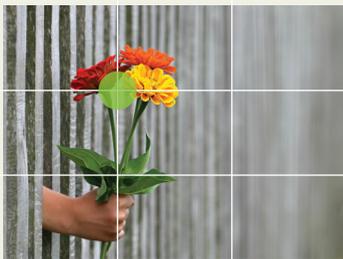


Leaving the Frame

In this example, the athlete is about to jump, or just finished. Either way, the main action - the obstacle jumping - is not happening inside the frame.

## RULE OF THIRDS

Divide the frame into nine equal sections by using 2 horizontal and 2 vertical lines. Place the main element of the scene at one of the intersection points. Placing the subject off-center often creates a more appealing composition.



## LEADING LINES

Leading lines help drive a viewer's eyes toward important elements, thus helping them to focus on the main subject. They can sometimes also add motion and depth.



# COMPOSITION BEGINNER TOOLS – PART 2



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Understanding composition, and how to apply it to the creation of a photograph, is without a doubt one of the most important skills for a photographer to master.

## USING FRAMES

Create a frame within a frame. Place elements around the edge of the composition, so that they create a natural frame to the subject. This helps to isolate the subject and emphasize it as the main point of interest.



## FOREGROUND INTEREST

By adding a foreground element, it helps to create a point of interest. With this technique, you can add a subtle path into the entire composition. Plus, it helps give a sense of depth to a scene.



## PATTERNS AND REPETITION

Patterns are visually appealing and suggest balance and harmony. Repetition of elements can have the same effect. Adding textures can also create an attractive composition. You will score a great shot when you combine all 3: pattern, repetition, and texture.



## FILL THE FRAME - SIMPLIFICATION

Doing this, helps the viewer focus on the smaller details of the subject, and by leaving little or no space around it can be a very effective way to convey a message -such as expression, markings, architectural details, etc-.



# COMPOSITION INTERMEDIATE TOOLS – PART 1



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Once you've developed an eye for some of the basics of composition, it's time to move on to intermediate level techniques. These techniques require a slightly higher level of competence.

## ORIENTATION

Orientation is also referred to as image flow. Every scene has a natural flow- vertical or horizontal. Train your eye to recognize strong lines that push the eyes in one way or the other. Using the wrong orientation is common mistake with new photographers.



## COLOR SCHEMES

### Complementary colors

Taking the color wheel as a base, complimentary colors are those that sit on opposite sides of the spectrum. They are highly contrasting, and create striking photos when combined.



### Spot color

Sometimes a color -usually a saturated warm color- will naturally stand out from its surroundings thanks to the lighting, composition, surrounding colors, etc.



## BALANCE

Placing the main subject off-center, creates a more attractive composition. But, it can leave a void on the other side of the image. To balance the visual weight, place another element, of lesser importance, in the opposite space -smaller, out of focus, etc.-



## DEPTH OF FIELD

One of the simplest ways to drive interest toward the main subject is to place it in sharp focus, while letting the background, and other objects, fall out of focus. For instance, in a portrait, if the eyes are the most important feature, they should be kept sharp. and then details, like hair, can be left slightly out of focus.



# COMPOSITION INTERMEDIATE TOOLS – PART 2



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Once you've developed an eye for some of the basics of composition, it's time to move on to intermediate level techniques. These techniques require a slightly higher level of competence.

## CENTER & SYMMETRY

By their natural lines, symmetrical scenes work perfectly in centered compositions. Not only vertically, but also horizontally, (especially when using reflections).



## TRIANGLES

While horizontal lines, and vertical lines, suggest stability... triangles, and diagonals, create the opposite effect: dynamic tension. A scene with triangular subjects, or implied triangular shapes, will often appear more dynamic and energetic.



## RULE OF ODDS

Objects, in even numbers, especially when evenly spaced, create a feeling of structure. Another way to create an attractive composition is to break this pattern. You can accomplish this by including an odd number of primary elements within your photograph.

## NEGATIVE SPACE

Balancing the visual weight within an image (see part 1) creates a harmonious composition, but breaking this rule can also lead to very interesting, eye-catching images. Leaving an empty, or "negative", space around the main subject can make it stand out. Make sure the empty space is part of the composition.



# COMPOSITION PSYCHOLOGY



Composition is important to your photographs for several reasons. First, and foremost, it establishes a “path” through your image. However, it also can add mood or help tell a story. All three factors are key to great photographs.

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## SYMMETRY



One half (top/bottom, left/right) of an image is identical, or almost, to the other. Naturally, the human eye aims for patterns and balance, and symmetrical images create a sense of harmony, control and proportion. The best way to get these shots is to place your camera as close to the center of your subject as possible (directly below a dome, or right in front of a model, or building, for example).

## MOOD IN COLOR

Even though the perception of color is subjective to each individual, there are certain general guidelines that can help you achieve a certain message or mood, through the use of color.

### WARM COLORS

Red is the color that grabs the most attention. If it occupies most of the frame, it can create feelings of anger, passion, or speed. If used as a detail, it will make that detail stand out. Yellow and orange, create a youthful, energetic vibe.



### COOL COLORS

Cooler colors, (especially blue), bring a sense of calmness and peace. Green, because it's found in nature, creates a feeling of growth, and relaxation.



## SHAPES

Every element in a photograph will have a shape. Some organic (curved, irregular) and some geometric (symmetrical, usually clean and straight). In the overall composition, we tend to look for balance in one of 3 basic shapes: **Oval**, **square** and **triangle**.



# PLANNING A FAMILY PORTRAIT SESSION



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Family portraits require the photographer to be prepared. Groups, and especially large groups, will find it difficult to be patient if the photographer is not prepared.

## SUBJECT APPEARANCE

### CLOTHING

- Ask the members of the family to plan their outfits, even bring a change of clothes. As a general rule, it's visually more appealing if all the subjects dress in similar color tones.
- Avoid having extremely bright clothing -or- only one member wearing bright colored clothes- unless- aiming for a specific style requested by the subjects. Avoid patterned clothing.
- Remind them to wear clothes they feel comfortable in (not too tight, short, warm, etc).

### MAKE UP AND ACCESSORIES

- Keep it simple. Stay away from trendy makeup or accessories. They will make the picture look very outdated once the fashion trend goes away.

## EQUIPMENT

### PROPS

- Bring -or ask the family to bring- toys and games that will entertain young children. This can help keep them engaged and cause smiles and/or laughs from the entire group.
- If shooting outdoors, bring a towel, or paper towels, in case someone gets sweaty or dirty. A blanket is also helpful, if there are going to be any pictures taken while sitting on the ground.
- Bring hair accessories for people with longer hair. A hair tie, and a brush, are helpful for windy conditions.
- Buggy spray, a small portable mirror, and a duffel bag to store purses, shoes, etc. (so they don't get lost - especially if shooting outdoors) are helpful touches.

### GEAR

- Using a tripod helps you frame the photo first, then take your eyes off of the viewfinder, and engage the family members eye to eye. Creating a connection with the family is important.
- Unless shooting a large group, stay away from wide-angle lenses. A safe focal length is in the 50-135mm range.



There is an ideal time for outdoor family portraits: 45 minutes before sunset until 30 minutes after sunset. Sunrise is trickier- allowing only about a 20 minutes window after the Sun breaks the horizon.

# INDOOR NATURAL LIGHT



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When you first begin to point your camera at people- taking their photograph, while utilizing indoor natural lighting, is one of the easier ways to get started. Always be mindful of your shutter speed and your ISO.

## ELEMENTS



### CAMERA

When possible, use a lens that offers a large maximum aperture.



### NATURAL LIGHT SOURCE

Nearby windows, doorways, sliding glass doors, picture windows, window bays, or open garage doors.



### WHITE CARD / REFLECTOR

If the light source is too direct, it can create hard shadows. Bounce light back into the shadows.

## SET THE CAMERA

### IT'S ALL IN THE EYES



Focus on the subject's nearest eye to the camera. Lock the focus, and then compose your shot.

### USE APERTURE PRIORITY



Set the camera to Aperture Priority mode or Manual mode. Use a wide aperture (f1.8 - f5.6 for 1 or 2 people) (f5.6 - f11 for groups) Make sure your shutter speed isn't too slow.

### MIND THE ISO

**ISO = LOW is BEST**

Once you've set your aperture, set the ISO to 100, and check the light meter. If the shutter speed is 1/125 or slower, then increase the ISO or use a tripod.

## SHOOTING THE PORTRAIT



Placing the subject facing the light source, will give you an even light that softens the features.



Posing the subject at an angle to the light, will create a model-like mood and make their features stand out. For this angle, you may need a reflector to soften hard shadows.

# OUTDOOR NATURAL LIGHT



When you first begin to point your camera at people- taking their photograph, while utilizing outdoor natural lighting, is one of the easiest ways to get started.

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## SETTING UP THE CAMERA



### CHOOSE THE RIGHT LENS

Use a longer focal length lens, and try to fill the frame with your subject. Stay away from ultra wide-angle lenses, as they can distort the edges of the frame, and this will be noticeable when shooting groups of people.

M / Av

### SHOOT IN MANUAL OR APERTURE PRIORITY MODE

When shooting portraits, one of the key elements is to take control of the depth of field. Taking photos outdoors means that there can be distracting elements in the background; blur the background by using a wider aperture.



### IDEAL TIME

The best outdoor natural light occurs from 30 minutes before sunset until 45 minutes after. Sunrise has a short window of opportunity- about 20 min. max.

## TAKE THE SHOT

### GROUP



#### APERTURE

Set the aperture to between  $f/5.6$  -  $f/11$ . These  $f$ /stops give you enough depth of field to keep the subjects sharp, while letting the background blur.

#### POSITION

If possible place the group into the shade, or put the Sun at their backs and use a fill-in flash.

#### POSING

Study the example. Position the group so that the head heights vary. Group interaction is always pleasing. Position the subjects, so that they are not looking off frame. Another alternative is to have everyone looking at the camera.

### INDIVIDUAL



#### APERTURE

Get close. Use a large aperture to keep the background blurred. Set your critical focus onto the eye closest to the camera.

#### POSITION

Place your subject into the shade, or with the Sun behind them, and use a reflector or a fill-in flash.

#### POSING

Headshots, stay close. Always keep an eye on the neck for squished skin. Keep the chin slightly up. Half body shots, watch for slumping shoulders. Full body shots, look for tense hands or stiff legs. Keep your subject relaxed.

# PORTRAIT CROP GUIDE



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There are a number of standard "crops" when creating portraits. They include the head shot, the head and shoulders shot, half body shot, and the full body shot. Each crop presents its own concerns for the photographer and the model.



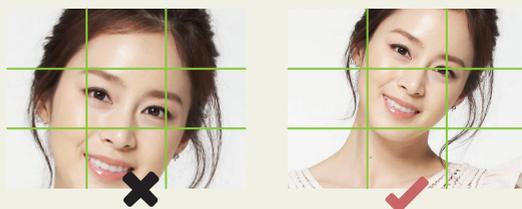
## DO NOT CROP BENDING AREMS

Avoid cropping right on areas where the body bends, it creates awkward proportions and it is visually unpleasant. In the example image (left), the areas in red should be avoided. Instead leave those areas inside the frame, or completely out.



## FOLLOW THE RULE OF THIRDS

When framing a subject's face, make sure that the eyes meet one of the Rule of Thirds' line intersections. Avoid cropping edges of the face such as the chin.



## SHOOT DIFFERENT WAYS

Give yourself options to edit later. Shoot from different angles and formats (vertical and horizontal). Use wider and tighter framing.



## CROP IN CAMERA

Plan your capture in camera, and shoot with a purpose. Cropping in post-production means losing resolution- since you're not cropping- as much as enlarging an area. When cropping tight, in camera, you'll have less depth of field, more blur in the background and this allows the subject to "pop" from the background.

# GROUP POSING GUIDE



There are a number of important factors to consider when creating group portraits. Most importantly- you do not want to simply "line up" your subjects if at all possible.

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## AVOID STRAIGHT LINES

Align the members of the group mixing head heights. This adds a dynamic feel to the composition.



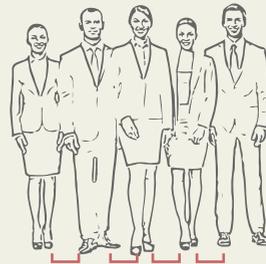
## FRONT AND BACK

Place the smaller members (kids, shorter and smaller-framed people) in the front of the group and bigger people (taller, larger-framed) people in the rear.



## CLOSENESS

Depending on the kind of group portrait that you are taking (family, business, sport teams, etc) you will pose them accordingly. Try to always keep the members of the group close to each other. If it is a family, or a group of friends, make sure they are touching and are connected physically. If it is a business group, or a group of people not related, keep them close together making sure that there are no uneven gaps between each other.



## BLINKING

If there are members of the group who blink often, have the entire group close their eyes, count to three together, and then open their eyes and smile at the same time.

# PHOTOGRAPHING WOMEN



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There are a number of important factors to consider when creating portraits of women. A key consideration is posing. You may have perfect light and a perfect exposure, however, if the pose is awkward, you'll have an unhappy subject.



## CURVES

Have your subject angled away from the camera to create more visual curves. No part of her body should appear as a straight line. People are usually bending all parts of their body, if the model is standing too straight- she'll look stiff & uncomfortable.

## ARMS

Arms and hands should be relaxed and away from the body. This creates a natural pose. Don't extend the hands forward, this can make them appear large.



## NECK

Ask your subject to stretch her neck up slightly, bring her head forward, and her chin down slightly. This helps to avoid skin wrinkles around the neck that can cause unpleasant shadows.

## LEGS

The subject should not be standing with her legs straight. Ask her to place more weight on one leg and the bend and relax the other. Crossing the legs also creates a pleasant visual line.



## FRAMING WITH HANDS

Ask the model to place one, or both, of her hands around her face, either caressing it, or slightly resting her face onto them. This pose works best in close-ups, since it frames the face.

## OVER THE SHOULDER LOOK

Creates a natural, enigmatic portrait. Ask the subject to look to different directions to create a natural look.



## LYING DOWN

Having the model lie down adds a sense of intimacy to a female portrait. Positioning them so that the body extends away from the camera adds a slimming effect.

## SITTING

When sitting, make sure the subject is bending her back slightly, and always keep one leg completely bent.

# PHOTOGRAPHING MEN



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There are a number of important factors to consider when creating portraits of men. A key consideration is posing. You may have perfect light and a perfect exposure, however, if the pose is awkward, you'll have an unhappy subject.



## SHARP ANGLES

Unlike female subjects, when working with a male model, it is recommended to emphasize lines and sharp angles (jaw, back, arms, etc).

## SHOULDERS

Ask your subject to stand tall, and square the shoulders by pushing up slightly and leaning towards the camera. The subject should keep their core tight, by breathing slowly and relaxing.



## JAW LINE

Have the subject push their chin out and angled down slightly. This helps by stretching the neck in a subtle way. Avoid pulling the chin back, as this can create the effect of a "double chin".

## LEGS

The subject should not be standing with his legs completely straight. Ask him to place more weight on one leg and bend and relax the other.



## HAND PLACEMENT

Good hand placement helps show confidence. It also makes the subject feel at ease. Ask him to try putting his whole hand in his pockets or leaving just the thumbs out. Watch out for "stiff hands".

## LEANING

This pose helps the subject relax, and creates strong visual leading lines.



## SITTING / ARMS

Ask your subject to extend one arm (or both), rest it on one leg while relaxing the other arm, and lean towards the camera. This helps by stretching the body, and it's a great pose to show clothing.

## ONE LEG UP

This pose can be done in a sitting or standing position. If standing have your subject rest the bending leg on a wall.

# IN-CAMERA FLASH



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Even though it has a bad reputation, the built-in flash, also known as "pop-up flash", can be very useful in a pinch. It can be minimally customized to improve the exposure.

## FLASH COMPENSATION

The camera doesn't always choose the optimal flash power when firing the pop-up flash. Flash compensation is similar to exposure compensation, but makes the photographs brighter or darker by adjusting the intensity of the flash rather than the exposure.

To adjust the flash compensation, you will need to be in Manual, Program, Aperture Priority, or Shutter Priority modes.

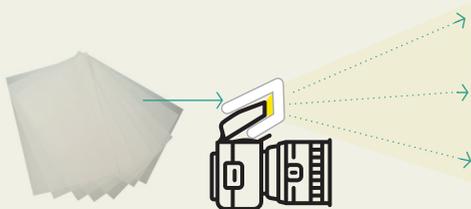


## DIFFUSING AND BOUNCING

The smaller the area that the light originates from, the harsher that light source will be. This is why the pop-up flash can be harsh on the subject.

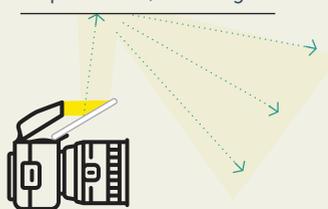
### DIFFUSING

Diffusing increases the size of the light source, therefore, softening it. A simple alternative is to hold or tape a tissue paper or a similar material to the flash.



### BOUNCING

To bounce the light, place a small white card at a 45 degree angle in front of the flash. The light will hit the card, bounce to the ceiling, and spread out, creating a soft light.



## FILL FLASH IN DAYLIGHT

Using the pop-up flash as a fill light, helps lightening dark shadows, brightening colors, and creating depth.

In bright situations, this technique can give the additional effect of darkening the background behind the subject,

## KEEP IN MIND

The pop-up flash gets its power from the camera battery. Since it is sharing its power source with the other functions of the camera, its strength is limited. Because of this, the built-in flash is not nearly as bright or as far-reaching as one from an external flash would be.

# LANDSCAPE CHECKLIST



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Landscape photography is a fantastic way to begin your photographic journey, as it tends to be slow and methodical. This allows you time to carefully consider each step in the process.

- SET ISO 100 / ISO 200**  
The lower the ISO, the less noise you'll get. This will make the image appear sharper.
- SHOOT AT f/8 - f/16**  
In landscape photography, it is best to increase the depth of field by using a smaller aperture.
- A / Av MODE or MANUAL MODE**  
Using Aperture Priority Mode or Manual Mode.
- USE A TRIPOD**  
If you are using a lens with a focal length of 100mm or longer, or if your shutter speed drops to 1/125th or slower, and you do not wish to raise the ISO.
- ACTIVATE MIRROR LOCK-UP**  
This will reduce vibration-induced motion blur that can occur during longer exposures. Use for shutter speeds between 1/8th - 4 seconds. (Longer than 4 seconds - not necessary)
- USE A REMOTE SHUTTER RELEASE**  
This helps to avoid motion blur that can occur when pressing the shutter release button, especially at slower shutter speeds (1/30th or slower).
- COMPOSE THE SUBJECT OFF-CENTER**  
Create an interesting composition. Follow composition rules. Composition rules that are often used in Landscape photography are The Rule of Thirds, Leading Lines, and The Golden Ratio.
- BE CAREFUL WITH LEADING LINES**  
Make sure that the leading lines drive the viewer's eyes toward the focal point of your landscape composition and not away from it.
- ADD FOREGROUND INTEREST**  
Placing a prominent object into the foreground, especially if it is an object of a known size, this adds depth and drama to a landscape photograph.
- FOCUS A THIRD INTO THE FRAME**  
Pick an object that is approximately 1/3 of the way into your scene and place your critical focus at this point. Doing so provides the maximum depth of field for the entire scene.
- USE EXPOSURE COMPENSATION IF NEEDED**  
Shoot a test photo. If the histogram is "clipped" at either end. Adjust the exposure with Exposure Compensation when using an auto mode or by changing the shutter speed in Manual mode.
- CHECK THE HISTOGRAM**  
Make sure that the curves for light tones and shadows are balanced- with no clipping.

# LANDSCAPE CREATIVE TIPS



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Be patient. Research for the best light, season, weather, etc. You may have to go to a location several times, on different days, or at different times of the day, to understand how the light interacts with the landscape. Light changes with the time of year- even in a few weeks. You may need extra effort to get the perfect shot.

## CATCH THE GOLDEN HOUR

Ideally, 30 minutes before sunrise until 10 minutes after and half an hour before sunset until 40 minutes after are the best moments to shoot landscapes. At this time of day, the contrast range drops, shadows deepen, textures become prominent, and the entire scene will taken on saturated hues of color.



## USE PEOPLE

Adding people to a landscape photograph has several benefits: It emphasizes scale, creates a story, and helps the viewer relate by having a human element. Make sure to position the person so that they stand out from the surroundings (bright clothing, silhouette, etc).



## USE REFLECTIONS

When the landscape reflects on a surface like water, it adds symmetry, and enhances the the magnitude and dynamics of the scene. Calm days work better than windy days, since the water will give a smoother reflection on the glassy surface.



## CHANGE YOUR POINT OF VIEW



We are used to seeing everything at eye level. Positioning your camera from a high point of view or near the ground gives a creative touch.

## DON'T WAIT FOR THE GOOD DAYS



Often times the sky before or after a storm can give you dramatic light and unusual clouds. Cloudy days, fog, snow, and rain can create amazing photos.

# MACRO PHOTOGRAPHY



Macro photography requires specialized skills. However, the first step is your selection of proper equipment. You can't begin your journey of learning macro photography techniques, without knowing what gear you'll be using to apply those techniques.

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## MACRO LENS



- They are designed to shoot at a **close distance from the subject**, but they can also work as regular lenses.
- A macro lens will have 1:1, or 1x magnification.
- The longer the focal length of the lens, the more working distance you'll have between the camera and the subject to achieve 1:1 magnification.

## CLOSE-UP LENSES



- They are technically lenses, but work more like a filter. Just screw it onto the front of your lens.
- They work by **reducing the minimum focusing distance of your lens**. You can focus more closely to the subject.
- With these lenses, the longer the focal length of your main lens, the more magnification you will get.

## EXTENSION TUBES



- They increase the extension of your lens. The **tube moves the lens forward**- further away from the camera's focal plane, and therefore closer to the subject. That creates more magnification and closer focusing.
- Depending on the lens, you can focus closer than a close-up lens, thus "almost" turning your lens into a macro lens.

## REVERSED LENS RING



### NORMAL LENS



### REVERSED LENS



- They work by turning the lens around. This puts the front element of your lens now facing the camera body. This way the lens works in reverse: it magnifies the subject to almost 3x life-size reproduction depending on the lens.
- One side of the ring attaches to the front of the lens and the other side attaches to the camera lens mount.
- It is one of the most affordable techniques. However, it does expose the rear of the lens elements.

# NIGHT PHOTOGRAPHY



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Night photography requires proper equipment, and some knowledge on technique. However, as you begin to explore night photography- pay special attention to your choice of subject, especially the artificial light aswell as the light left in the sky.

## EQUIPMENT and SETTINGS



### CAMERA

For some night scenes, like those with bright lights (cities, busy streets) you may need a lens hood to avoid unwanted lens flares.



### TRIPOD

For night photography, you have to use a slow shutter speed. A tripod will help steady the camera and avoid blur created by camera shake.



### REMOTE SHUTTER RELEASE / SELF TIMER

Pressing the shutter release button can cause camera shake. Using a remote release, or the self timer, helps you avoid this.

### A / AV APERTURE PRIORITY MODE

f/11 is a good place to start. Manual mode works well (if you are familiar with it). If you want more depth of field close down the aperture.

## CAPTURING MOTION



If you want to show movement, without blur, you need a faster shutter speed. This means a larger aperture and a higher ISO setting. For pictures with motion blur, you need to use a slower shutter speed. To keep the static objects sharp and in focus, you need to use a tripod and/or a remote shutter release. Architecture generally photographs best closer to dusk than in the dead of night.

## GENERAL EXPOSURE GUIDE -at f/11-

	ISO 100	ISO 200	ISO 400
Cityscape	20 sec	10 sec	5 sec
Scenes with reflections on water	30 sec	15 sec	8 sec
Neon signs	2 sec	1 sec	1/2 sec
Christmas lights - outdoors	20 sec	10 sec	5 sec
Average outdoor lighting - wide	20 sec	10 sec	5 sec
Floodlit scene - outdoors	30 sec	15 sec	8 sec
Landscape by full moon light	30 mins	15 mins	8 mins
Landscape at twilight	1 min	30 sec	15 sec
Candlelight - indoors	1 min	30 sec	15 sec
Traffic light trails	30 sec	15 sec	8 sec
Fair rides	15 sec	8 sec	4 sec
Bonfire flames	2 sec	1 sec	1/2 sec
Fireworks	2-60 sec	2-60 sec	2-60 sec

## SPECIAL TECHNIQUES

# BIRD PHOTOGRAPHY



Bird photography is challenging on many levels. As a beginning bird photographer, it's a good idea to practice the fundamentals of exposure and focusing on a fast moving object.

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## CHOOSE THE RIGHT SHOOTING MODE



### **M** MANUAL MODE

ISO 200 and f/11 is a good place to start. Manual mode works best (if you are familiar with it), in situations where the birds are semi-still, for example, resting on a branch.



### **A /AV** APERTURE PRIORITY MODE

Start with an ISO 200/400 and the widest aperture your lens has. This will allow a faster shutter speed to freeze the motion.

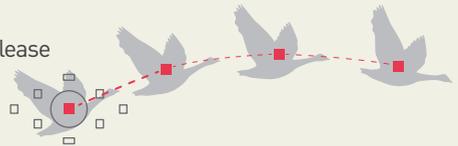


### **S /TV** SHUTTER PRIORITY MODE

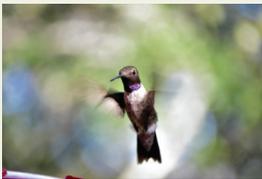
Set the ISO to 100 and a slower shutter speed: start with 1/30" to 1/125". Adjust to a faster shutter speed- depending on the level of blur that you want.

## KEEP THE RIGHT FOCUS POINT

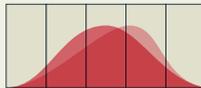
If your camera allows it, select the central focus point, and the focus tracking mode. Keep the shutter release button half press, as you follow the motion of the bird. Keep the focus on the same spot, and shoot when you like the composition or the background.



## MIND THE BACKGROUND - CHECK THE HISTOGRAM



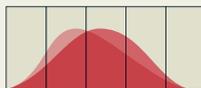
### FOLIAGE BACKGROUND



If the background foliage is in the sunlight the histogram should peak toward the middle. If the foliage is in shadows- the peak will be off-center to the left. If not, move the exposure compensation one stop negative.



### SKY BACKGROUND



Clear blue skies tend to show a centered peak in the histogram. If the sky is cloudy, the peak will slide off-center to the right. If not, up one stop of positive exposure compensation.

# PHOTOGRAPHING MOVING WATER



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Photographing moving water is an exercise in technique and aesthetics. In order to have a successful "moving water" shot. You want some aspect of the photograph to be sharp and in focus.

## FREEZE MOTION



## BLUR MOTION



### USE A TRIPOD

#### FAST SHUTTER SPEED

Meter the scene and set the correct proper exposure. If the shutter speed is less than  $1/250\text{sec}$ , use a larger aperture or increase the ISO until the shutter speed is fast enough.

\* If the scene still looks blurry, you may have to wait until the lighting conditions are better.

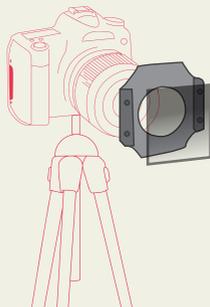
### USE A TRIPOD + REMOTE SHUTTER RELEASE

#### SLOW SHUTTER SPEED

Meter the scene and set the correct proper exposure. If the shutter speed is more than 1-5sec, use a narrower aperture or decrease the ISO until the shutter speed is 1sec or less (depending on the scene).

\* If the water is still not blurred enough and you can't decrease the aperture any further, you may have to wait until the lighting conditions become darker.

## USING A NEUTRAL DENSITY FILTER



#### COMPOSITION COMES FIRST

It will be very hard to see the scene once the filters are placed. Compose the scene and then attach the filter.

#### FOLLOW THE CHART

Compose, meter and focus the scene. Attach the filter, and adjust the exposure as specified by the ND filter guide.

# PHOTOGRAPHING SUNSETS



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A great sunset photograph typically requires three things. 1) A great sunset, which usually means some cloud cover. 2) A proper exposure in your camera. 3) Some type of foreground interest.

## BASIC SETTINGS

### MANUAL MODE

Is the best option to have complete control over the shot. Set the ISO and aperture, and then adjust the shutter speed for a proper exposure. Slight underexposure often works best.

### APERTURE

It is best to go with smaller aperture such as f/11 or f/16. This way the image will be sharp from close up- and off into the far distance.

### SHUTTER SPEED

1/60 sec or faster is an ideal starting point. Take a test shot and then adjust the shutter speed once the aperture and ISO are set. If the shutter speed is slower than 1/30th - use a tripod.

### ISO

Go low. ISO 100 will ensure clear images without any grain or noise. If shooting the afterglow, post sunset, use ISO 200, 400 or 640 as the light intensity drops.

## GET THE GEAR - OPTIONAL



A graduated neutral density filter will help balance the exposure of the bright sunset, against a backlit subject in the foreground (a portrait, an object, etc). The filter will help you capture detail in the foreground subject.

A tripod is helpful to slow the process down, get the horizon line straight, and help you check the corners of your frame for unwanted visual eye snags.

## TAKING THE PICTURE

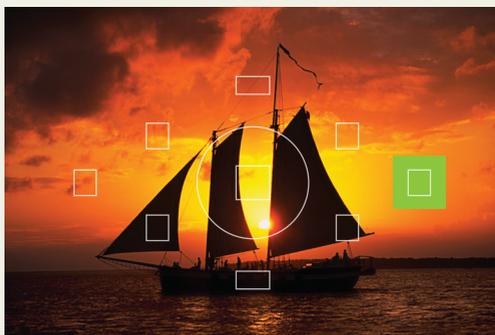
### FOREGROUND OBJECT

Adding foreground interest, gives depth to the image, adds context and dimension, and even helps to tell a story that engages the viewer.

### THE ART OF METERING

Set your Metering Mode to Spot. Pick a mid-tone area away from the sun to take your meter reading. See top example image **A - GREEN BOX**.

In example **B**, a dark area was the metering point. This made the camera overexpose the image. In example **C**, the sun was the metering point. This made the camera underexpose and darken the scene.



# SOCIAL MEDIA - IMAGE SIZES\*



When uploading photographs to the various social media websites- each site has it owns rules and guidelines regarding the file size. While these requirements can change- this list gives you an idea of how to size your images and what to look for.

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In red: Images you can upload and have full control on the size and cropping.

	<b>FACEBOOK</b>	<b>Cover photo</b>	1200 x 675 px (displays 820 x 312px on desktop and 640px by 360px on mobile)
		<b>Profile</b>	170 x 170px (upload 340x340px to get better quality)
		Shared link	476 x 249px
		<b>Timeline</b>	476 x up to 714px (3:2 ratio)
	<b>GOOGLE +</b>	<b>Cover photo</b>	2120 x 1192 px (min size is 480 x 270px)
		<b>Profile</b>	250 x 250px
		<b>Newsfeed</b>	502 x 892px (max height)
	<b>LINKEDIN</b>	<b>Cover photo</b>	1536 x 768 px (max 2MB)
		<b>Profile</b>	130 x 130 px (400 x 400px is recommended - max MB)
		Shared Img	520px wide (400 x 400px is recommended - max MB)
	<b>FLICKR</b>	Each photograph can be up to 200 MB. Photos can be no more than 31.25 times wider than they are tall. Native file formats are .JPEG, .GIF (non-animated), and .PNG You can upload in any other format, the files will be converted to .JPEG	
	<b>YOUTUBE</b>	<b>Channel cover</b>	2560 x 1440 px (min 1546 x 423px)
		<b>Video thumbnail</b>	1280 x 720 px (min 640 x 360px)
		<b>Channel icon</b>	800 x 800px
	<b>TWITTER</b>	<b>Header photo</b>	1500 x 500 px
		<b>Profile</b>	400 x 400px
		Tweeted Img	1024 x 512px (min 440 x 220px - Any height allowed / expands when clicked)
	<b>PINTEREST</b>	<b>Header photo</b>	160 x 160px (upload 600 x 600px for best quality)
		Pins	736 height x infinity (displays 236 x scaled height)
		Board cover	Displays square img. Min 100 x 100px

\* As of July 2017