The Exposure Triangle

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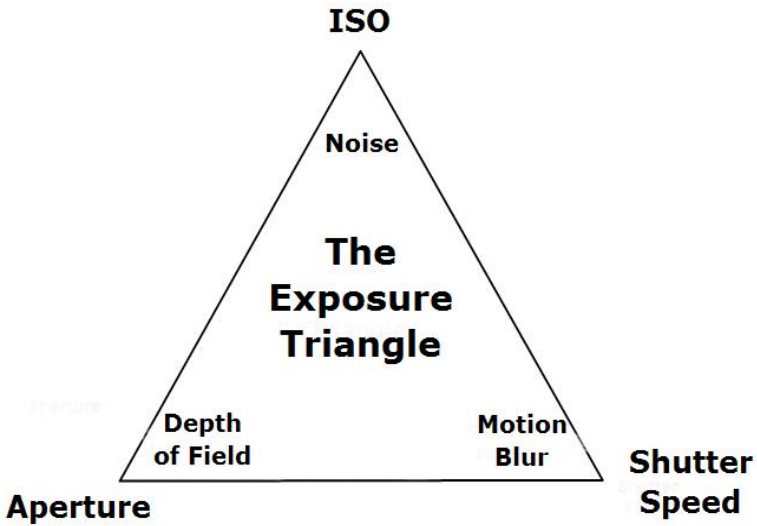
What is Exposure?

EXPOSURE is the amount of light that reaches the film or the digital sensor in a camera (in other words, it is how long the film or sensor is EXPOSED to light).

Three factors determine exposure:



What is Aperture?

APERTURE is also known as F/STOP.

It is the opening in the camera lens that limits the amount of light passing through. The larger the f/stop, the more light can get into the camera.

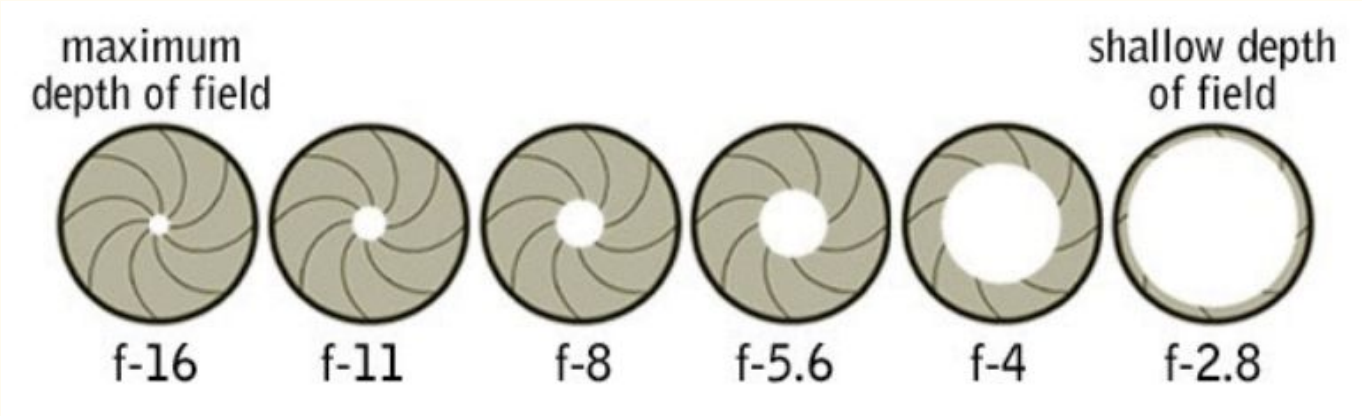
This can be a little confusing, because the higher the f/stop number, the smaller the opening in the lens is.

For example, an aperture setting of f/16 creates a smaller hole than a setting of f/2.8.

What Does Aperture Control?

Aperture controls what is known as DEPTH OF FIELD.

It is how far back in a picture the camera focuses the image. The smaller the hole, the further the camera can see. If the hole is large, the background will be blurry.



Depth of Field Example

Depth of Field Example

What is Shutter Speed?

Shutter speed is the length of time that the camera's shutter opens to allow light in.

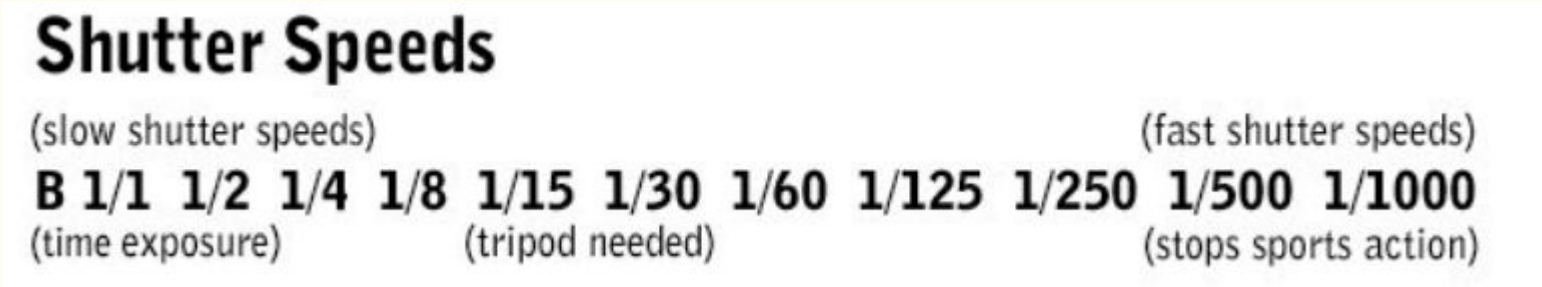
Think of the camera like an eye that stays closed. The shutter speed tells the eye how long to stay open.

Shutter speed is measured in fractions of a second. 1/5000 (one five-thousandth of a second) is a fast shutter speed, while 1/1 (one second) is slow.

What Does Shutter Speed Control?

Shutter speed controls MOTION BLUR.

If you are trying to take a picture of something that is moving, you will have to make sure the shutter speed is fast enough to stop it. If your shutter speed is not fast enough to stop the motion, the image will be blurry.



Slow Shutter Speed Examples

Fast Shutter Speed Examples

What is ISO?

ISO is a setting that determines how sensitive your camera sensor is to light.

If the scene you are photographing is very bright, you can use a low ISO.

If it is dark, you may need a higher ISO to help the camera see.

You should always choose the LOWEST POSSIBLE ISO.

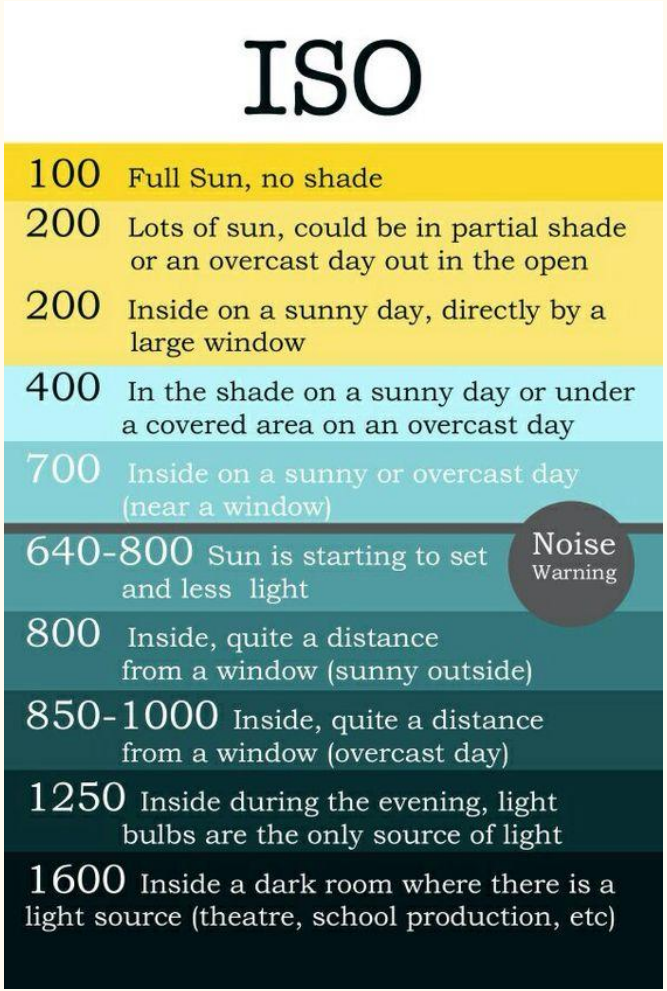
What Does ISO Control?

ISO controls NOISE.

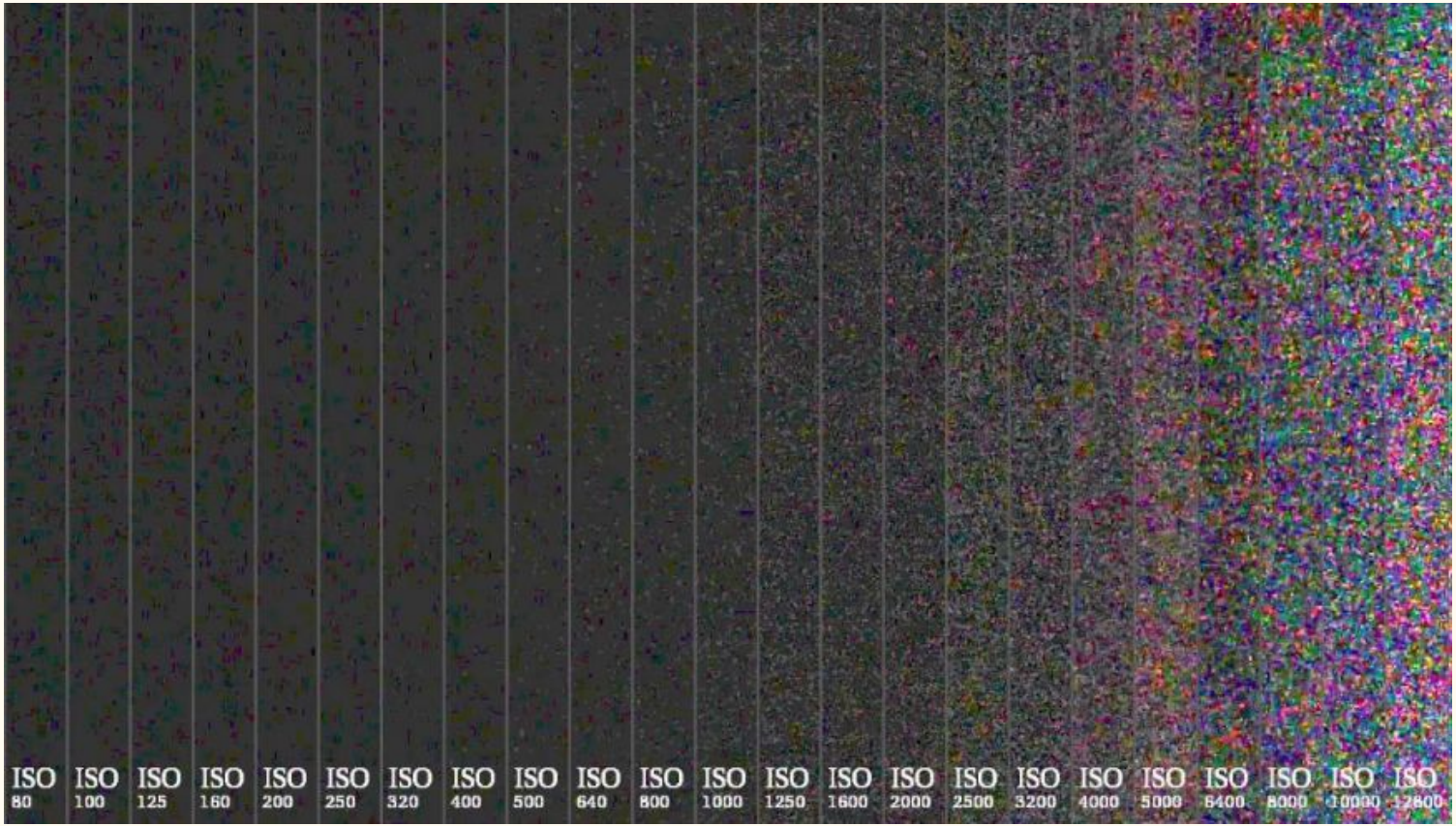
Noise makes a photo look grainy and less clear--like there are tiny little dots all over the image.

The higher the ISO, the more likely you are to have noise.

If your camera has a small sensor, it takes a lower ISO to create noise than a camera with a larger sensor.



ISO Example


ISO 80
ISO 100
ISO 125
ISO 160
ISO 200
ISO 250
ISO 320
ISO 400
ISO 500
ISO 640
ISO 800
ISO 1000
ISO 1250
ISO 1600
ISO 2000
ISO 2500
ISO 3200
ISO 4000
ISO 5000
ISO 6400
ISO 8000
ISO 10000
ISO 12800

ISO Example

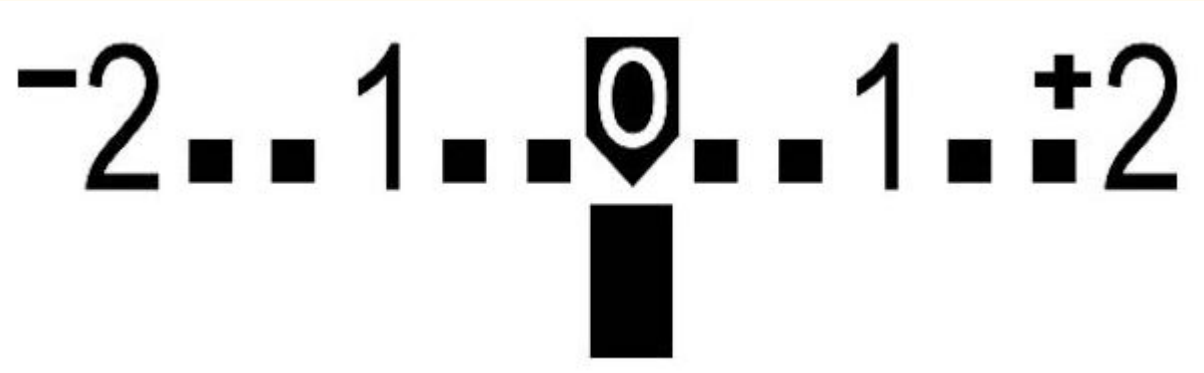
Low ISO (less grainy)

High ISO (more grainy)

Putting It All Together

Photographers must balance all of the elements of the exposure triangle in order to capture a great image.

Some cameras provide a tool called a light meter that helps the photographer see when the exposure is correct.



Balancing Aperture, Shutter Speed, and ISO

To get a picture of something moving fast in a dark area, you could lower the aperture, increase the shutter speed, and increase the ISO.

To get a picture of something sitting still in a bright area, you could increase the aperture, lower the shutter speed, and lower the ISO.

To create a picture with a blurry background in a bright area, you could lower the aperture, increase the shutter speed, and lower the ISO.

Works Cited

McLean, Mike. “JAU Photo Course.” Jostens Adviser University, 2016.