**Understanding Resolution & Digital Cameras**

1. **Resolution:** Understanding digital cameras requires that we know how *resolution* works.
	* 1. Resolution is determined by how many \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (*picture elements*) or \_\_\_\_\_\_\_\_\_\_\_\_ (dots per inch) are available.
		2. An image is a \_\_\_\_\_\_\_\_\_\_\_ of small squares or circles filled in with color. The \_\_\_\_\_\_\_\_\_\_\_\_\_ squares or circles—the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the image.
2. **Measuring Resolution**
	* 1. Resolution is measured by the number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ pixels times the number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ pixels. Example: 3072 x 2304
3. **Megapixels:** The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a picture is measured by its resolution—how many pixels it has; the current measurement is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
	* 1. A megapixel is a grid containing \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ pixels (one million squares of color)—technically, that is an image with a resolution of 1024 x 1024 pixels.
4. **Resolution:** There are three different resolutions to consider: the image, monitor and printer
	* 1. Image resolution: The image’s resolution is measured in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Most cameras allow you to \_\_\_\_\_\_\_\_\_\_\_\_ the resolution before you take the picture. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the resolution—the clearer the image—the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the file size.
		2. Monitor resolution: Monitor resolution is measured in horizontal and vertical \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
		Ex: \_\_\_\_\_\_\_\_\_\_ ; If an image is taken at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, but your monitor can only display \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_—that’s as good as it gets!
		3. Printer resolution: Printer resolution is measured in dpi—\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ; The quality of the printed image is going to be determined by both the resolution of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ AND the resolution of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
5. **Point and Shoot Cameras**
	* 1. Most digital cameras designed for the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (vs. professional) are point and shoot cameras; they fall into three categories: subcompact, compact and super zoom
		2. The camera lenses are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (not \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)
		3. Basic features typically include auto \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, auto \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and built-in \_\_\_\_\_\_
		4. Not appropriate for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ photography because of \_\_\_\_\_\_\_\_\_\_\_\_ time
6. **SLR Cameras (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)**
	* 1. With an SLR camera, you see exactly what the \_\_\_\_\_\_\_\_\_\_\_\_\_ sees
		2. You can \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the lens on a digital SLR
		3. You choose the lens based on the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of photography; example: portrait photography vs. sporting events vs. landscape photography, etc.
		4. SLRs produce \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ photos than point and shoot cameras
		5. An SLR has a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ lag time, and is ideal for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ photography
7. **Other points to consider:** When purchasing a camera, you should also research the following specifications: storage capacity, transferring images, power source, LCD vs. optical view finder, zoom, image stabilization, the *Exposure Triangle*—ISO, shutter speed and aperture
	* 1. Storage devices
			1. Memorycards**:** Give two examples of memory cards
			2. What storage capacity is currently available?
		2. Internal memory (RAM): The number of pictures you can take before sending them to your computer is determined by two things: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
8. **Transferring images**
	* 1. List three methods that images can be transferred from your camera to your computer
9. **Power source**
	* 1. Regular Batteries
		2. Rechargeable batteries: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
		3. AC
10. **LCD vs Viewfinder**

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| **LCD** | **Viewfinder** |
| **PROS** | **CONS** | **PROS** | **CONS** |
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1. **Zoom**
	* 1. Optical zoom actually \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the image—measured in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
		2. example: 8X—increases an image 8 times
		3. Digital zoom takes a portion of an image and enlarges it \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; the image loses resolution when the camera enlarges it; also measured in X
		4. Macro allows you to take \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ pictures of objects that are small and enlarge them so they appear larger.
2. **Image Stabilization**
	* 1. A feature in digital cameras that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that can occur when taking a picture.
		2. Vibrations commonly occur when shooting at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ speeds, with longer \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ zoom.
		3. Also called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. **The Exposure Triangle**
	* 1. Exposure is the total amount of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ you let into your camera.
			1. Too **much** light results in an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ image where there are areas of bright white or “\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.”  These areas contain no \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
			2. Too **little** light results in an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ image which leaves parts of your image too \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to make out details.
		2. The three components to exposure are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
			1. ISO—the measurement of how \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the image sensor in the camera is to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
				1. Measured in numbers \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, etc.
				2. Use a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ number when smooth crisp images are needed and you have plenty of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
				3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ numbers are used when light is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, you do not want to use a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, or the subject is moving; may result in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ images
			2. Shutter Speed—the amount of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the shutter is \_\_\_\_\_\_\_\_\_\_\_\_—which determines how much light is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the recording process
4. Measured in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: super fast 1/2000 second to 30 seconds
5. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the speed, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ light can enter the camera. Appropriate for shooting pictures in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ situations; also great for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ action and movement
	* + 1. Aperture—the camera feature that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the amount of light that passes through the lens by controlling the size of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the lens
6. Described as the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a change in setting)
7. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the number the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_the lens will open

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