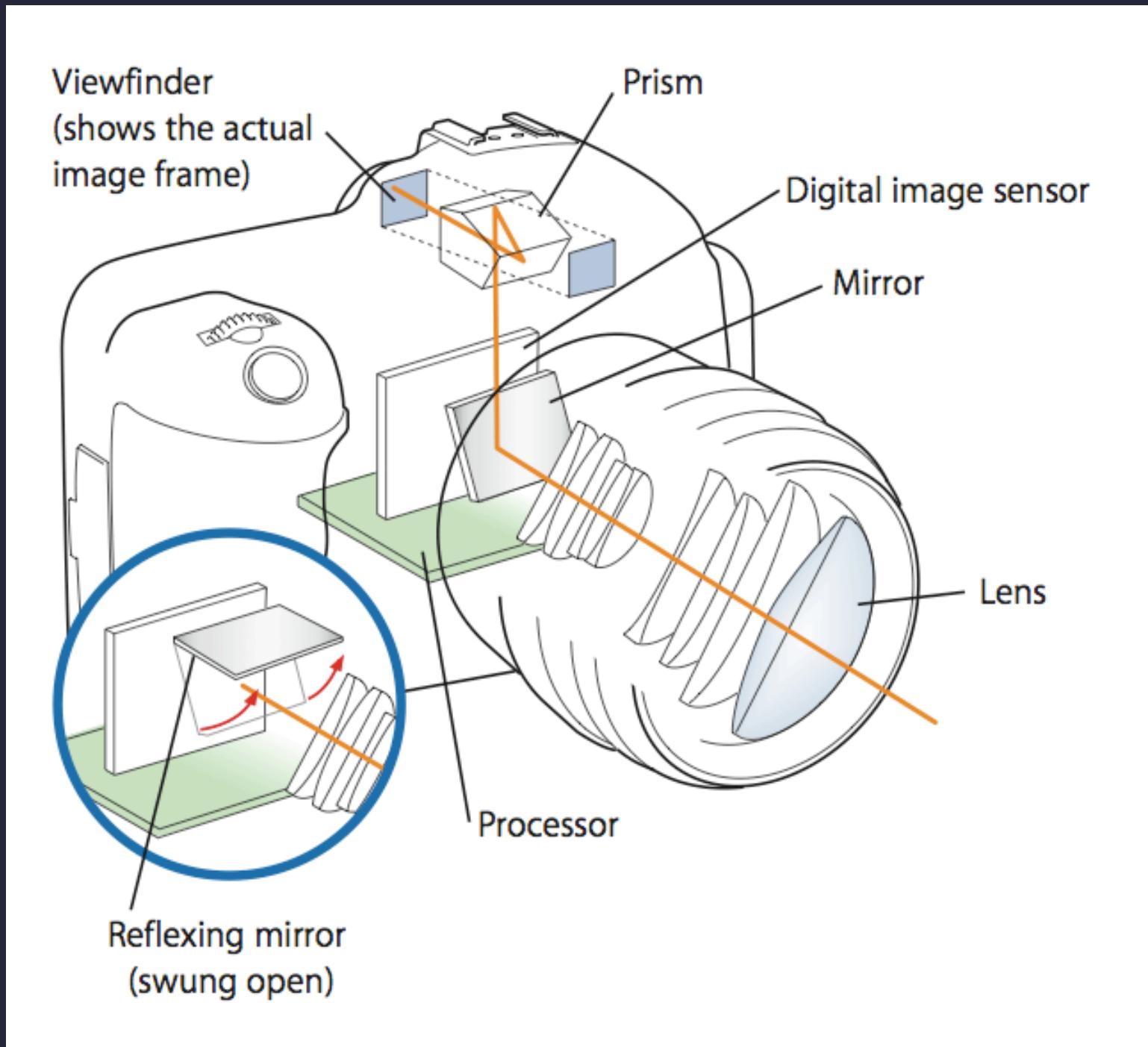


DSLR

Digital Single Lens Reflex Camera



- **Lens:** focuses light on the **Digital Image sensor**
- **Digital ImageSensor:** The electronic part that has replaced film in the modern camera, there are two types CCD and CMOS
- **Mirror:** reflects light onto the view finder and swings out of the way when a picture is taken
- **View finder:** Looks through the lens of the camera in a DSLR

HOW DO YOU TAKE GREAT IMAGES?

- CONTROL THE AMOUNT AND ANGLE OF THE LIGHT THAT HITS THE DIGITAL IMAGE SENSOR

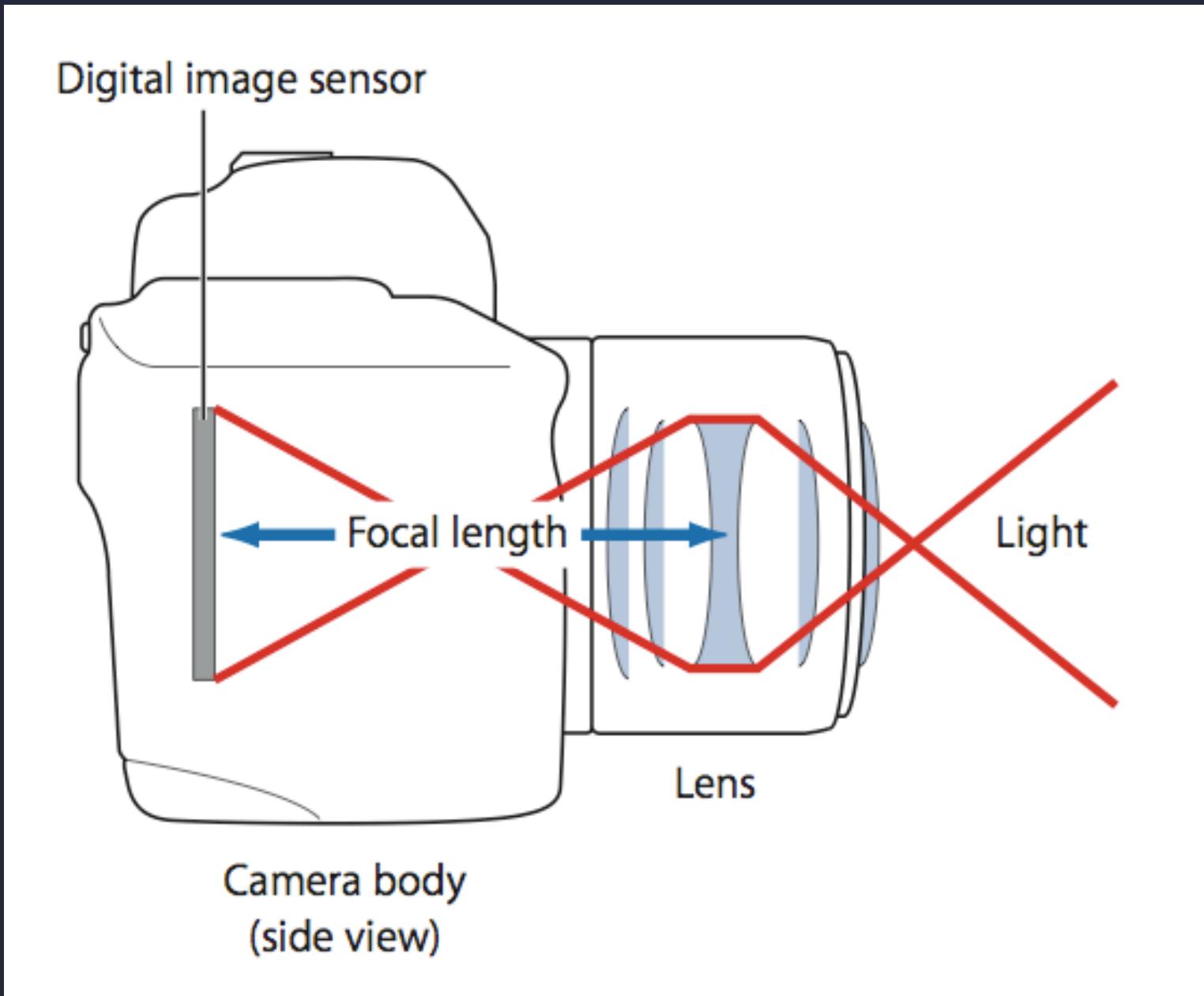
Lens

Aperture

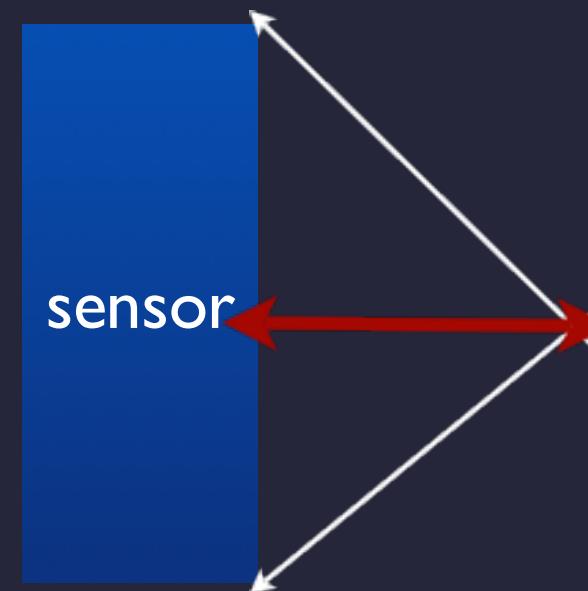
Shutter

DOF

Lens

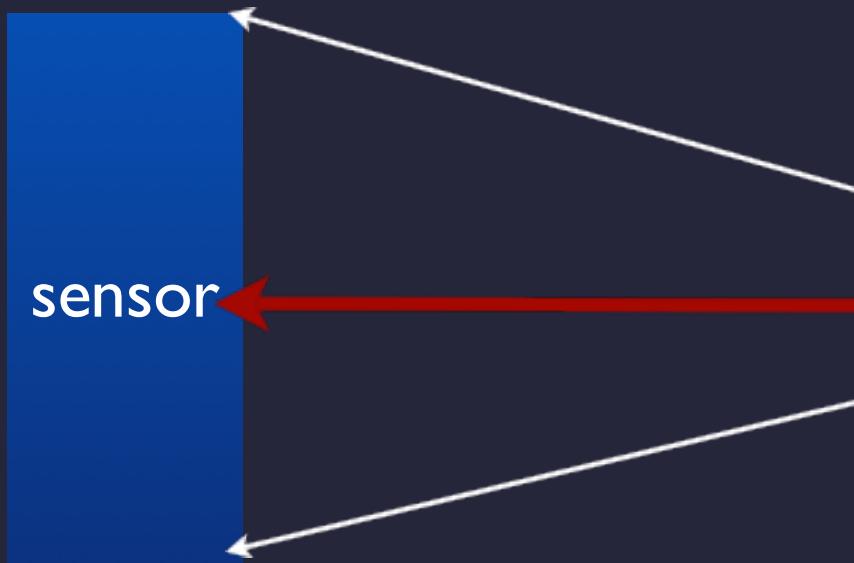


- A lens is a series of sophisticated elements, usually glass, constructed to refract and focus the reflective light from a scene at a specific point—the digital image sensor.
- Lenses are most often described by their focal length: the distance from the point where the light rays converge to the image sensor, usually measured in millimeters.
- A longer focal length results in more magnification of the scene.



short focal length = wider field of view

focal length



long focal length = more magnification

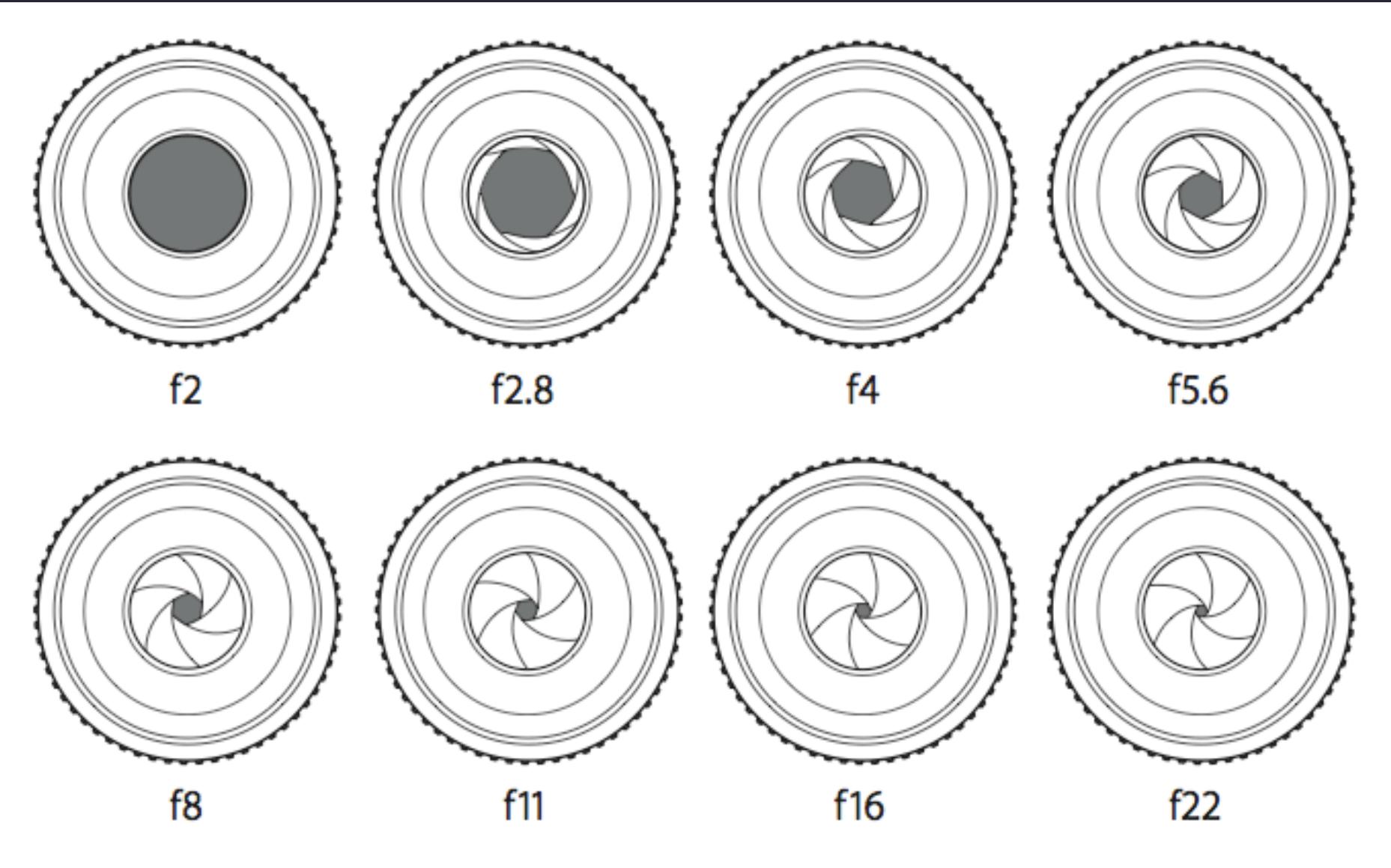
Types of lenses

- Telephoto = long focal length, used to photograph subjects at a distance, nature/sports photography, more “reach” with a shallow depth of field
- Wide Angle = shorter focal length, used to photograph wide scenes, landscape photography, focal length typically shorter than the size of the image sensor
- Zoom = An optical zoom lens has the ability to change its focal length, can shift between wide angle and telephoto, however more glass in the lens decreases the amount of light that hits the sensor
- Prime = A lens with a fixed focal length, these lenses are not as flexible but let more light through the lens, good for low light

Light

- Fast Lens = a lens that lets in more light
- Slow lens = a lens that lets in less light

Aperture



- The Ratio of the Aperture opening to the focal length of the lens = f-stop
- 50 mm lens with an aperture opening of 12.5 mm = f4
- $50/12.5 = 4$

Shutter

- The length of time that the digital image sensor is exposed
- Measured in fractions of a second
- 1/100, 1/500, 1/1400
- Slower shutter speeds let in more light
- Faster shutter speeds capture fast motion clearly



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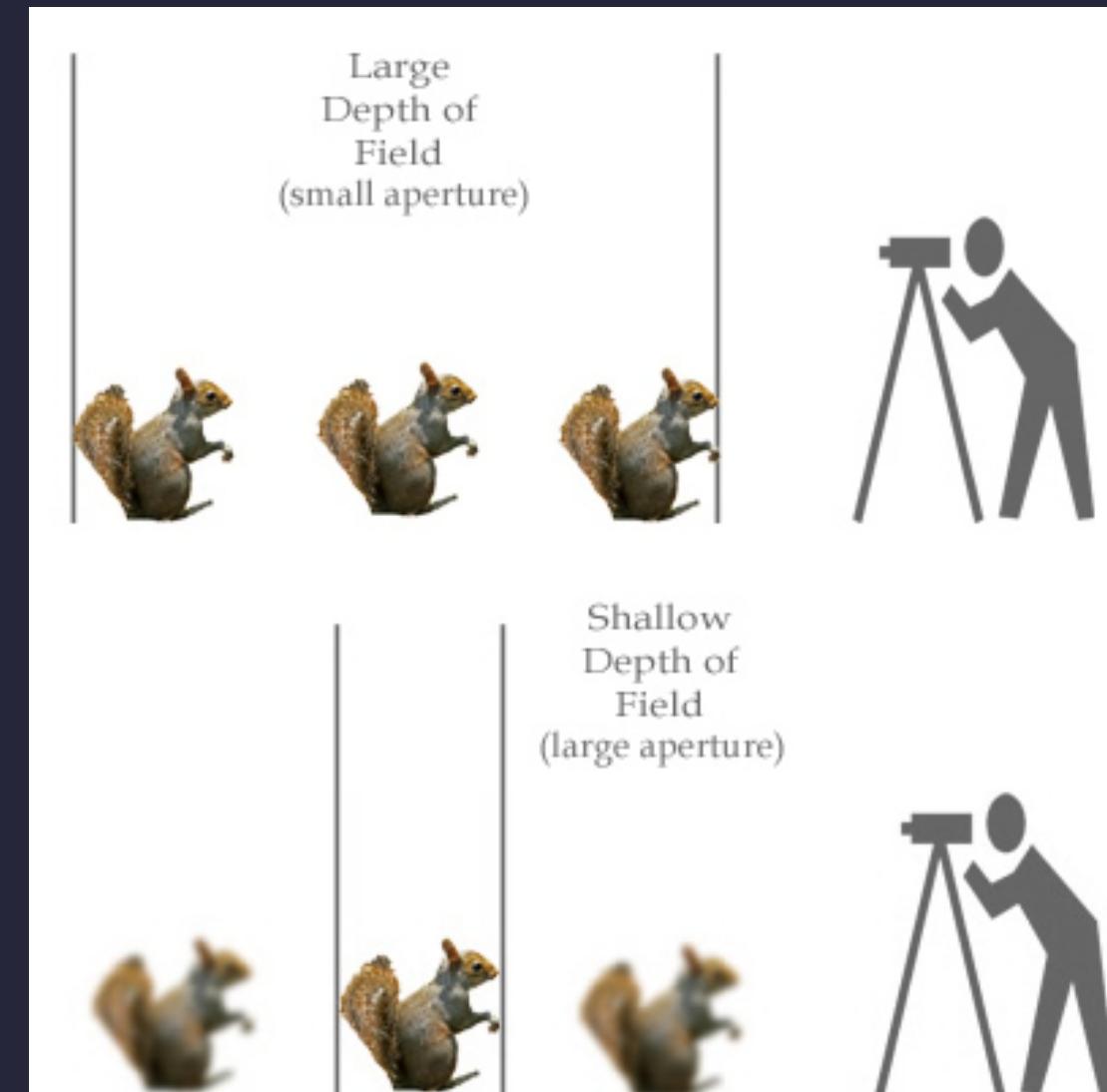


ISO

- The rating of the sensitivity of the digital image sensor
- The higher the ISO the faster shutter speeds that can be used on the camera with LESS digital noise

DOF

- Depth of Field: the portion of a scene that appears in focus
- A picture with a small DOF is said to have “shallow focus”
- A picture with a large DOF is said to have “deep focus”





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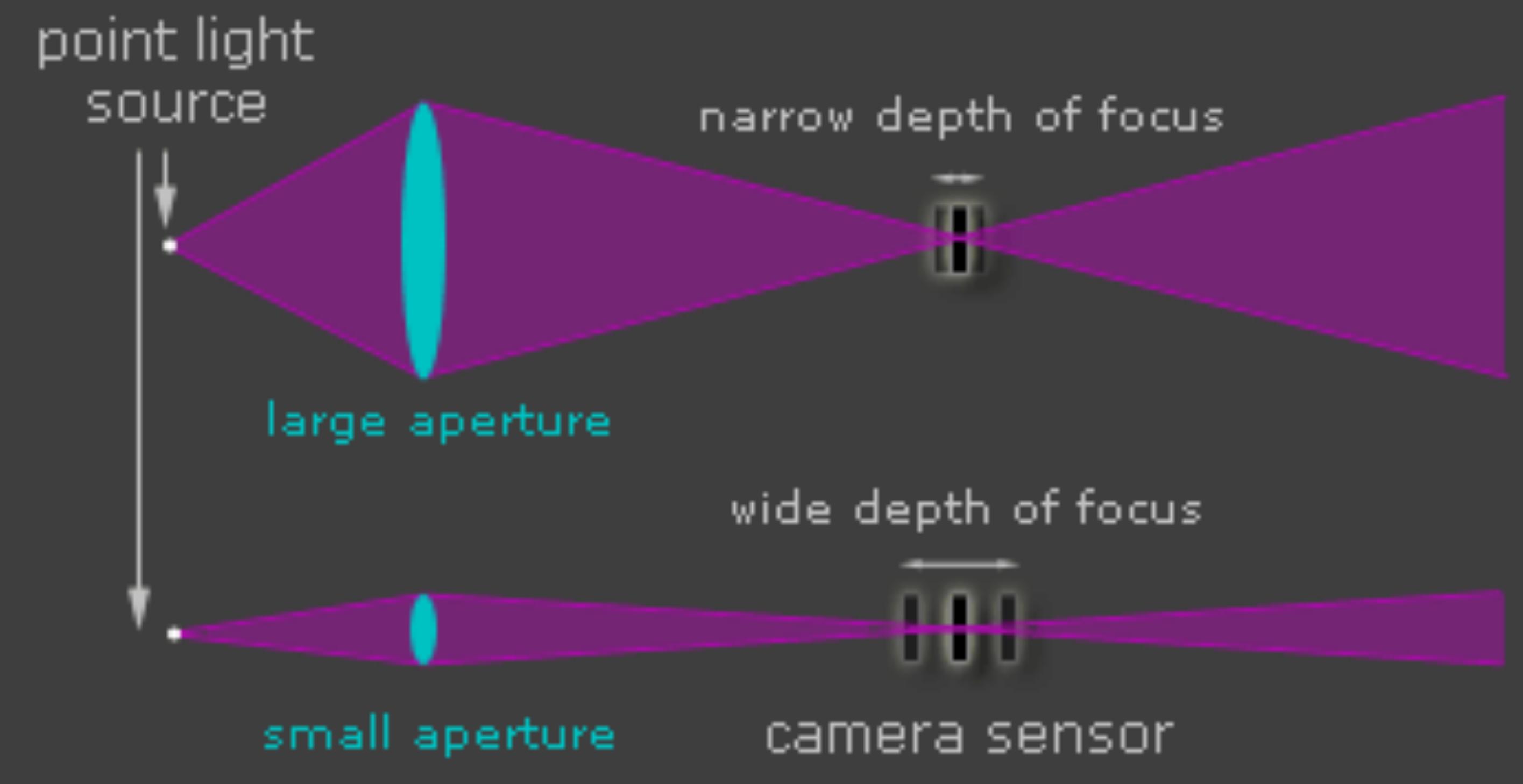
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Aperture vs. DOF

- Increasing the f-stop increases the depth of field
- Decreasing the f-stop decreases the depth of field





F 1.4



F 5.6



F 16

Magnification vs. DOF

- Decreasing Magnification increases the depth of field
- Increasing Magnification decreases the depth of field

Bokeh: The out of focus quality provided by a short depth of field



Photographic composition

- Simplicity
- Contrast
- Balance
- Viewpoint
- Line
- Framing

