Setting Exposure: Finding the “Goldilocks” in the Photo rev 7-12-16

Goldilocks Project is finding the perfect amount of light for your photographs. The light coming into your camera is the Exposure reading. **Exposure** is the result of controlling the **Aperture, Shutter Speed,** and **ISO.** Adjusting these **three** settings can make a photograph appear dark, bright, or somewhere in between.

 **Setting Exposure**

**Setting Shutter Speed:** Use the Main Dial to change the Fraction in the upper LHC of the screen.

**Setting Aperture:** Hold down the AV button while turning the Main Dial (F Value).

**Setting ISO:** Press the ISO button and use the arrows to select the proper ISO, then press “Set”.

 Notice the White Bar is at “0”

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 **SET Your Camera to the following. When set make a**

|  |  |
| --- | --- |
| Lens: 50mm |  |
| Lens: MF (manual focus) |  |
| Set Camera on Tripod. NEVER LEAVE UNATTENDED! |  |
| Mode **Dial**: M (Manual Mode) |  |

**#1 and 2 should all be of the same subject. #3 is out the window. Don’t move the camera.**

**Set your Aperture and your ISO to the settings below. Adjust your shutter speed to get the exposure at zero.**

1. Finding Exposure with set **Aperture**: (Record file name here: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)

|  |  |
| --- | --- |
| **ISO: 400** | **400** |
| **Aperture F8.0** | **F8.0** |
| Shutter Speed: you set for correct exposure | Write down the shutter speed you used: |

**Set your Shutter Speed and your ISO to the settings below. Adjust your Aperture to get the exposure at zero.**

2. Finding Exposure with set **Shutter Speed**: (Record file name here\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)

|  |  |
| --- | --- |
| **ISO: 1600** | **1600** |
| Aperture: you set for correct exposure | Write down the aperture you used: |
| **Shutter Speed: 1/200th of a second** | **1/200** |

**Take this photo pointing your camera through the window. Set your Shutter Speed and your Aperture to the settings below. Adjust your ISO to get the exposure at zero (or as close as you can).**

3. Finding Exposure with set **ISO**: (Record file name here: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)

|  |  |
| --- | --- |
| **ISO:**  | Write down the ISO you used:  |
| **Aperture F9.0** | **F9.0** |
| **Shutter Speed: 1/1600** | **1/1600** |

**For #4 choose a new scene and use for the whole series below.**

The purpose of this question is to experiment with taking photographs of the same thing with there not being enough light (creating a dark photograph, ***underexposed***) to there being too much light (creating a very bright photograph, ***overexposed***). Please see the example below. They are all of the same scene.

 

 

 

4. Using an tripod, create a series of photographs from the same location going from Underexposed (dark), to “Perfectly Exposed”, to Overexposed (bright), resulting in 7 photographs. Use the settings below and change the Shutter Speed to achieve the Exposure listed. Start with the “O” shot!

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Exposure | Aperture (F Value) | Shutter Speed | ISO | File Name |
| -3 (underexposed) | 6.3 |  | 1600 |  |
| -2 (underexposed) | 6.3 |  | 1600 |  |
| -1 (underexposed) | 6.3 |  | 1600 |  |
| 0 (perfectly exposed) | 6.3 |  | 1600 |  |
| +1 (overexposed) | 6.3 |  | 1600 |  |
| +2 (overexposed) | 6.3 |  | 1600 |  |
| +3 (overexposed) | 6.3 |  | 1600 |  |

**Standards**
TECH.8.1.8.D.CS2, TECH.8.1.8.B.CS2, TECH.8.1.8.C.CS1, TECH.8.1.8.B.CS1, SCI.MS-ETS1-4, TECH.8.1.8.D.CS1, , SCI.MS-ETS1-3, TECH.8.1.8.A.CS2, TECH.8.1.8.A.1, VPA.1.1.8.D.CS1, VPA.1.2.8.A.CS1, VPA.1.2.8.A.3, VPA.1.3.8.D.CS1, VPA.1.3.8.D.1, VPA.1.3.8.D.CS2, VPA.1.3.8.D.2, VPA.1.3.8.D.CS4, VPA.1.3.8.D.CS6, VPA.1.3.8.D.6, VPA.1.4.8.A.CS2, VPA.1.4.8.A.CS6, VPA.1.4.8.A.6, VPA.1.4.8.A.7, VPA.1.4.8.B.CS1, VPA.1.4.8.B.1, VPA.1.4.8.B.2, TECH.8.1.8.D.CS3, , SCI.MS-ETS1-2, TECH.8.1.8.A.CS1

ESSENTIAL QUESTION: How does the operator of the camera choose and control the exposure of a photograph?

OBJECTIVES:  Students will be able to recognize exposure levels of a camera; Students will be able to experiment with creating various exposure shots by adjusting settings.

MATERIALS: Canon Rebel Student Kits, Tripods

ADAPTATIONS: Redirectives, verbal prompts, one on one instructions, repeated practice, peer instruction, small group instruction, self-paced, repeated demonstrations, adjust difficulties of lessons, Google Speak,

ASSESSMENT: Observation during student discussions, observation of individual progress during project creation, final project rubric, Google Classroom submission