

## Coffee & Camera ISO Exercise

### Exercise - Adjusting ISO

1. Camera Settings:
  - Mode = Aperture Priority
  - Aperture = f/5.6
  - Shutter Speed is set automatically in Aperture Priority mode
  - ISO = 100
  - Turn off your Auto ISO control (usually found in your camera's menus, but not all cameras have this control).
2. Find a subject in open shade (see notes below).
  - You can also do this exercise in a room lit by late afternoon window light only
3. Make an image with the current settings.
4. Increase the ISO by doubling the number until you reach the maximum ISO for your camera. Take the same photo at each stop.
  - Remember to **ONLY** change the ISO. Leave all other settings the same.
    - ✓ Example: Set the ISO to 100, 200, 400, 800, 1600, 3200, etc.
  - Note how the shutter speed is changing to maintain a good exposure. Each exposure should look pretty close to the same as long as the available light is not changing dramatically.
5. Analyze the first image and the last image
  - If you have a photo viewing app on your computer, zoom in on the last photo until you start to see noise
    - ✓ Noise looks like snow or colored pixels that are clearly not correct
    - ✓ You may see blurriness when you zoom in, but that is not caused by the ISO setting
  - Make sure you zoom in on the low ISO photo the same way to see if you detect any graininess.
    - ✓ You may see blurriness when you zoom in, but that is not caused by the ISO setting
6. By Sunday, December 2, please send me two photos (the first and last in the sequence).

### Extra Credit

1. Experiment with ISO by taking a photo in low light to see the effect of increasing the ISO when there isn't much light to work with.
  - Mode = Manual
  - Aperture = f/5.6
  - Shutter Speed = 100
  - ISO = 100
  - Turn off your Auto ISO control (usually found in your camera's menus, but not all cameras have this control)
2. Make an image with the current settings.
  - Note that the image may be underexposed (too dark), but take the photo anyway.
3. Increase the ISO by doubling the number until you reach the maximum ISO for your camera. Take the same photo at each stop.
  - Remember to **ONLY** change the ISO. Leave all other settings the same.
    - ✓ Example: Set the ISO to 100, 200, 400, 800, 1600, 3200, etc.
  - Note what is happening to the images as you adjust the ISO
  - At any point, is the camera getting a good exposure?
  - At what point does the image start to look overexposed?
4. By Sunday, December 2, please send me two photos (the first and last in the sequence).

**Notes:**

1. It's not necessary that you do the first exercise in "open shade," but it's a good concept to learn about and it will always improve your photography (especially family photography).
  - a. See the picture below and note that this is not my drawing (but I like it).
2. Open shade is:
  - a. In front of a house or building when the sun is behind the building. Note that the sun just has to be "behind enough" to create a good shadow.
  - b. In front of a stand of trees when the sun is behind the trees.
  - c. In front of any object that casts a shadow with the sun behind it.
3. Your subject should be looking out from the shade into sunlight beyond the shade.
4. Using open shade is a great way to take photos in mid-day and avoid the harsh contrast of the sun.

