

Fundamentals of Digital Photography *Learning Projects*

www.johngreengo.com

1, ISO Test

Objective: Test and examine the results of your cameras ISO settings to determine the loss of quality as the ISO increases.

Shoot a static subject at all full-stop ISO settings (100, 200, 400, 800, 1600, 3200 etc.). Maintain the same aperture, so as not to change the depth of field, and just change the shutter speed to accommodate the change in ISO. Use a tripod and be careful not to move the camera or adjust either the zoom or focus.

Step 1 – Set your camera up focused on a stationary subject. Choose a subject that has both a dark area and one with an area of continuous tone (a smooth area).

Step 2 - Set your camera to the lowest ISO setting.

Step 3 – Set your camera to manual exposure.

Step 4 - Set your aperture to a middle aperture (i.e. f/5.6, f/8, f11) for maximum sharpness.

Step 5 – Set an appropriate shutter speed so as to obtain a good exposure.

Step 6 - Focus on the subject and do not change focus for the rest of the test. You might want to put your camera into manual focus.

Step 7 – Take your first exposure. Check the histogram to make sure you are getting a good exposure.

Step 8 – For your second shot, adjust your ISO one full stop higher and make the appropriate change in your shutter speed.

Step 9 – Continue shooting until you have shoot at your highest ISO setting. (Note: some cameras must have a custom function turned on to access the highest ISO settings.

Step 10 – Download and examine your shots. Look for noise levels at higher settings. Determine at what ISO will you will draw the line at, as unacceptable in quality.

2, Shutter Speed test

Objective: Test the motion stopping capabilities of different shutter speeds.

Find a subject where you can take several shots of something moving at a constant speed. A bike path, highway or a water fountain will do.

Step 1 – Set a reasonably high ISO (800, 1600)

Step 2 - Set your camera to M or S/TV and the highest shutter speed your camera/lens will allow.

Step 3 – Take your first shot and check the exposure to make sure it is correct.

Step 4 – For your second shot adjusting your shutter speed or ISO setting a full stop slower (i.e. 1/1000 down to 1/500 or ISO 800 to ISO 400) Don't forget to adjust your aperture if necessary.

Step 5 – Continue shooting at lower shutter speed until your camera/lens combo won't allow any lower shutter speeds.

Step 6 – Download and examine your shots. Look to find the effect of different shutter speeds on your subject. Hint, look at the file info/metadata to see what shutter speed you shot at.

Fundamentals of Digital Photography *Learning Projects*

3, Hand-holding Test

Objective: To find the lower limit on your hand-holding abilities

Step 1 - Find a static subject to photograph.

Step 2 - Use a normal focal length lens and set a shutter speed of 1/500 of a second, or greater (Use whatever aperture or ISO necessary.

Step 3 – Take a series of three shots at each shutter speed, starting at 1/500 and moving down, in full stops, to 1 full second. At each shutter speed, take three shots to get a good sample of your ability.

Step 4 – Download and examine your shots at 100% magnification. Find the lowest shutter speed that you could hand-hold the camera. (three at 1/500, three at 1/250, three at 1/125 ect.) At your marginal shutter speeds you'll find that you can hold the camera steady for some shots but not all.

Extra – You may want to try this test a couple of times using a few variables. Try the test first just standing up, then try standing while leaning on a wall or railing, or maybe sitting in a chair or on the floor. Your results will vary with different focal length lenses. Try it with you widest and your longest lens as well. If your camera or lenses have a stabilization feature, try it with it on and then with it off, to see how much it helps you out. Keep track of your procedure otherwise when you are looking at your results you won't remember what you were doing with each series.

4, Focal Length Comparison

Objective: Test and compare the look of your different focal lengths to see their effect.

Use the full range of your lenses or different focal lengths of a zoom lens on a single subject to see the different types of photographs that result.

Step 1 – Find a subject that you can work with for a little while.

Step 2 – Use your widest lens to photograph it in any way that looks good to you.

Step 3 – Use a focal length a bit longer and take another photograph. For the first test, try to take all photographs from the same angle (but different distance) so as to end up with comparable results. For a second test try shooting from a variety of angles.

Try to shoot at 3-5 different focal lengths depending on the amount of range you have.

Step 5 – Download and examine your photographs and determine which images you like and why.

Fundamentals of Digital Photography *Learning Projects*

5, Depth of Field Test

Objective: Test the amount of depth of field that results from different apertures.

Find a stationary subject where you can take several shots utilizing a wide variety of apertures. A tripod will be necessary for this test. The subject should have some parts near the camera and some far away, the more extreme the better.

Step 1 – Find a suitable subject, it shouldn't have too many moving things in it.

Step 2 – Set your tripod and camera up where it will be for all shots.

Step 3 – Set your camera to Manual or Aperture Priority exposure mode.

Step 4 – Set your aperture to the widest opening (lowest number).

Step 5 – Set the appropriate shutter speed to obtain a proper exposure.

Step 6 – Shoot the first shot, and then adjust the aperture to the next full stop lower (with an appropriate shutter speed adjustment).

Step 7 – Continue shooting at smaller and smaller apertures until you run out of apertures.

Step 8 – Download and examine your photographs to see the effects of the apertures you have set.

Remember that Depth of Field is also affected by the focal length of the lens and the distance from the camera to the subject. You may want to try this test a few times using those variables to produce different results.

6, Variety Challenge

Objective: Find 5 subjects that fit into the following 5 priorities.

- Freeze motion
- Blur motion
- Maximize depth-of-field*
- Maximize sharpness*
- Shallow depth of field

*Tripod necessary

7, Composition

Objective: Take a collection of photographs to practice various composition ideas.

- Use the rule of thirds
- Break the rule of thirds
- Direction
- Symmetry
- Balance
- Frame a subject
- Blurry due to focus
- Blurry due to motion
- Panning

8, Find the Elements challenge

Objective: Find and photograph the following elements in five unique images.

- Line
- Shape
- Pattern
- Texture
- Color