# PHOTOGRAPHY 101

BY CHRIS BAKER

TOPICS

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

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
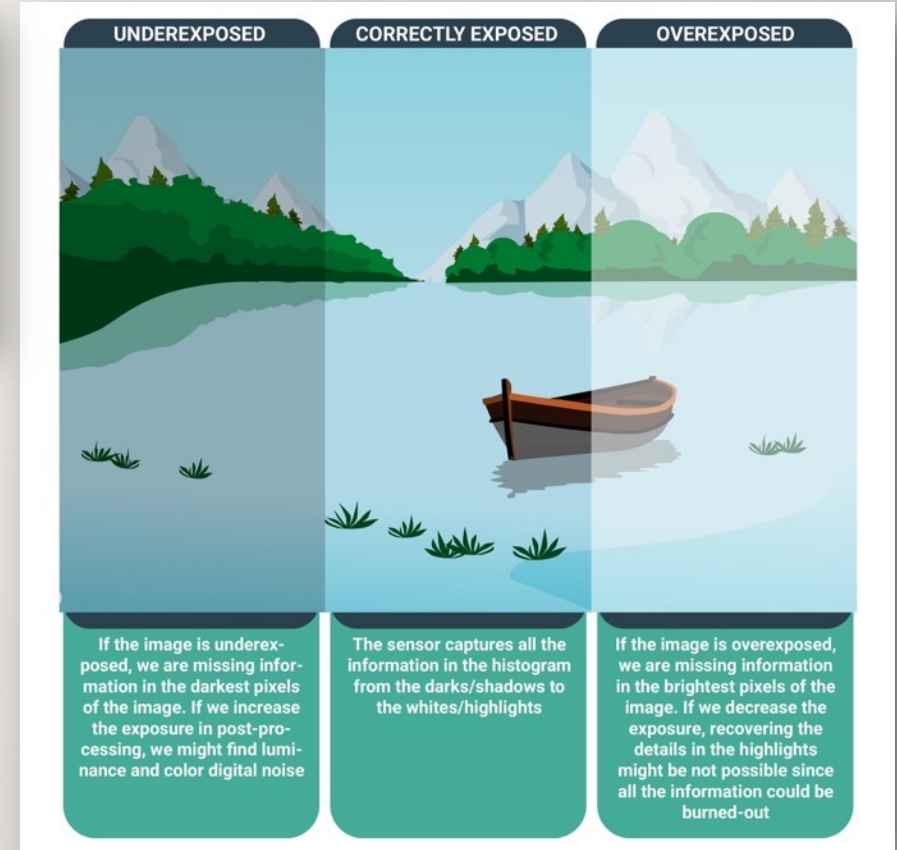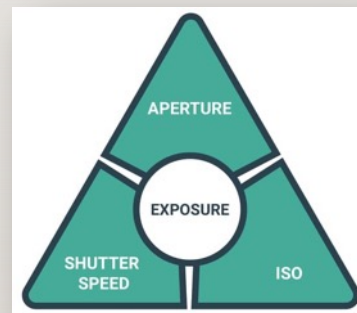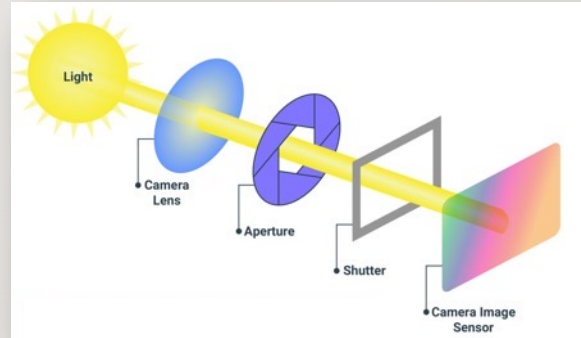
4 APERTURE

- 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

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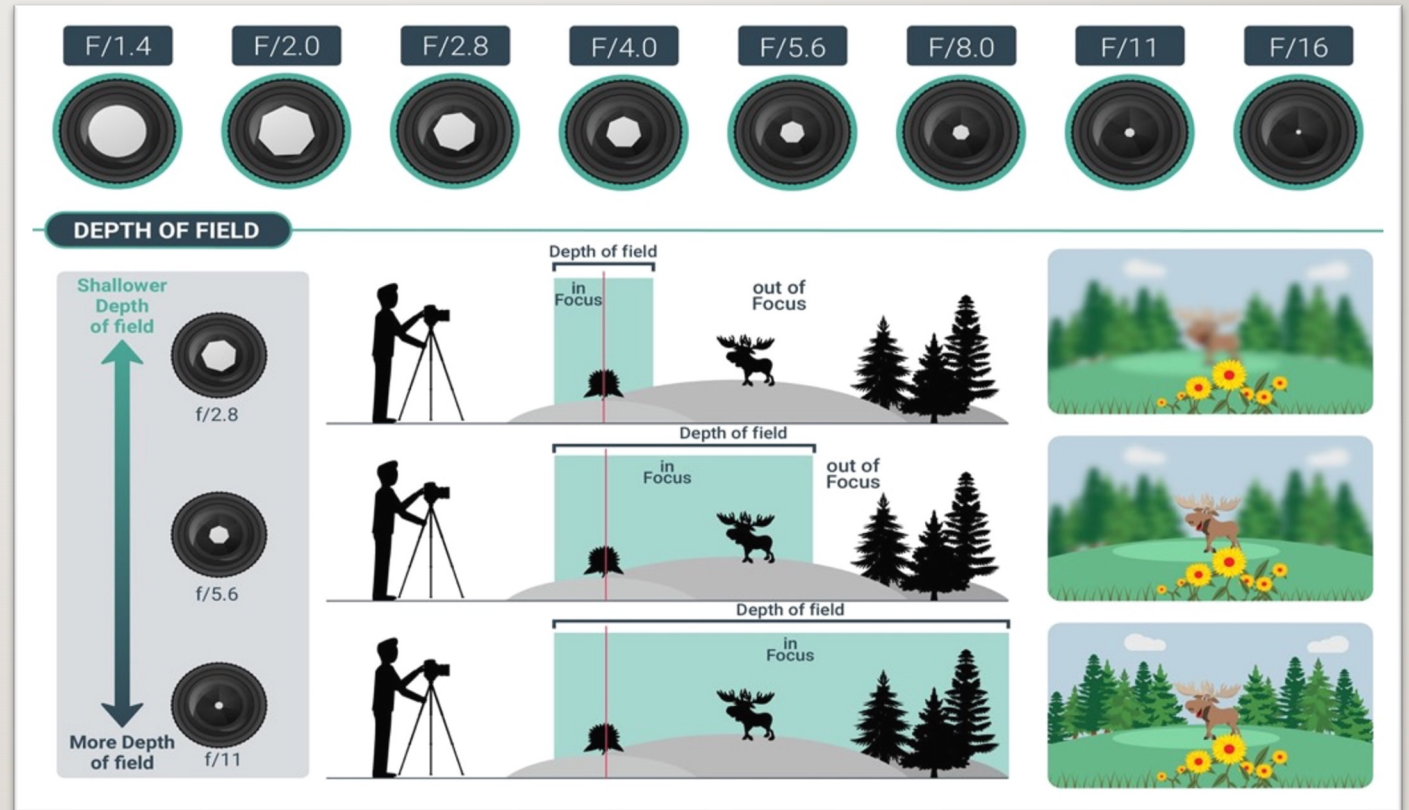
Aperture Controls Depth of Field
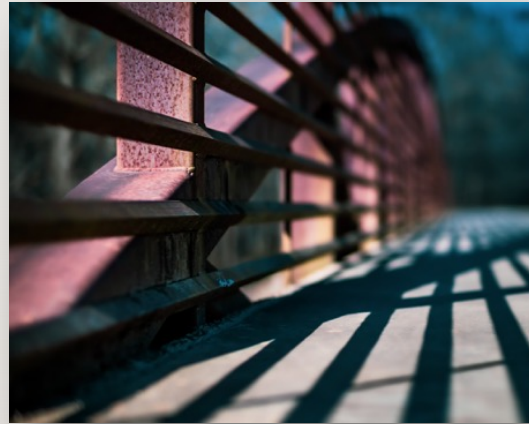
5 LARGE APERTURE (SMALL F-STOP) EXAMPLES
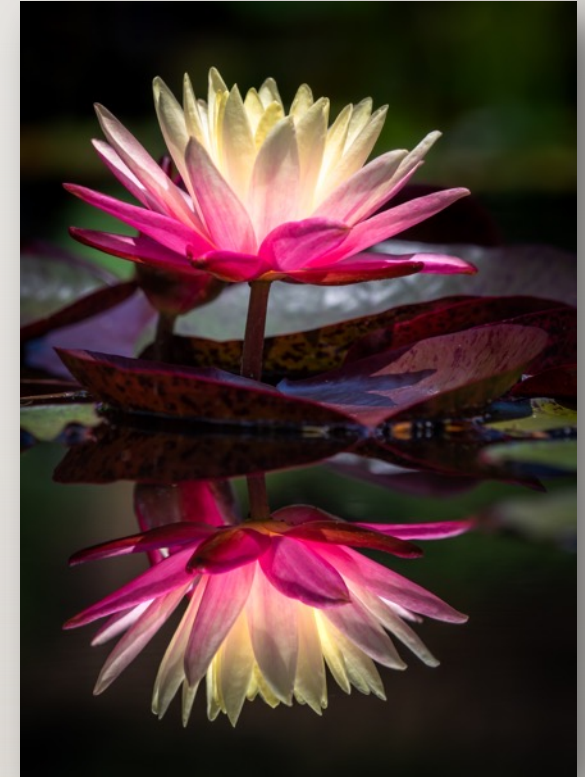

f/1.2

f/2.2
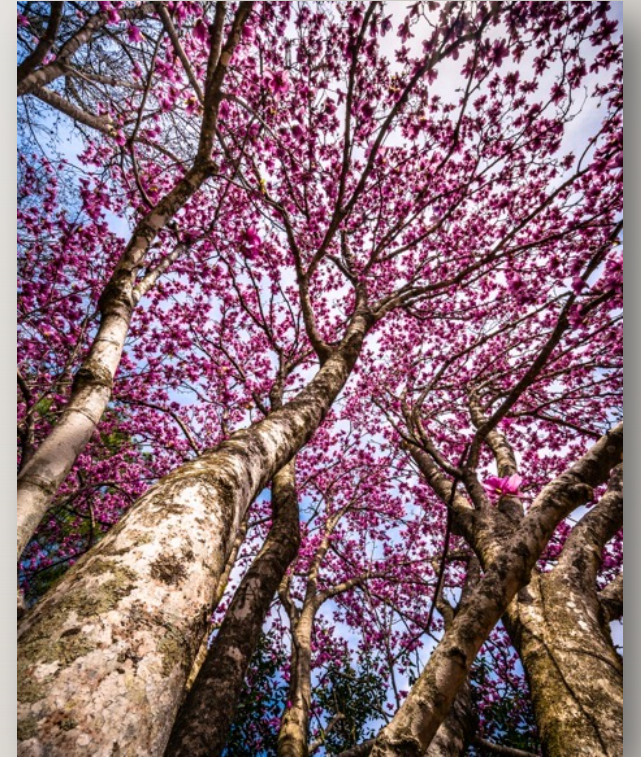
f/1.8

f/5.6

SMALL APERTURE (LARGE F-STOP) EXAMPLES

f/22

f/11
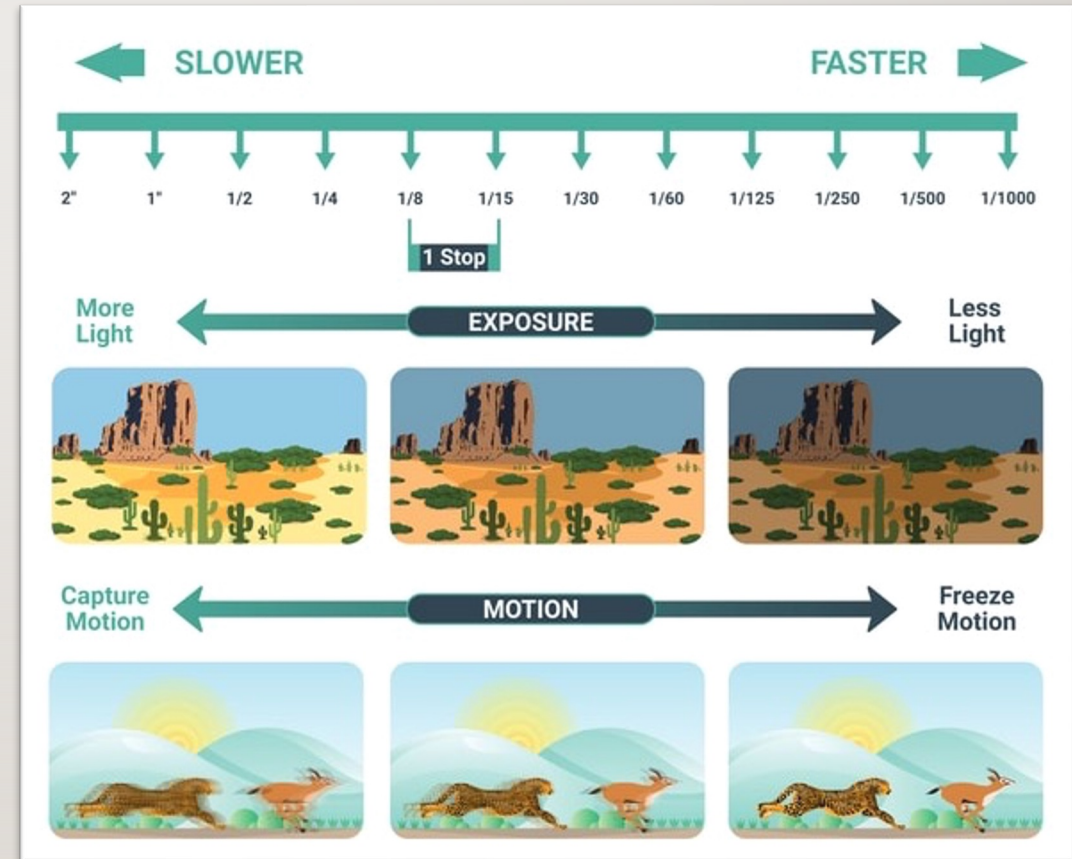

f/16

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

FAST SHUTTER SPEED EXAMPLES

1/2000 sec

1/2000 sec

1/1600 sec

1/1000 sec

SLOW SHUTTER SPEED EXAMPLES

20 sec

86 sec

10 sec

25 sec

1 sec

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
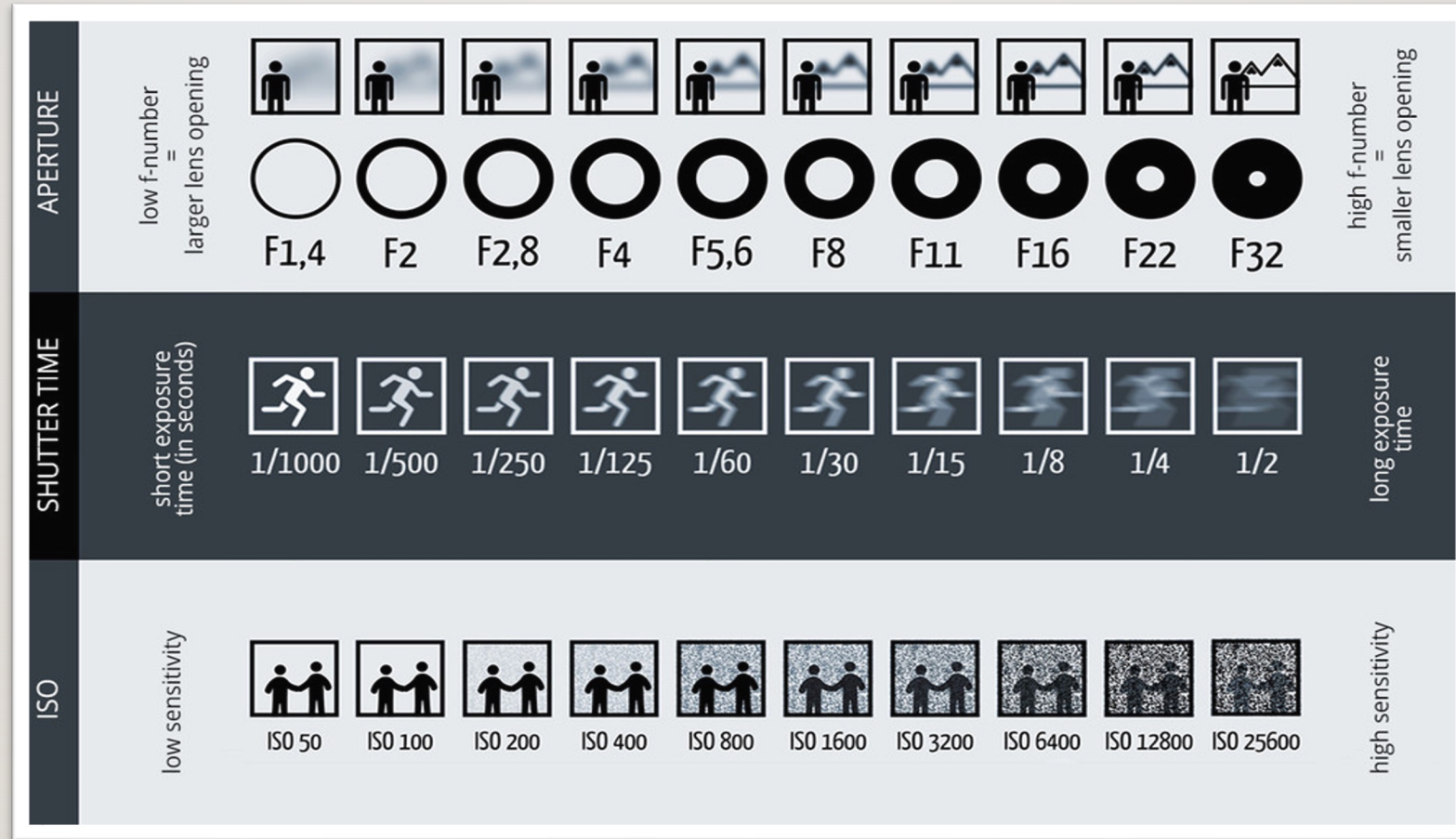 - Low light conditions
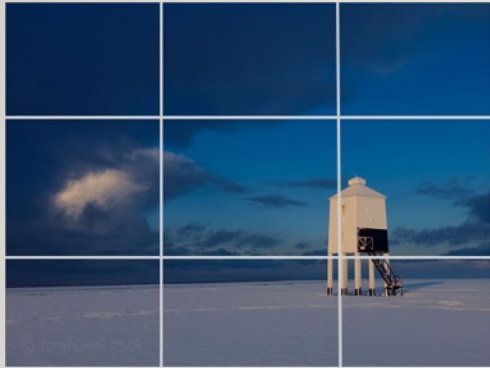

https://capturetheatlas.com
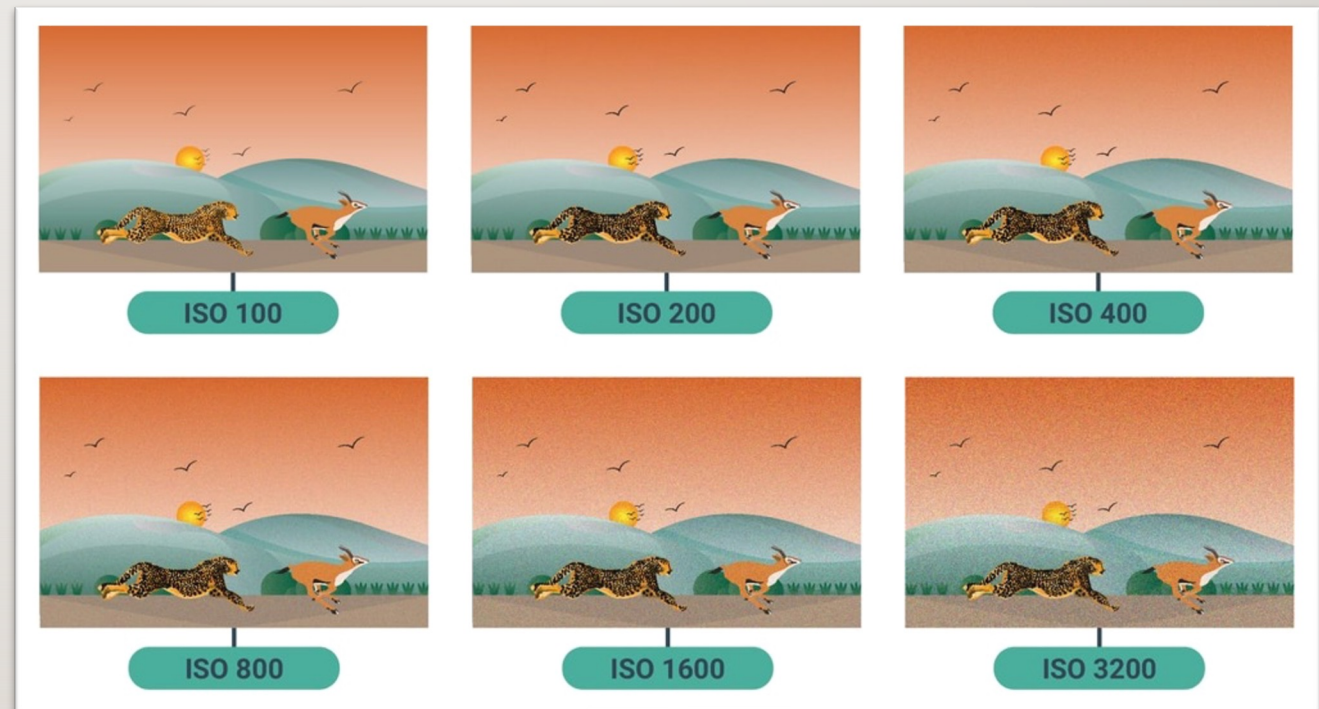
ISO EXAMPLES

EXPOSURE TRIANGLE CHEAT SHEET

13 COMPOSITION TECHNIQUES

Rule of Thirds

Framing

Leading Lines

Patterns

Fill the Frame

Symmetry

Diagonals

Contrast

RULE OF THIRDS

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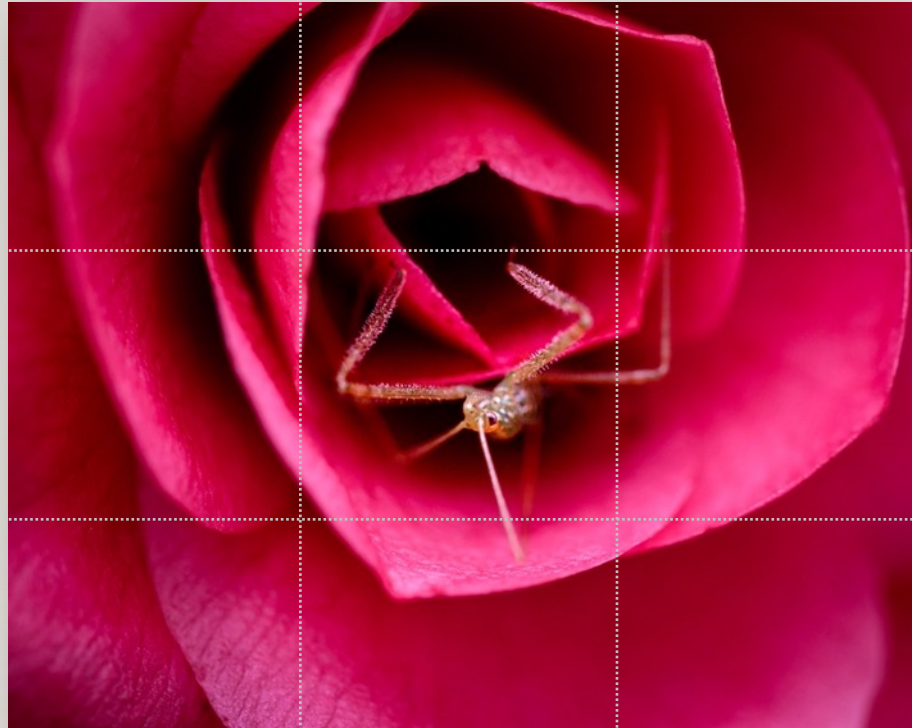 - Align the subject with the grid lines or at one of four vertices
  - Avoid placing the subject in the center square
- Why it Works
  - Subjects in the center become static
  - Off-center subjects allow room for the eye to travel within the photo, which creates movement and interest
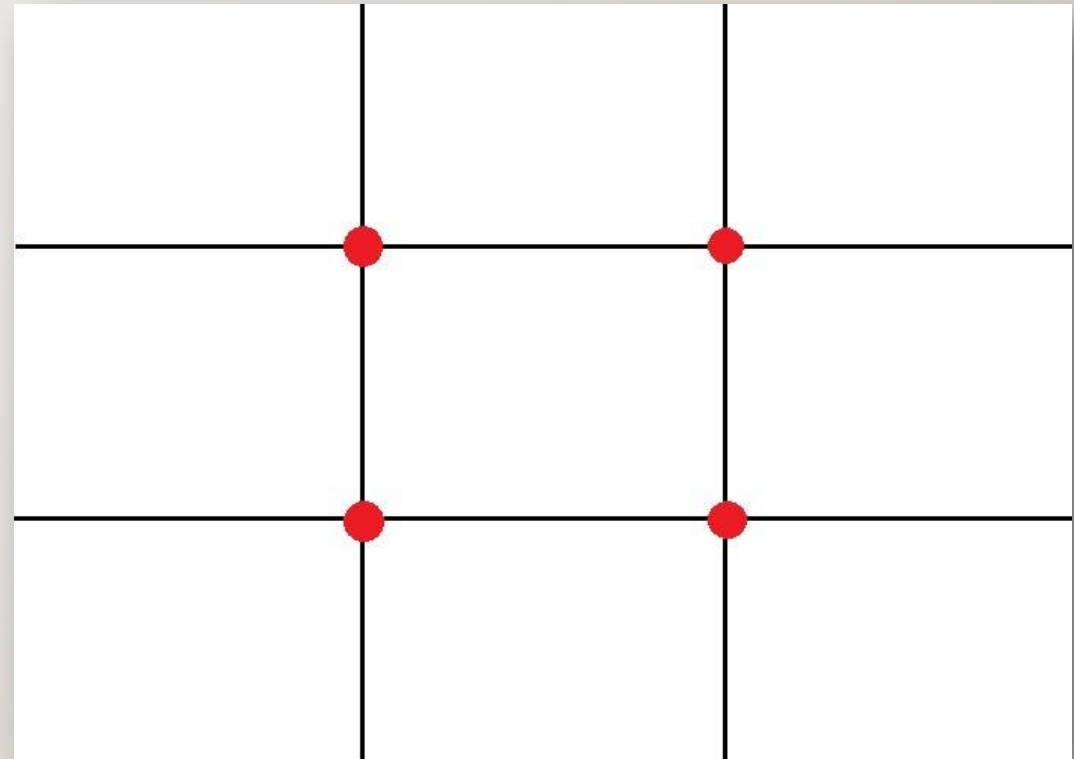
RULE OF THIRDS: BEFORE AND AFTER

Subject Centered

Subject Off-set

RULE OF THIRDS EXAMPLES
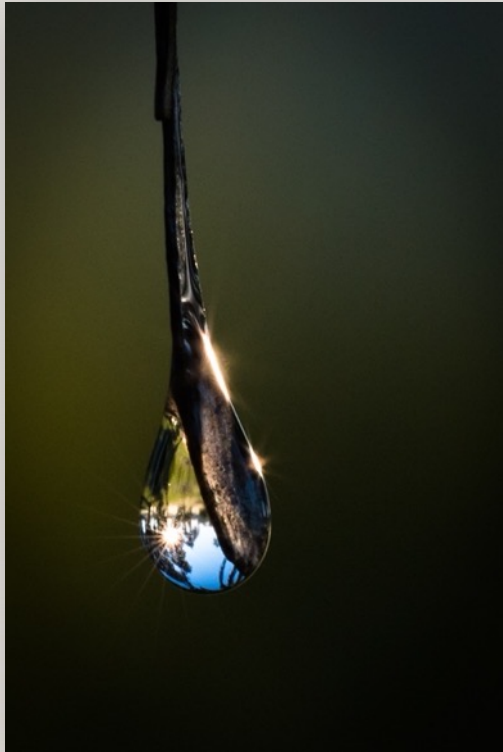
PORTRAITURE TIPS

- <u>ALWAYS</u> 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

LANDSCAPE TIPS

- 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

PHOTO CHECKLIST

- ❑ 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

- 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/

- My website: https://cscottphoto.smugmug.com