

# PHOTOGRAPHY 101

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## 2 TOPICS

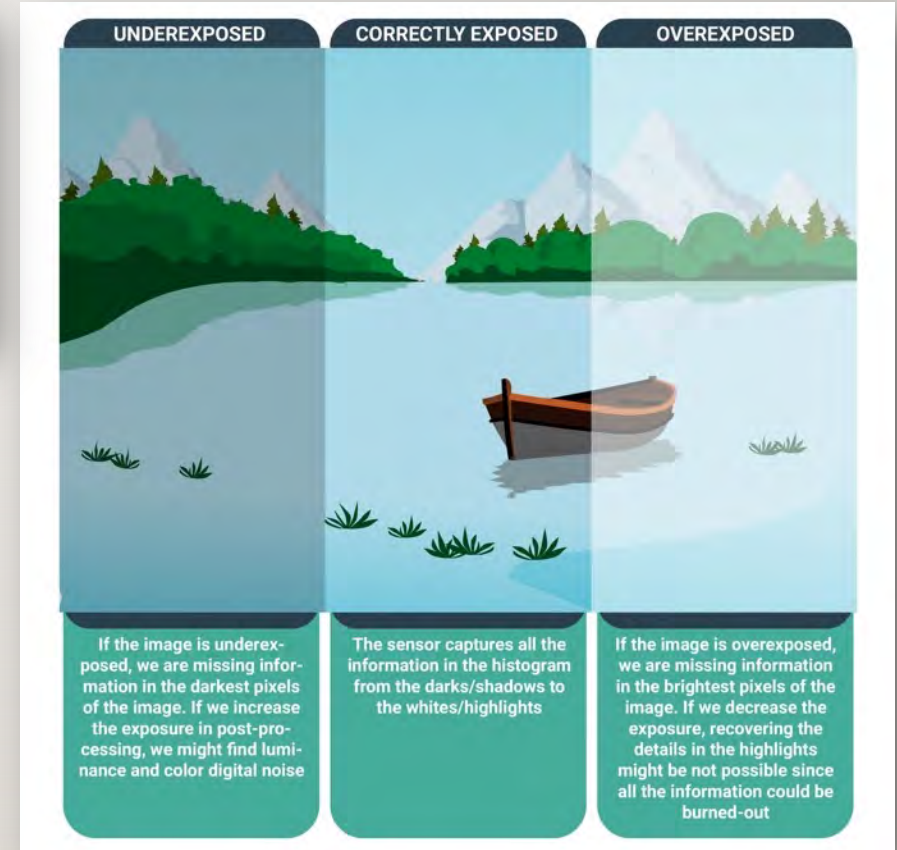
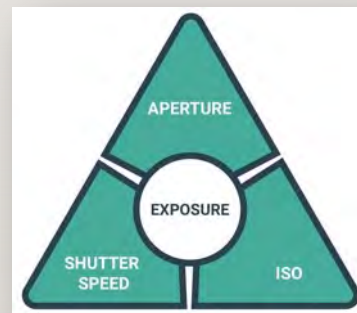
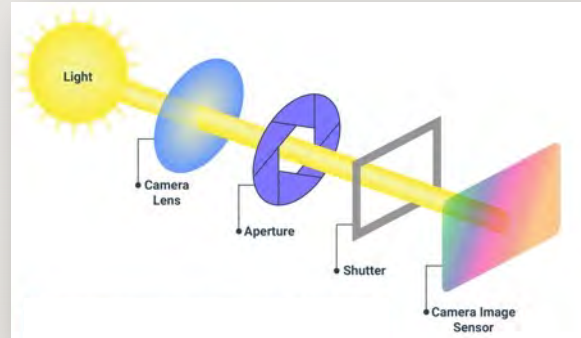
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- Exposure Triangle
  - Aperture
  - Shutter Speed
  - ISO
- Compositional Techniques
  - Rule of Thirds
  - Portraiture Tips
  - Landscape Tips
- Photo Checklist
- References



# 3 WHAT IS EXPOSURE?

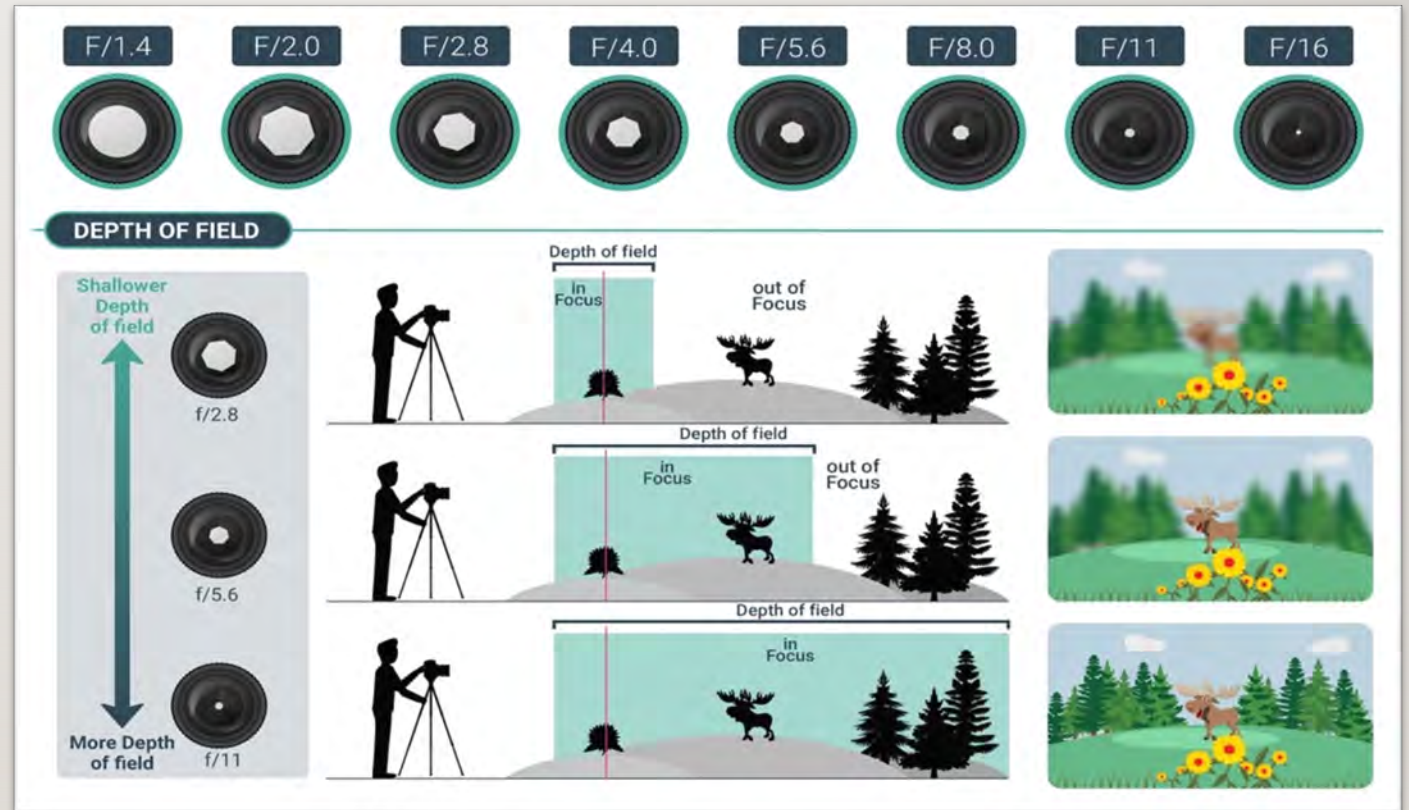
- Exposure is the amount of light collected by the camera sensor
- Three factors control exposure (aka “The Exposure Triangle”)
  - Aperture
  - Shutter Speed
  - ISO
- All three must be balanced to provide a properly exposed photo



<https://capturetheatlas.com>

# 4 APERTURE

- Aperture refers to the hole created by the bladed diaphragm within a lens
- Depth of field (DOF) is the amount of area in focus
- Aperture defined by an f-stop value
  - Larger value = smaller hole = less light = deep DOF
  - Smaller value = larger hole = more light = shallow DOF
  - F-stop value = lens focal length / hole diameter
- Lenses with apertures larger than f/2.8 are often referred to as “fast” lenses
- Aperture priority mode (“A” or “Av”) gives user control over aperture and lets the camera choose the shutter speed and ISO
  - Portraits
  - Landscapes



<https://capturetheatlas.com>

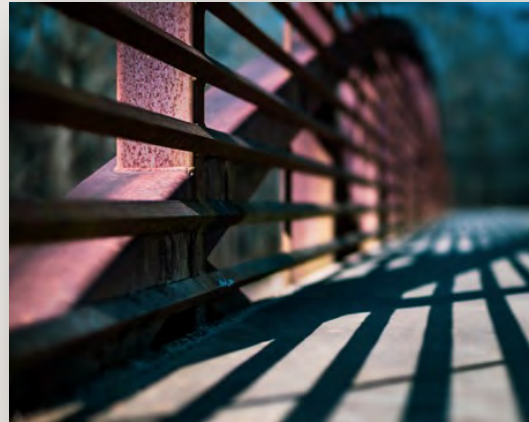
Aperture Controls Depth of Field

# 5 LARGE APERTURE (SMALL F-STOP) EXAMPLES

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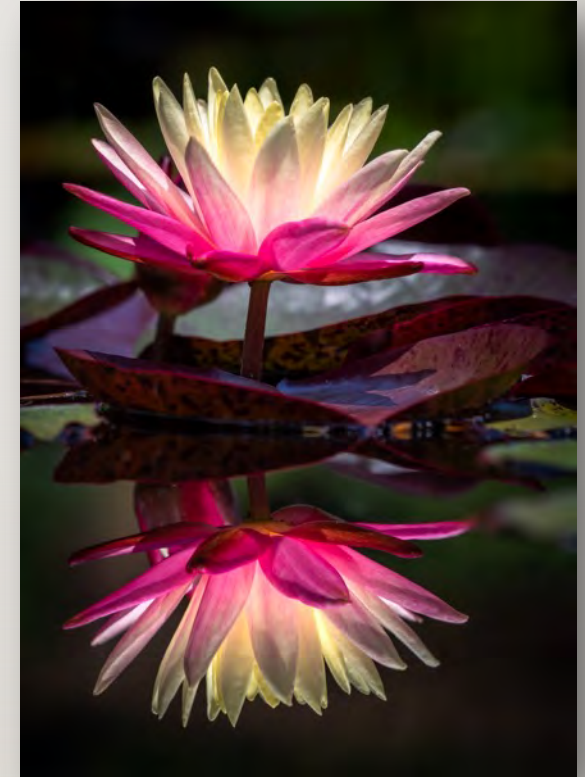
f/2.2



f/1.2



f/1.8



f/5.6

## 6 SMALL APERTURE (LARGE F-STOP) EXAMPLES

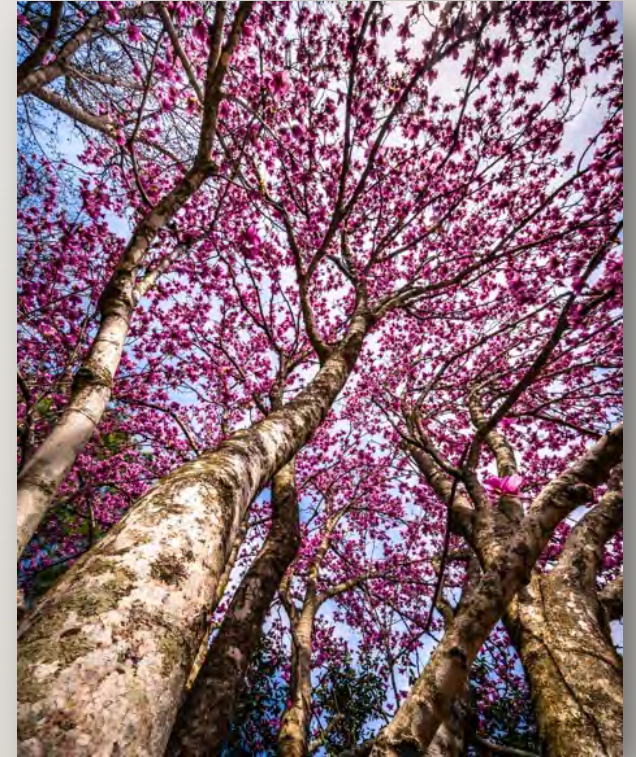
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f/22



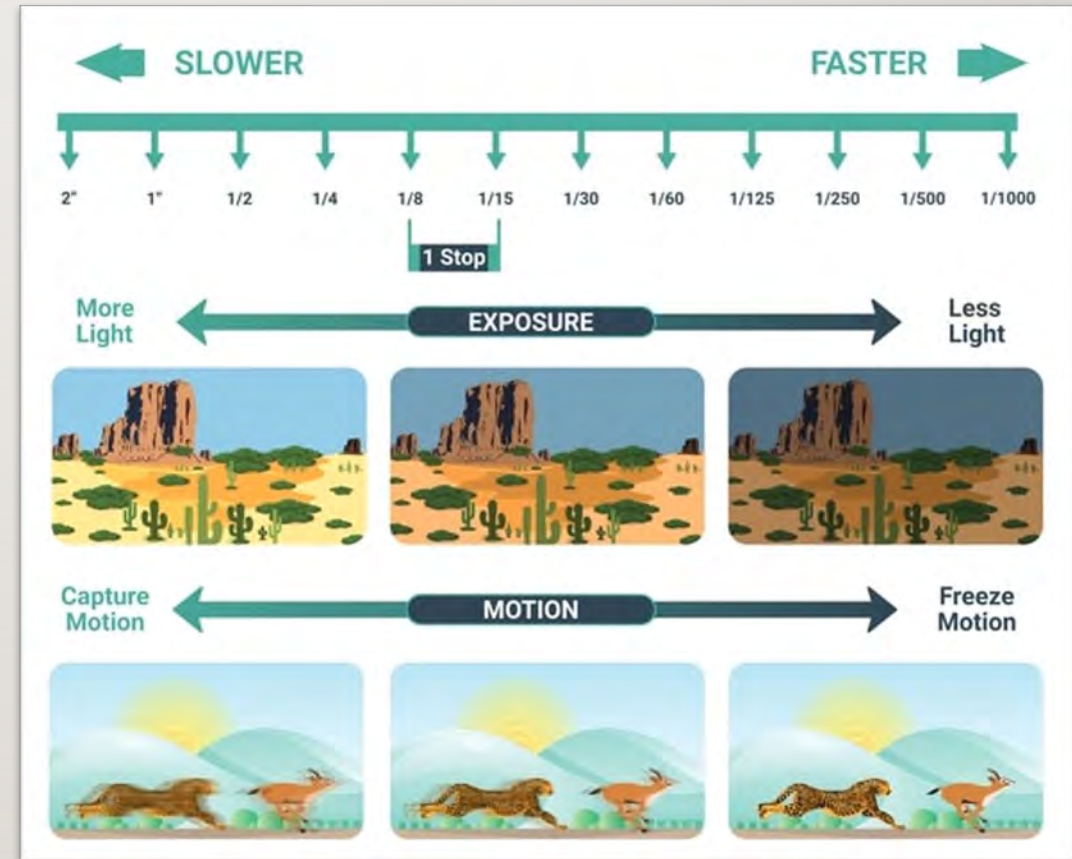
f/11



f/16

# 7 SHUTTER SPEED

- Shutter speed controls how long the sensor is exposed to light
- Measured in seconds
- Slow shutter = more light = motion blur
- Fast shutter = less light = freeze motion
- Shutter priority mode (“S” or “Tv”) gives user control over shutter speed and lets the camera choose the aperture and ISO
  - Sports
  - Wildlife



<https://capturetheatlas.com>

Shutter Speed Controls Motion

# 8 FAST SHUTTER SPEED EXAMPLES

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1/1000 sec

1/2000 sec



1/2000 sec



1/1600 sec



# 9 SLOW SHUTTER SPEED EXAMPLES



20 sec



86 sec



10 sec



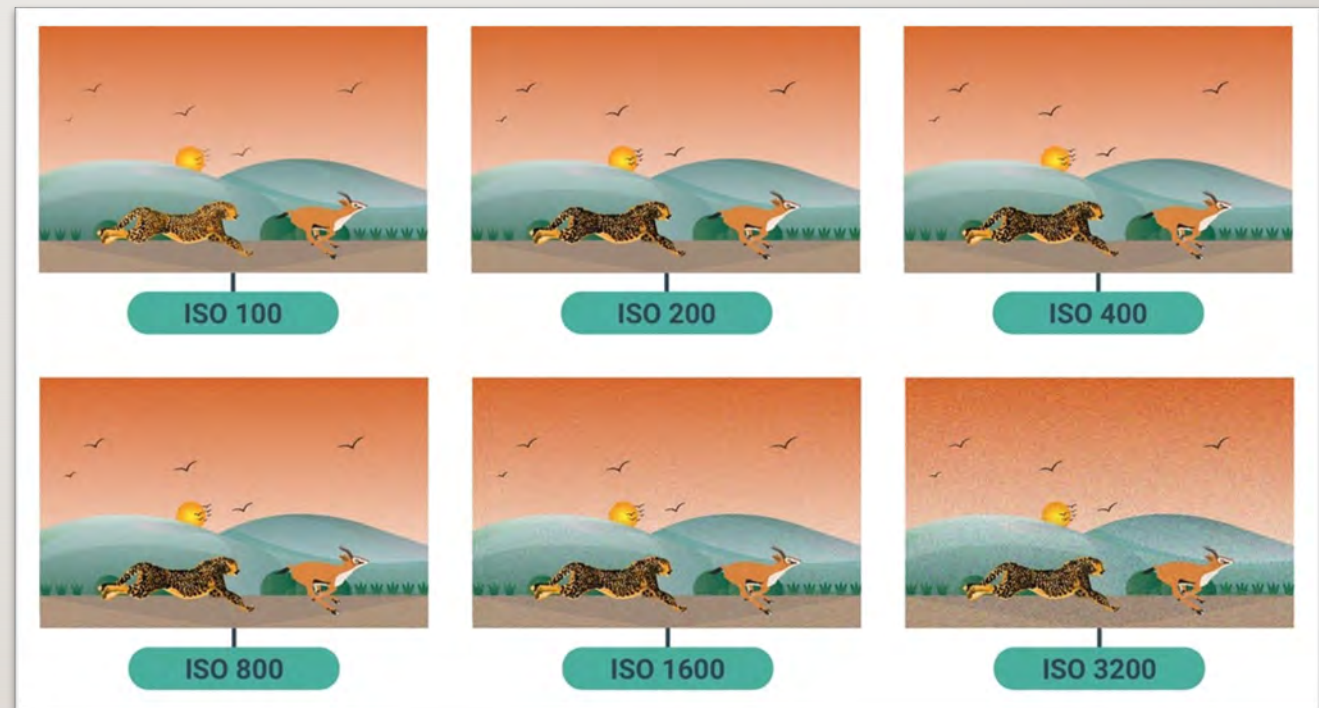
25 sec



1 sec

# 10 ISO

- ISO has different meanings between film and digital
  - Film ISO refers to the film's sensitivity to light
  - Digital ISO refers to the amplification of the signal from the sensor
- Low ISO values produce highest quality images (preferred)
- High ISO values introduce grain (film) or noise (digital)
  - High shutter speeds
  - Low light conditions



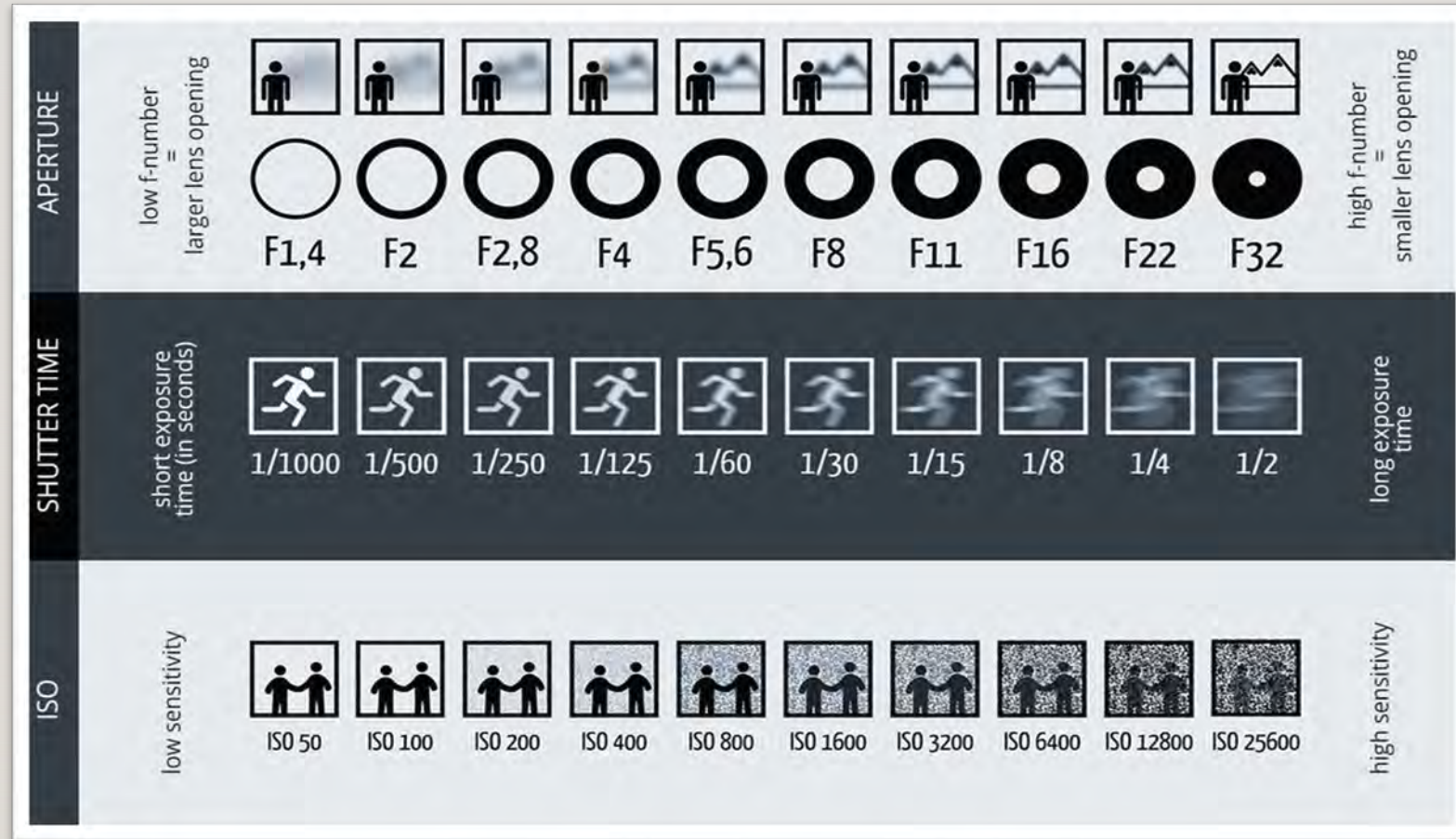
<https://capturetheatlas.com>

# II ISO EXAMPLES

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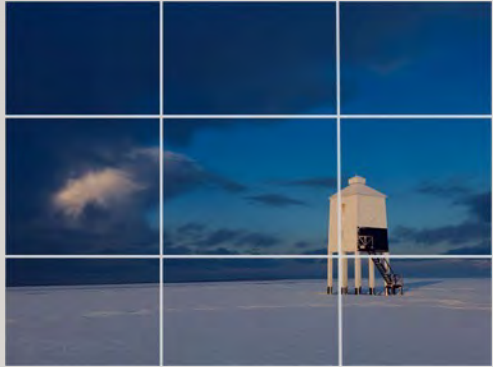


# 12 EXPOSURE TRIANGLE CHEAT SHEET



# 13 COMPOSITION TECHNIQUES

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Rule of Thirds



Framing



Leading Lines



Patterns



Fill the Frame



Symmetry



Diagonals

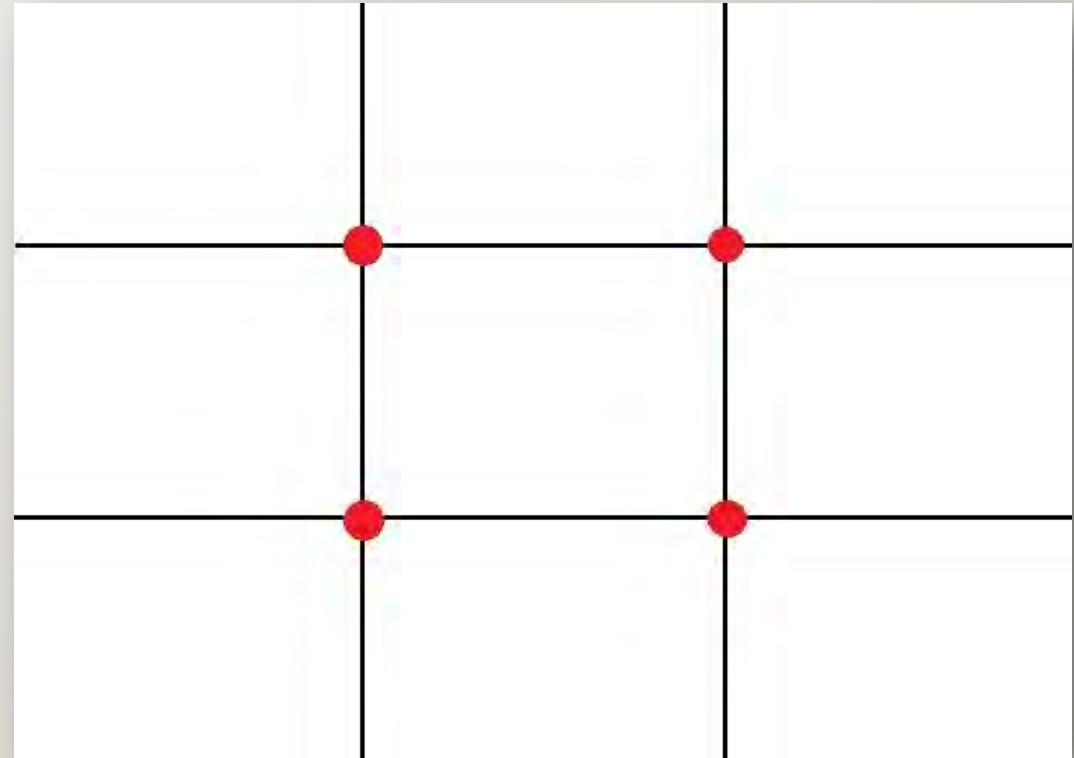


Contrast

# 14 RULE OF THIRDS

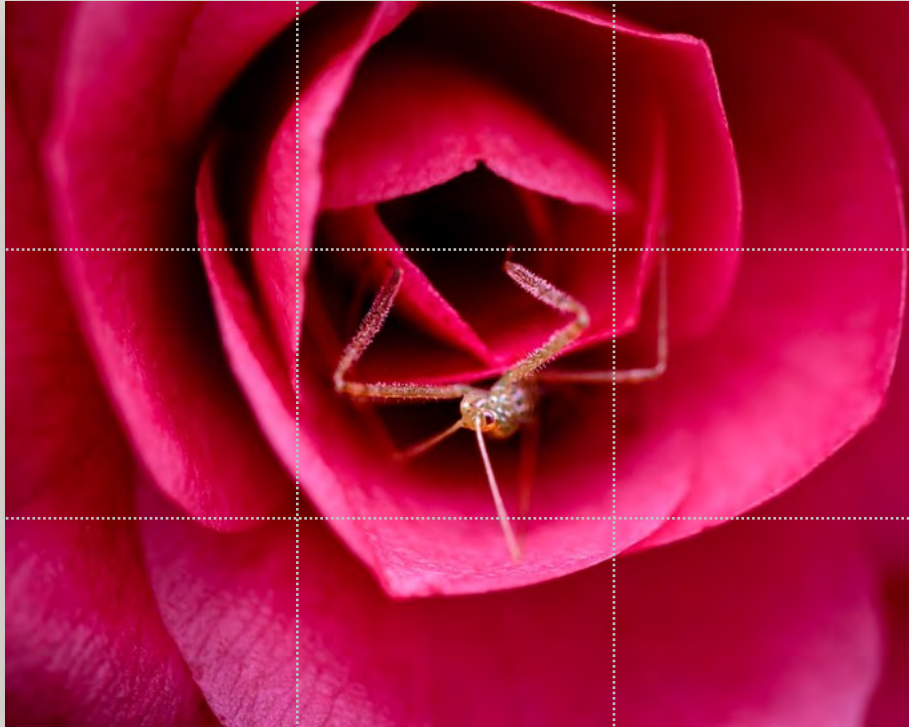
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- How it works
  - Divide scene into a 3x3 grid
  - Align the subject with the grid lines or at one of four vertices
  - Avoid placing the subject in the center square
- Why it Works
  - Subjects in the center become static
  - Off-center subjects allow room for the eye to travel within the photo, which creates movement and interest

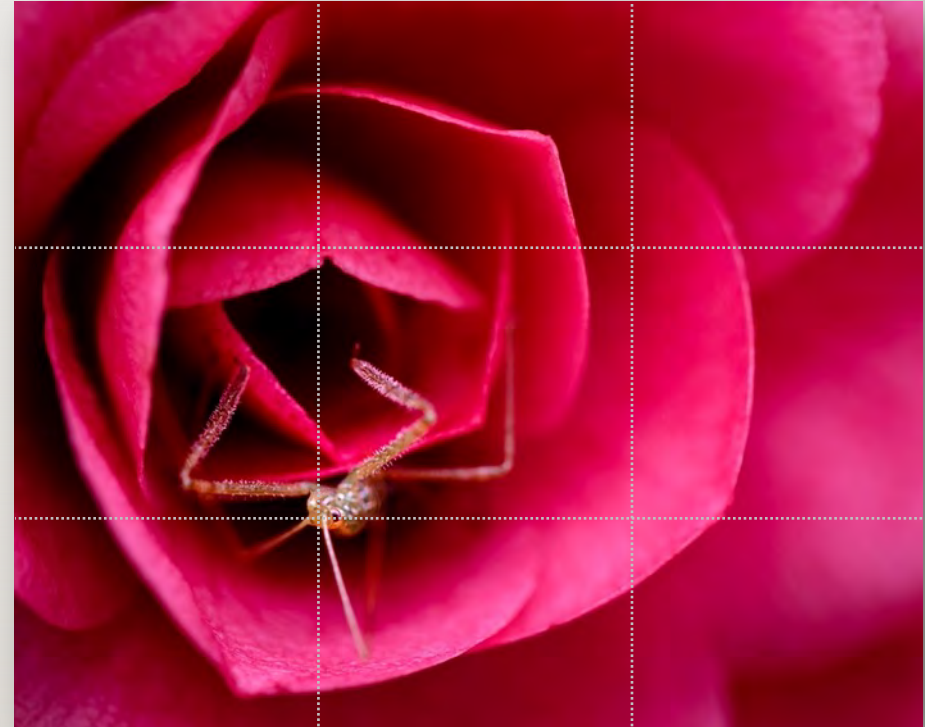


# 15 RULE OF THIRDS: BEFORE AND AFTER

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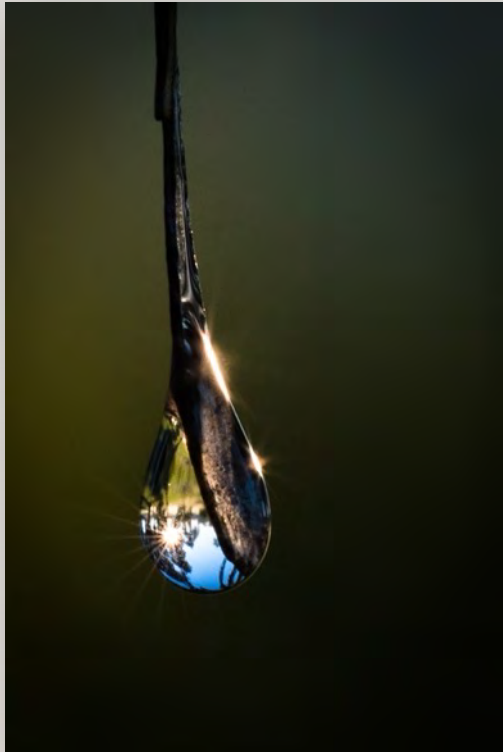
Subject Centered



Subject Off-set

# 16 RULE OF THIRDS EXAMPLES

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# 17 PORTRAITURE TIPS

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- ALWAYS focus on the eyes
- Crop/align so that your subject is looking/moving into the frame
- Avoid distracting backgrounds
  - Bright areas
  - Trees/poles behind subjects
- Overcast days can help to diffuse/soften light
- Get low (children/pets)
  - Provides a different perspective
  - Feels more intimate
  - Isolates subject from background
- Try aperture priority mode on your camera
  - Experiment with apertures  $< f/5.6$  for shallow DOF
  - Set ISO to Auto and allow camera to determine shutter speed



Good



Bad

# 18 LANDSCAPE TIPS

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- Look for scenes with objects in the foreground and midground to help add depth
- Sunrise and sunset are great times of day for landscapes
  - “Golden Hour”
    - Time just after sunrise and before sunset
    - Light is warmer and softer
    - Sideways light enhances natural textures
  - “Blue Hour”
    - Time just before sunrise and after sunset
    - Light is cooler
- Make sure horizons are level
- Try aperture priority mode on your camera
  - Experiment with small apertures ( $> f/11$ ) to increase focal depth
  - Small apertures mean less light and may require a tripod to allow for slower shutter speeds
  - Focus on a spot  $1/3$  of the way into the scene to optimize focal depth
  - Set ISO to Auto and allow camera to determine shutter speed



# 19 PHOTO CHECKLIST

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- ❑ IDENTIFY THE SUBJECT
- ❑ Choose the appropriate focal length lens
- ❑ Decide what you want to control...motion? ... depth of field?
- ❑ Make sure your subject is in focus
- ❑ Make sure your subject is the most prominent feature in the scene
- ❑ Beware of bright or colorful objects in the background that distract from the subject (e.g. lights, reflections, etc.)
- ❑ Use the crop tool during post-processing to eliminate distracting elements and clean up edges

## 20 REFERENCES

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- For tutorial articles and gear reviews:
  - Photography Life: <https://photographylife.com>
  - Ken Rockwell: <https://kenrockwell.com>
- For buying and selling gear:
  - Adorama: <https://www.adorama.com> (new and used)
  - B&H Photo: <https://www.bhphotovideo.com> (new and used)
  - KEH: <https://www.keh.com> (used only, highly recommend)
- Huntsville Photographic Society: <https://www.hpsphoto.org>
- My Instagram: [https://www.instagram.com/c\\_scott\\_photo/](https://www.instagram.com/c_scott_photo/)
- My website: <https://cscottphoto.smugmug.com>