

ISO Project

ISO (Industrial Standards Organization 6:1993) in photography refers to how fast film crystals (for negative film), or the pixels of a digital sensor, can capture light. (These will now be referred to as “the media”)

The higher the ISO number, the faster the media is able to record the correct amount of light to create an image that mimics what our eyes see (assuming you have correct exposure.)

This allows the photographer the ability to have a faster shutter speed, or higher aperture number simply by “boosting” his or her ISO #.

So why not have a high ISO # all the time? Because.....

- In bright environmental conditions, you may actually not be able to have a fast enough shutter speed to avoid overexposure

The higher the ISO, the lower the overall picture quality. With Digital images this means “noise” and fuzziness, and with film, it means very visible grain structure.

1.

For this project I would like you to take a series of photos with your camera in the **Manual mode**.

These photos will be of the same subject in much the same setting.

You will begin by setting the camera ISO to 100 or 200, whichever is the lowest you can set your camera to. Place your camera on a tripod, on a stable surface, or move outside during daylight hours.

Using your light meter to ensure correct exposure, take a photograph of a scene.

This will involve changing your shutter speed or aperture. You may change whichever one you feel like.

(Remember that you will need a shutter speed of at least 1/30th of a second or higher to avoid blur, however.)

Now adjust the ISO # to 800 and take another photograph using the light meter to ensure correct exposure.

Remember to meter your subject again!!!

Repeat the above step with the ISO set to 800, and then 1600, or whatever the highest ISO is. (If your camera has an ISO setting of 12,800 take a photo at this setting.)

2.

Upload your photographs to a new subfolder titled “ISO” in your student folder. Use Image Capture to do this, or insert the sd card in the back of the computer.

3.

Open all your photos in Adobe Photoshop CC (Finder->Applications) and use the Crop Tool (C) to select a small area of your image detailed object that is in focus, such as a sign or license plate. Save all these files using “Save As” in the same folder as they were taken from. If your original file is dsc_054.jpg, I suggest renaming it dsc_054MOD.jpg, or some such system. **You can also rename the image based on what shutter speed, aperture, and ISO it was taken at after looking at these details in Preview or Photoshop. (See next procedure.)**

Leave Photoshop open!

4.

Create an MS Word, or Google Drive Doc where you will place your **cropped** photos using the insert command.

Use the exif data (open the jpeg in Preview, and select “TOOLS” > “INSPECTOR/GET INFO” > “Exif/Details” to find the information) to record the different data of the photo taken at the lowest ISO (100 or 200), ISO 400, ISO 800, and the highest ISO # (1600, 3200, or HI1.0)

This information (ISO, shutter speed, and aperture) should be placed below each photograph in the Doc, and if you like, you can rename the file with this info.

At the bottom of this document, please answer the following:

1. What do you notice about the f-stop number and shutter speed of your photo taken at the lowest ISO compared to the photo taken at the highest ISO?
2. In Photoshop Elements, take a close look at the photograph taken at the lowest ISO and the highest ISO. With the two photos open, select ViewActual Pixels What is the difference between the images?
3. What are two situations where you would choose to use a low ISO #?
4. What are 2 situations where you would choose to use a high ISO#?

This document must be handed in as a .pdf! In Drive go File->Download as PDF

Below is a sample document, yours should include a minimum of 3 ISO's :

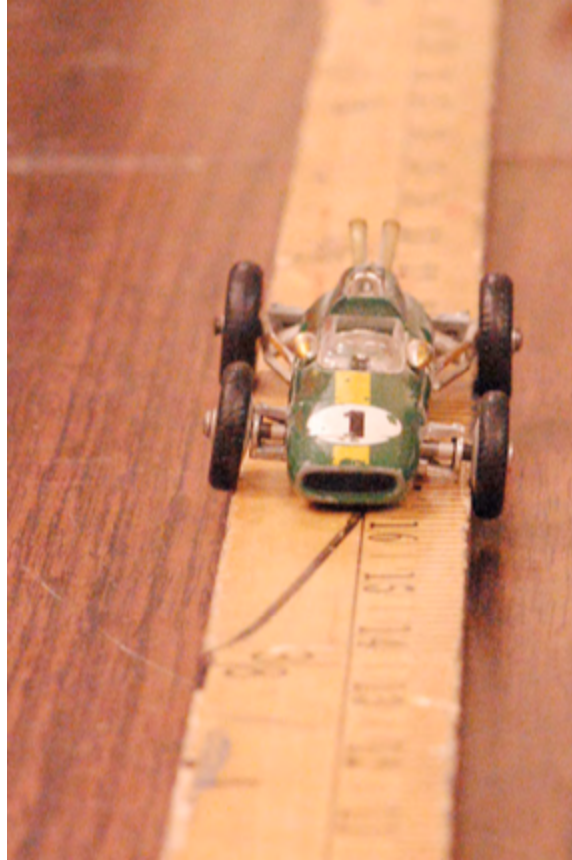
Biff Turkle Block 9 Nov.28, 2013



This photo was taken at ISO 100 @ 1/25th second @ f 1.8



This photo was taken at ISO 400 @ 1/25th second @ f4



This photo was taken @ ISO 1600 @ 1/25th second @ f 10 Questions:

1. I noticed that as the ISO # goes _____, the aperture # got _____. I was also able to change the shutter speed instead of the aperture to get correct exposure; as ISO # got higher, I was able to use a _____ shutter speed.
2. Wow! The pixels of the photo taken at ISO 3200 are really, really _____. The photos taken at ISO 100 are extremely _____.
3. I would probably use a low ISO# if I was taking photos at the _____ in the middle of the _____, or trying to take _____ photos of _____ for a journal of Medicine.
4. I would use a very high ISO # if I had to take photos of _____ in the school gym, or _____ in the forest in the middle of the _____.