

An abstract graphic consisting of several overlapping, flowing waves in various shades of blue, from light to dark, set against a solid blue background. The waves originate from the top left and curve across the upper half of the image.

# INTRODUCTION TO PHOTOGRAPHY

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TIPS AND TECHNIQUES  
FOR BETTER PHOTOGRAPHY

# PHOTOGRAPHY

- GREEK FOR “PAINTING WITH LIGHT”
- CAN BE CONSIDERED BOTH AN ART AND A SCIENCE
  - PHOTOGRAPHY IS A SCIENCE, BECAUSE THERE ARE BASIC PRINCIPLES OF PHYSICS THAT GOVERN SUCCESS
  - PHOTOGRAPHY IS ART BECAUSE ITS BEAUTY IS SUBJECTIVE



FIRST PHOTOGRAPH TAKEN BY JOSEPH NICÉPHORE NIÉPCE IN FRANCE.  
IN 1826, ON A BITUMEN COATED ALUMINUM PLATE

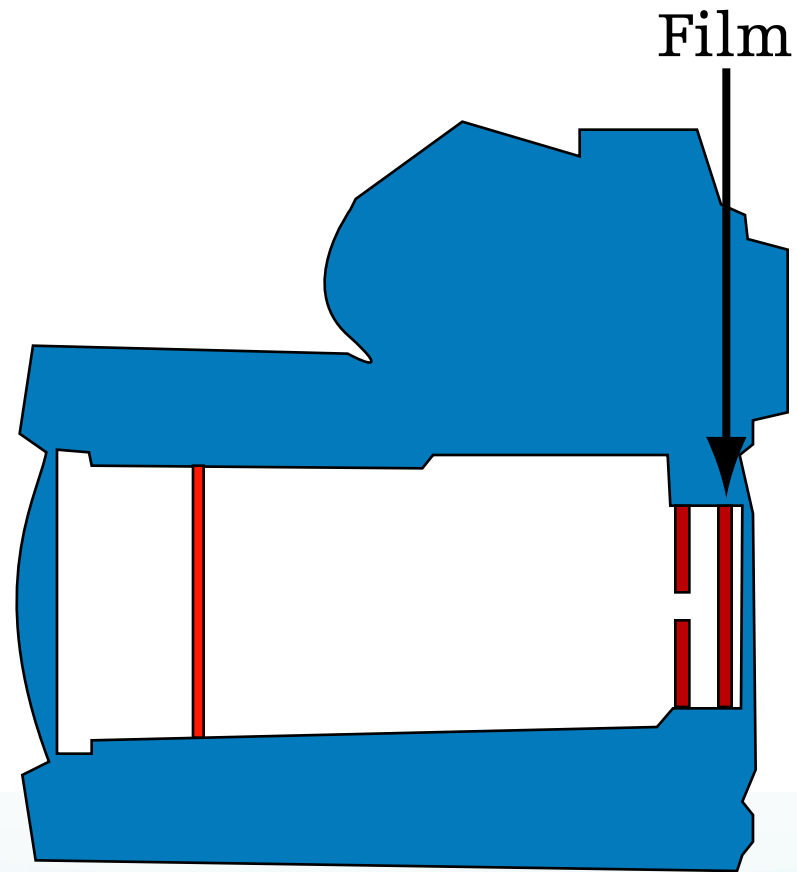
# EXPOSURE

TIPS AND  
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# STOPS

- THE AMOUNT OF LIGHT THAT STRIKES THE FILM/CHIP IS MEASURED IN STOPS AND IS ALSO KNOWN AS EXPOSURE VALUE (Ev)
- A DIFFERENCE OF 1 STOP IS A DOUBLING OR HALVING OF THE LIGHT MAKING THE IMAGE
- A STOP IS USED TO MEASURE THE DIFFERENCES IN Ev OF APERTURES, SHUTTER SPEEDS AND FILM SPEEDS
- “FAST” MEANS THE CAMERA CAN EXPOSE A PHOTO QUICKLY

# FILM SPEED



# FILM SPEED

- FILM SPEED IS A MEASURE OF THE SENSITIVITY OF THE FILM OR SENSOR IN A CAMERA.
- IT IS MEASURED IN VALUES USING AN INTERNATIONAL ORGANIZATIONS OF STANDARDS (ISO) NUMBER. USED TO BE MEASURED IN AMERICAN STANDARDS ASSOCIATIONS (ASA) NUMBERS
- ISO NUMBERS ARE USED IN BOTH FILM AND DIGITAL CAMERAS

# FILM SPEED

- ISO NUMBERS COME IN A WIDE RANGE, BUT STANDARD NUMBERS ARE 50, 100, 200, 400, 800, 1600, AND 3200
- ISO NUMBERS ARE LINEAR IN THEIR RELATIONSHIP
- THE HIGHER THE ISO NUMBER, THE MORE SENSITIVE THE FILM/SENSOR AND ALSO THE MORE NOISE OR GRAIN IN THE IMAGE



# FILM SPEED

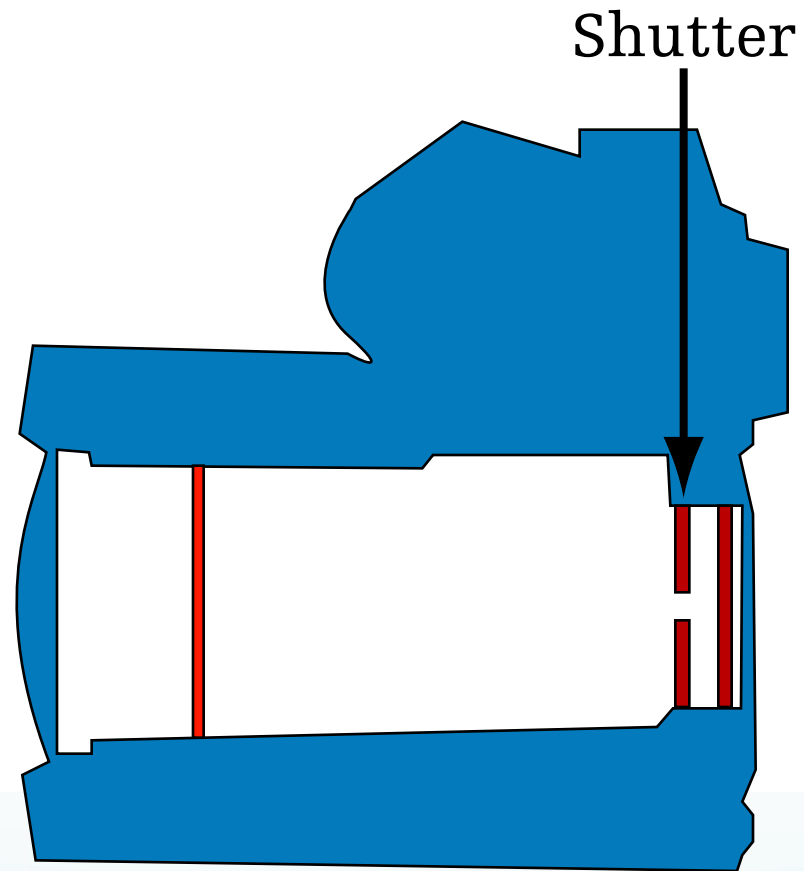


LOW ISO



HIGH ISO

# SHUTTER SPEED



# SHUTTER SPEED

- CONTROLS THE AMOUNT OF TIME THE SHUTTER OR CURTAIN IS OPEN
- SHUTTER SPEED IS MEASURED IN FRACTIONS OF SECONDS
- DEPENDING ON THE CAMERA, IT MAY SHOW THE SHUTTER SPEED WITHOUT THE NUMERATOR, I.E. 250 INSTEAD OF 1/250

# SHUTTER SPEED

- COMMON SHUTTER SPEEDS ARE  
1, 1/2, 1/4, 1/8, 1/15, 1/30, 1/60,  
1/125, 1/250, 1/500, 1/1000
- A DOUBLING OR HALVING OF THE  
TIME VALUE (Tv) REPRESENTS ONE  
STOP OF EV
- A FAST SHUTTER SPEED FREEZES THE  
ACTION OF AN IMAGE
- CONVERSELY, A SLOW SHUTTER SPEED  
BLURS THE ACTION OF AN IMAGE

# SHUTTER SPEED

FAST SHUTTER SPEED



SLOW SHUTTER SPEED



TIPS AND  
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# SHUTTER SPEED

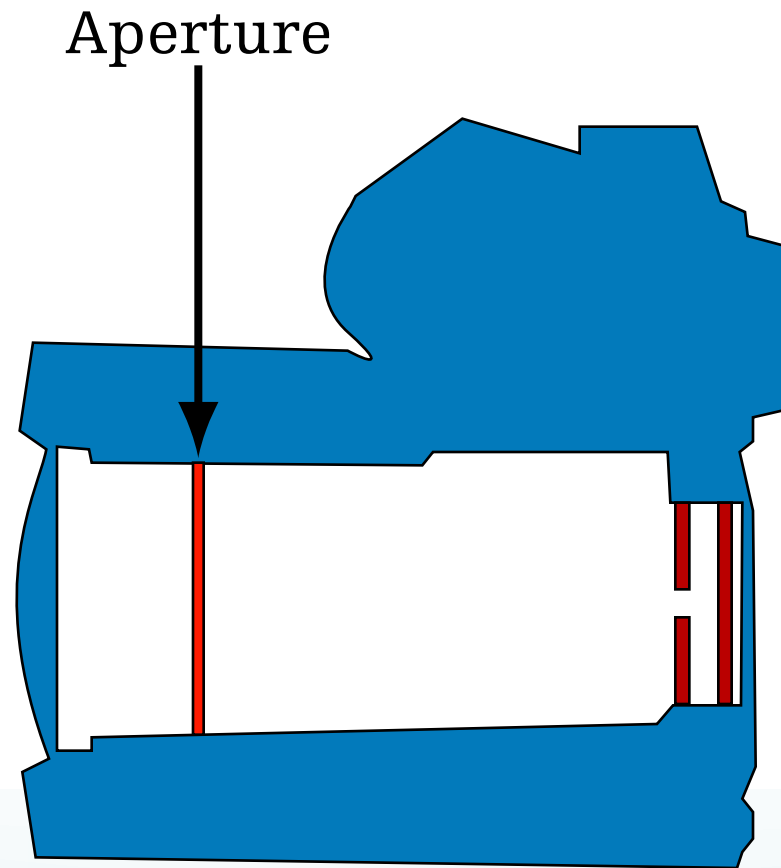
FAST SHUTTER SPEED



SLOW SHUTTER SPEED



# APERTURE

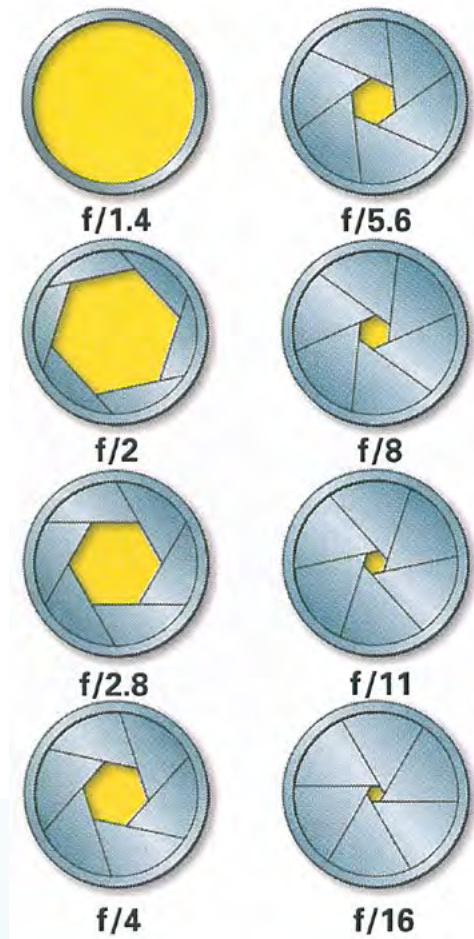


# APERTURE

- APERTURE IS THE SIZE OF THE HOLE IN THE DIAPHRAGM THAT ALLOWS LIGHT INTO THE CAMERA
- THE LARGER THE HOLE, THE MORE LIGHT THAT ENTERS THE CAMERA IN A GIVEN TIME
- APERTURE VALUES ( $A_v$ ) ARE MEASURED USING F-STOPS, SHOWN AS  $f/\#$  (I.E.  $f/16$ )

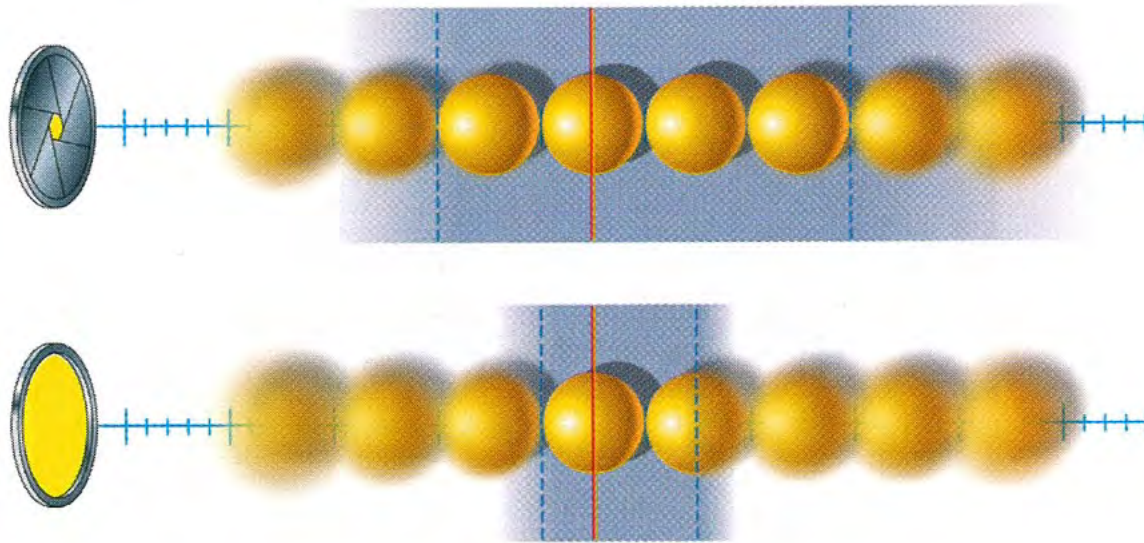


# APERTURE



- THE IMAGE AT LEFT SHOWS COMMON F-STOP VALUES AND HOW THEY APPEAR
- A CHANGE OF 1 F-STOP DOUBLES OR HALVES THE LIGHT ENTERING THE CAMERA
- SMALLER F-NUMBERS REPRESENT WIDER APERTURES, AND LARGER F-NUMBERS ARE SMALLER APERTURES

# APERTURE



- THE  $A_v$  CONTROLS THE AMOUNT OF DEPTH OF FIELD IN AN IMAGE
- THE WIDER THE APERTURE, THE MORE SHALLOW THE DEPTH OF FIELD, AND VICE VERSA

# Av & Tv TOGETHER

- THE WIDER THE APERTURE USED, THE LESS TIME – I.E. THE FASTER SHUTTER SPEED – IS NEEDED TO PROPERLY EXPOSE THE IMAGE
- CONVERSELY, THE SLOWER THE SHUTTER SPEED, THE SMALLER THE APERTURE NEEDS TO BE
- FOR ANY IMAGE, THERE ARE A NUMBER OF COMBINATIONS THAT WILL MAKE A CORRECT EXPOSURE

f-stop	1.4	2	2.8	4	5.6	8	11	16
Shutter speed	$\frac{1}{1000}$	$\frac{1}{500}$	$\frac{1}{250}$	$\frac{1}{125}$	$\frac{1}{60}$	$\frac{1}{30}$	$\frac{1}{15}$	$\frac{1}{8}$

# LIGHTING

- LIGHT IS THE ESSENTIAL INGREDIENT OF PHOTOS
- ONE OF THE SKILLS THAT SEPARATES PHOTOGRAPHERS FROM SNAP SHOOTERS IS THE ABILITY TO SOLVE LIGHTING PROBLEMS
- THERE ARE 2 PRIMARY FACTORS TO CONSIDER FOR LIGHT: DIRECTION AND COLOUR

# LIGHTING - DIRECTION

- THE DIRECTION THE LIGHT COMES FROM CAN MAKE THE IMAGE SEEM FLAT OR 3-DIMENSIONAL
- FRONT LIGHTING IS EASY TO PHOTOGRAPH, BUT IMAGES ARE GENERALLY FLAT
- TOP LIGHTING, SUCH AS FROM THE SUN OVERHEAD, ALSO MAKES THE IMAGE FLAT, AND SHADOWS ARE SHORT AND DARK
- SIDE LIGHTING WILL EMPHASIZE TEXTURE AND CONTOURS, AND CREATE LONG SHADOWS

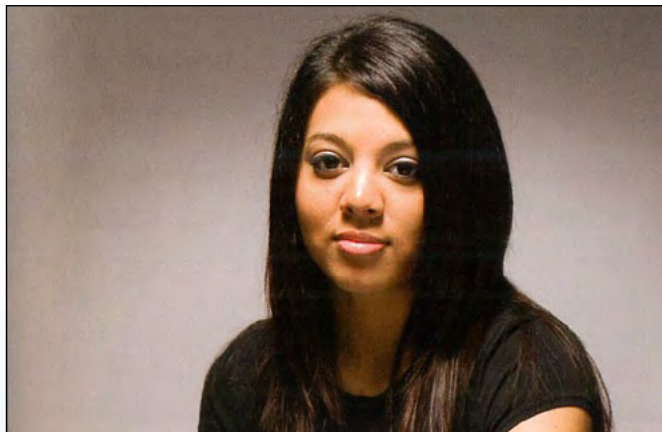
# LIGHTING - DIRECTION



FRONT LIGHTING



SIDE LIGHTING



TOP LIGHTING



BOTTOM LIGHTING

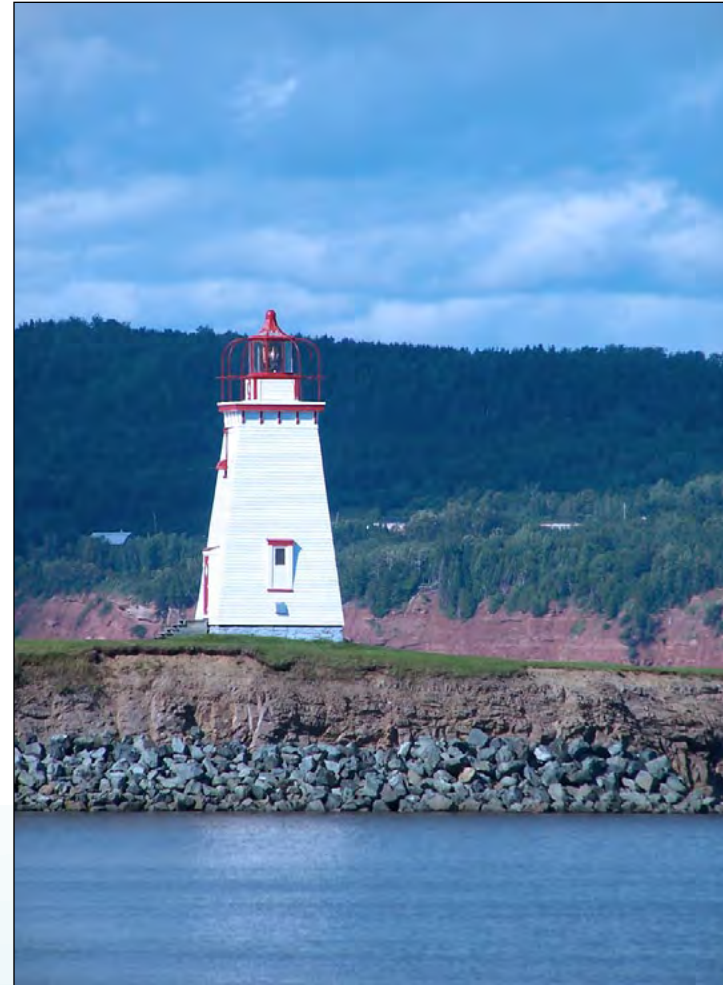
# LIGHTING - COLOUR

- THE COLOUR OF LIGHT IS MEASURED BY TEMPERATURE IN KELVIN (°K)
- THE COLOUR OF NATURAL LIGHT CHANGES THROUGH THE DAY
- HUMANS RESPOND PSYCHOLOGICALLY TO DIFFERENT COLOURS, THEREFORE THE COLOUR OF A PHOTO WILL AFFECT EMOTIONAL RESPONSES
- LIGHT THAT IS IN THE REDS, ORANGES AND YELLOWS IS SAID TO BE “WARM”. CONVERSELY, “COOL” LIGHT IS BLUE IN TONE

# LIGHTING - COLOUR



WARM LIGHTING



COOL LIGHTING



# LIGHTING - COLOUR

- WHEN TAKING A PHOTO WITH A DIGITAL CAMERA, THE WHITE BALANCE SETTING OF A CAMERA WILL AFFECT THE COLOUR CAST OF THE IMAGE, BALANCING THE LIGHTING OF THE SUBJECT
- TYPICAL WHITE BALANCE SETTINGS OF A CAMERA INCLUDE: TUNGSTEN, FLORESCENT, SHADE, SUNNY, CLOUDY, FLASH, AUTO AND MANUAL
- FILTERS CAN ALSO BE USED TO AFFECT THE COLOUR OF LIGHT IN THE IMAGE

# LIGHTING - COLOUR



FLASH/MID-DAY



TUNGSTEN



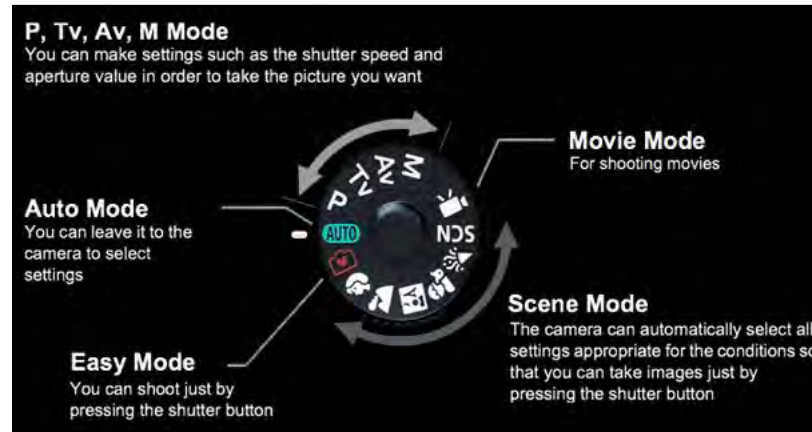
FLORESCENT



CLOUDY

# CAMERA SHOOTING MODES

- ALL DIGITAL CAMERAS HAVE VARIOUS MODES FOR SHOOTING



# CAMERA SHOOTING MODES

- SCENE MODES TAKE THE GUESS WORK OUT OF SETTING PROPER EXPOSURE
  - MODES INCLUDE PRESETS FOR TAKING PHOTOS IN A VARIETY OF SETTINGS SUCH AS AT NIGHT, ON THE BEACH OR SNOW, OR FOR PORTRAITS
- MANUAL MODES ALLOW FOR MORE CREATIVE CONTROL
  - A GREATER UNDERSTANDING OF CAMERA SETTINGS IS REQUIRED

# COMPOSITION

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# LENSES

- THE LENGTH OF A LENS IS MEASURED IN MILLIMETRES (mm), OR EQUIVALENT FOR POINT-AND-SHOOT CAMERAS
- LOW NUMBERS ARE CONSIDERED WIDE LENSES, WHILE HIGH NUMBERS ARE CONSIDERED LONG LENSES
  - A WIDE LENS, I.E., 18mm, IS USEFUL FOR LANDSCAPE PHOTOS
  - A LONG LENS, I.E., 300mm, IS USEFUL FOR CLOSE-UPS OF WILDLIFE
- HUMAN EYESIGHT IS EQUIVALENT TO ABOUT 50MM

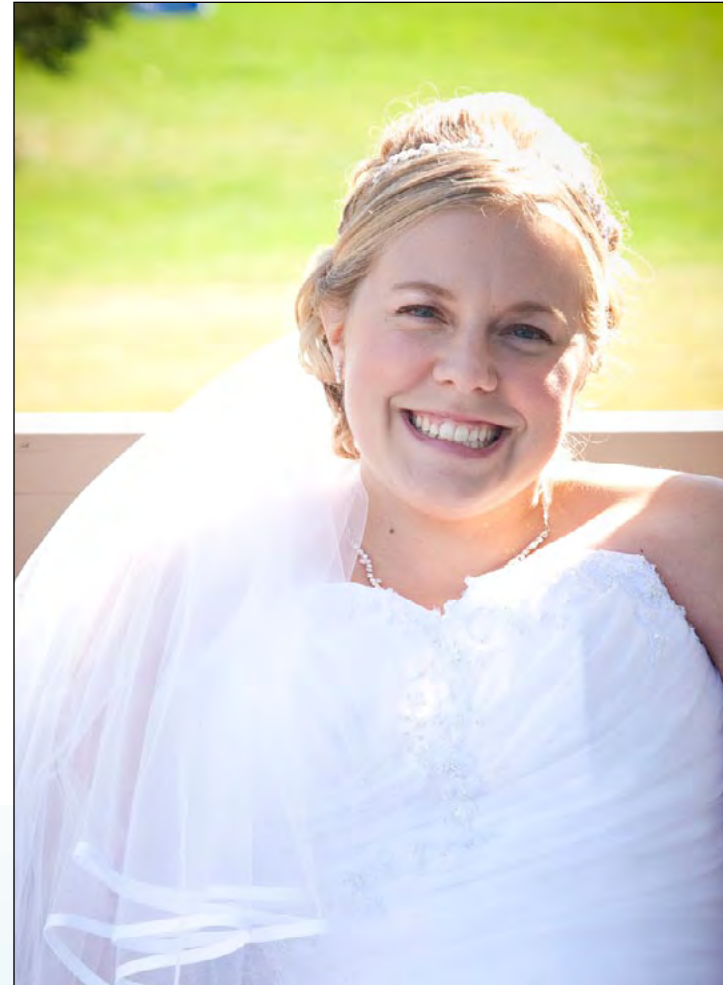
# DEPTH OF FIELD

- DEPTH OF FIELD (DoF) IS THE “ZONE OF ACCEPTABLE SHARPNESS”
- DOF IS CONTROLLED BY APERTURE AND DISTANCE TO SUBJECT
  - THE CLOSER THE SUBJECT, THE SMALLER THE DoF
  - THE WIDER THE APERTURE, THE SMALLER THE DoF

# DEPTH OF FIELD



DISTANT - DEEP DoF



CLOSE - SHALLOW DoF



# DEPTH OF FIELD



SMALL APERTURE - DEEP DoF



LARGE APERTURE - SHALLOW DoF

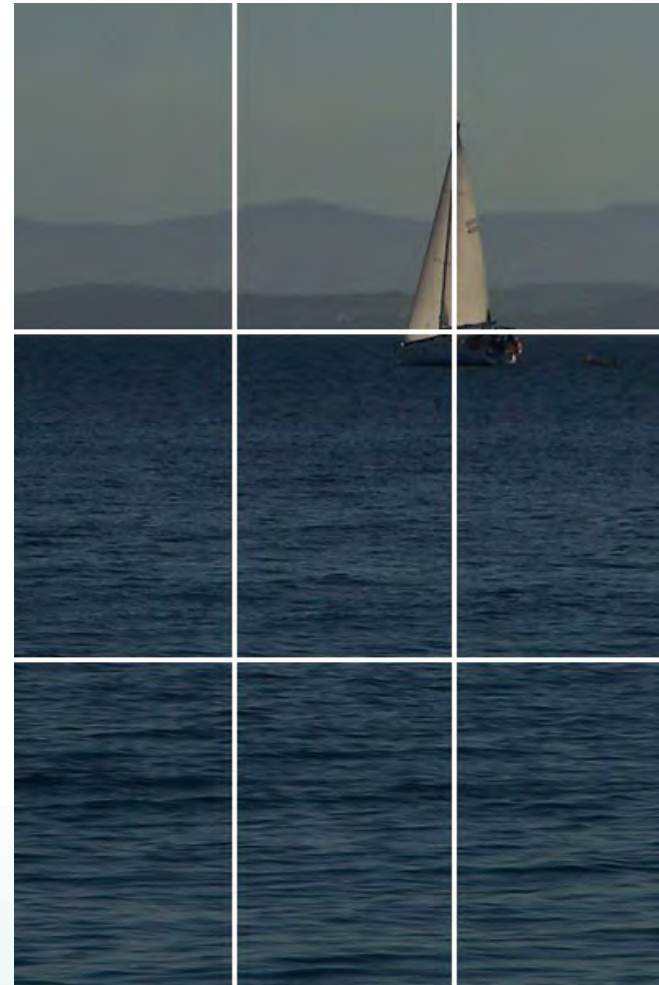
# THE RULE OF THIRDS

- THE “RULE OF THIRDS” STATES THAT WHEN COMPOSING YOUR PHOTO, PLACE THE CENTRE OF INTEREST AT A JUNCTION OF THE LINES THAT TRISECT THE IMAGE



# THE RULE OF THIRDS

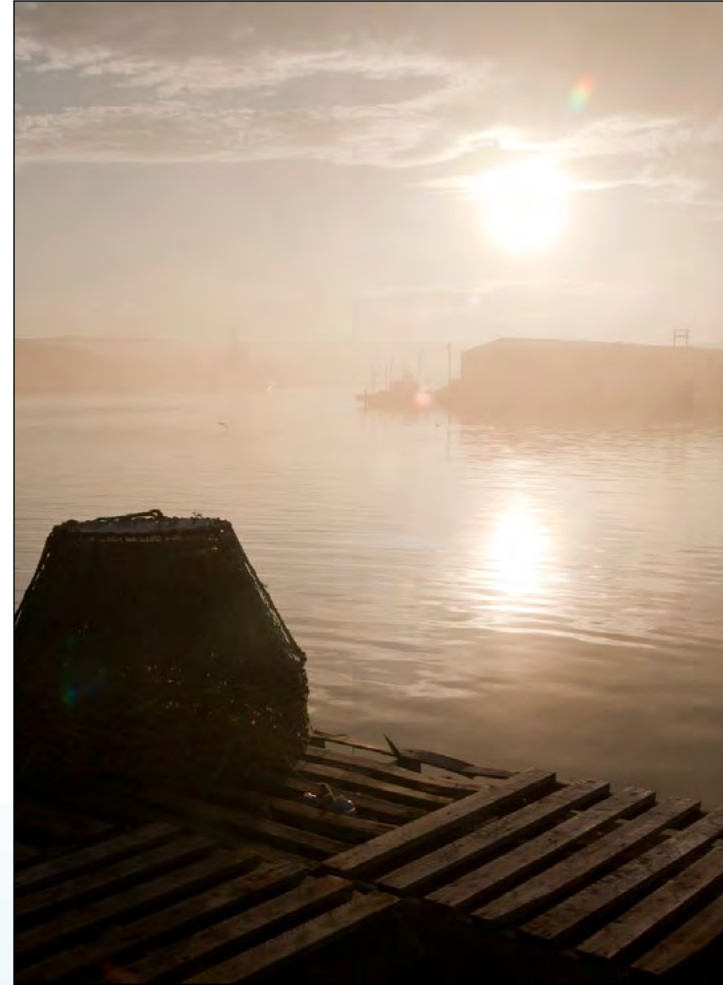
- ALSO, WHEN COMPOSING LANDSCAPE SHOTS, THE HORIZON LINE SHOULD BE ON ONE OF THE INTERSECTING LINES



# FRAMING

- FRAMING IS USING A FOREGROUND OBJECT TO “FRAME” THE SUBJECT OF THE PHOTO
- THE FRAME SHOULD BE APPROPRIATE TO THE SUBJECT
- THE FRAME SHOULD HAVE ITS OWN AESTHETIC VALUE
- RENDER THE FRAME SHARPLY, OR BLUR IT AWAY

# FRAMING



TIPS AND  
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# FILL THE FRAME

*IF YOUR PICTURES AREN'T GOOD ENOUGH, YOU'RE NOT CLOSE ENOUGH.*

ROBERT CAPA, WORLD WAR II PHOTOJOURNALIST

- IF YOU CAN'T GET CLOSER TO YOUR SUBJECT, USE A LONGER LENS TO FILL THE FRAME
- FILLING THE FRAME REFERS TO THE PRIMARY SUBJECT, NOT EXTRANEIOUS OBJECTS

# FILL THE FRAME



TIPS AND  
TECHNIQUES  
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PHOTOGRAPHY

# PORTRAIT TECHNIQUES

- THE SUBJECT SHOULD FACE INTO THE IMAGE SO THAT THERE IS MORE SPACE IN FRONT THAN BEHIND





# PORTRAIT TECHNIQUES

- SUBJECTS USUALLY SHOULDN'T BE SQUARE ON TO THE CAMERA



TIPS AND  
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# LANDSCAPES

- TRY TO INCLUDE AN OBJECT TO CREATE SENSE OF SCALE



# LANDSCAPES

- HORIZON LINE SHOULD BE PLACED TO EMPHASIZE EITHER THE SKY OR THE LAND



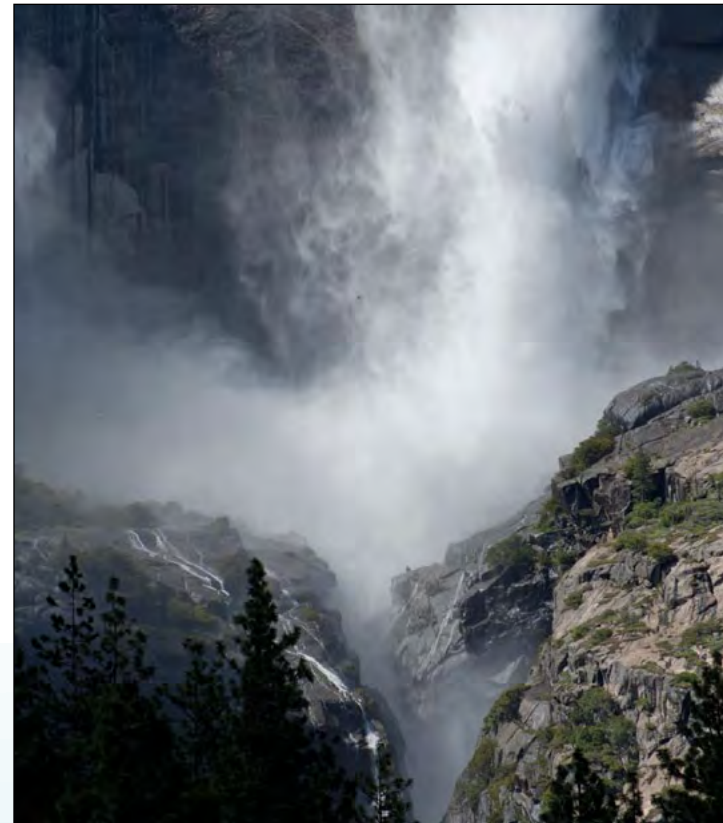
# LANDSCAPES

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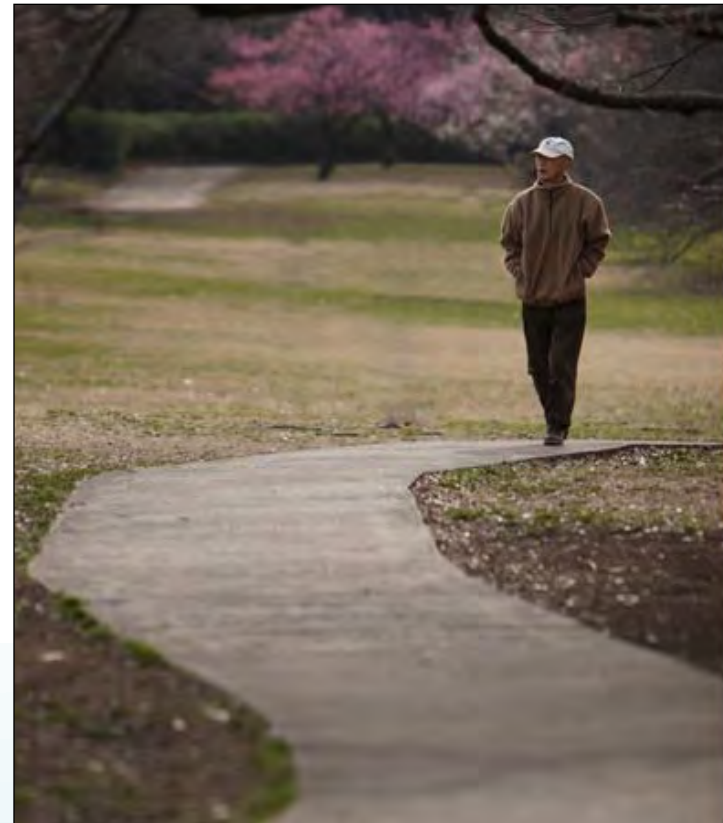
# LANDSCAPES

- FOCUS ON A DETAIL WITHIN THE SCENE TO ADD INTEREST



# LANDSCAPES

- TRY TO USE A LINE THAT WILL LEAD THE VIEWERS EYE INTO THE PICTURE



# FINAL TIP

- THERE ARE NO RULES IN PHOTOGRAPHY

- THE SUBJECT SHOULD FACE INTO THE IMAGE SO THAT THERE IS MORE SPACE IN FRONT THAN BEHIND

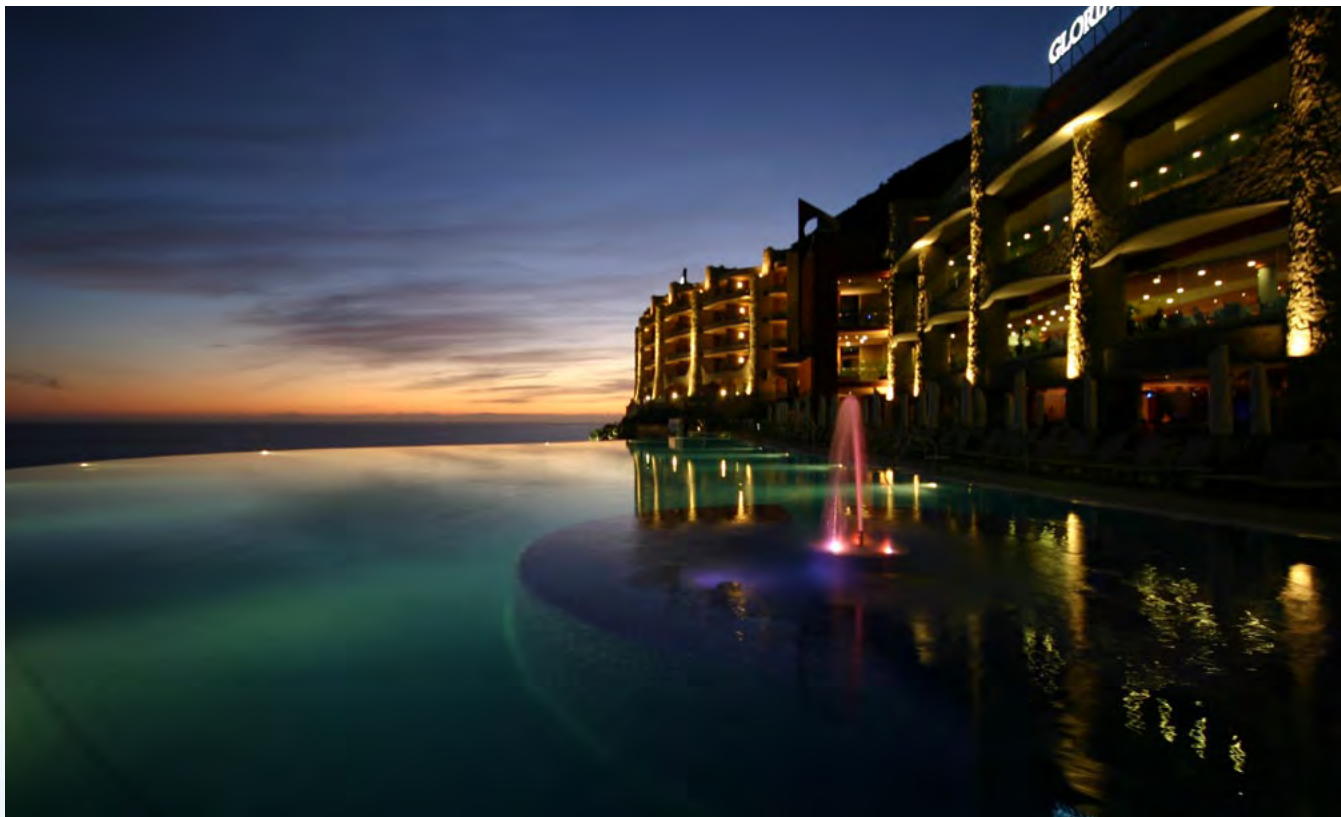




- SUBJECTS USUALLY SHOULDN'T BE SQUARE ON TO THE CAMERA



- HORIZON LINE SHOULD BE PLACED TO EMPHASIZE EITHER THE SKY OR THE LAND



An abstract graphic consisting of several overlapping, wavy lines in various shades of blue, ranging from light to dark. The lines flow from the top left towards the right, creating a sense of movement and depth. The background is a solid, medium blue color.

THE END

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TIPS AND TECHNIQUES  
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