Technology Education Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Digital Photography Period: \_\_\_\_\_\_ Day: \_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_

Digital Photography

Understanding Camera Lenses

Directions:

This worksheet is to be completed using the website listed below. Each answer should be written in complete sentences. Provide additional information as necessary to answer the questions to the best of your knowledge.

**Go to**: http://www.cambridgeincolour.com/tutorials/camera-lenses.htm

1. Lens aberration causes what types of problems? List the 5 problems on the website and explain how each one affects picture quality.

a.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

c.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

d.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

e.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. What does focal length determine?

3. What length is considered a Normal lens? A Telephoto lens? And a Wide angle Lens?

4. What is the required focal length to take a picture of a child playing Frisbee 25 feet from the photographer and the child’s height is 49 inches, using a Digital SLR with 4/3” sensor?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. Why would longer focal lengths require shorter exposure times?

6. When using a 200 mm focal length on a 35mm camera what should the minimum exposure time be?

7. What are the two types of photo options for using a zoom lens, what does each one do?

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8. For a compact digital camera with a 3x or 4x times zoon designation refers to…?

9. What are the aperture sizes listed on the website?

\_\_\_\_\_\_ \_\_\_\_\_\_ \_\_\_\_\_\_ \_\_\_\_\_\_\_ \_\_\_\_\_\_ \_\_\_\_\_\_

10. There is a specific relationship between the F-stop number and the DOF field, Required shutter speed, and the Light gathering area fill in the chart below correctly. (Fill in the blank spaces)

|  |  |  |  |
| --- | --- | --- | --- |
| F- # | Light-Gathering Area  (Aperture Size) |  | Depth of Field |
| Higher |  | Slower |  |
|  |  |  | Narrower |

11. Indoor and sports photography requires what?

12. What is the light gathering ability of a lens that has a maximum aperture of f/2.0?

13. Finish this sentence…  
“**Lenses typically have fewer aberrations when they perform the exposure stopped down one or …”**

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14. What are the three most important things to consider when purchasing a lens?

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