

# SkillsUSA

## 2011-12 District 10 Competition

QuickTime™ and a decompressor are needed to see this picture.

**Contest:**  
Photography

**Contest Host:**  
Danielle Wilber  
dwilber@ects.org  
(814) 464-8606

**Contest Site:**  
Erie County Technical School  
8500 Oliver Rd.  
Erie, Pa 16509  
Art and Design for Business Classroom #6



**Date and Time:**  
January 16, 2012

**Eligibility:**  
Registered SkillsUSA members enrolled in a corresponding program

**Equipment Tools and Materials Provided:**

1. Photographic studio lighting equipment
2. Hand-held electronic flash meter. Competitors may bring their own if desired.
3. Apple Mac computers w/Adobe CS5

**Contestant must bring the following equipment and tools:**

1. DSLR Camera with manual mode capability
2. Removable memory card (2 gig is recommended)
3. Suitable lenses
4. Portable Flash Unit
5. Electronic Flash Meter (Optional)
6. Hot shoe to PC adapter (if needed) for studio flash
7. One color and one black and white freelance print, both mounted, but not framed.

\*Prints should be no smaller than 8x10 and no larger than 11x14.

**Uniform and Safety Requirements:**

Contestants should follow all National SkillsUSA contest guidelines for uniforms and safety requirements.

# Scope:

Contestants may be required to demonstrate their skills in the following areas:

## A. Portrait Studio Assignment:

A. Competitors will be tested on their knowledge of portrait studio and set up including:

- I. Correct camera handling skills
- II. Lighting set-up
- III. Exposure and metering control
- IIII. Light Ratios
- IIIII. Positioning Subject

Competitors will be required to take photographs of a series of poses that demonstrate a short light pattern with a two-stop difference between the main and the fill light. Competitors must observe proper studio safety and ask the judges if there is uncertainty about how a piece of equipment works. Students are required to use at least two lights: The fill light and the main light. A small assortment of light modifiers will be available and reflectors may be used if appropriate. **The allotted time limit for this task will be 20-25 minutes.**

**\*Note** that after both studio shoots (Portrait and Product) have been completed students will pick three of their best shots to edit in Adobe Photoshop CS5. Judges will be looking for three different poses and/or lighting scenarios. Ex: Three quarter view, ½ turn, etc. Competitors should not be afraid to be creative. Artistic and candid shots are welcome and will show the judges that the contestant is able to easily direct their model.

## B. Product Studio Assignment:

A. Competitors will be tested on their knowledge of tabletop studio and set-up including:

- I. Correct camera handling skills
- II. Lighting set-up
- III. Exposure and metering control

Competitors will be required to take a series of product photos from a product line that has been selected by the judges. Competitors will use a two-light set-up - both fill and main. Competitors may use an assortment of light modifiers or reflectors as seen fit. **The allotted time limit for this task will be 20-25 minutes.**

**\*Note** that students will pick three of their best shots to edit in Adobe Photoshop CS5. Judges will be looking for three different product shots/lighting techniques.

## C. Digital Process/Workflow

A. Competitors will be tested on:

- I. Navigating through Adobe Photoshop CS5
- II. Knowledge of the color balance and correction tools in Adobe PS-CS5
- III. Use of other editing tools in Adobe Photoshop CS5

Once both photo shoots have been finished, competitors will choose three of their best shots from both the Portrait shoot and the Product shoot. They will then edit their photos to their discretion in Adobe Photoshop CS5. Judges will be looking for at least one black and white with correct tonal range from the portrait shoot. Portrait shots should be edited in PS using the portrait orientation of 8" wide by 10" high at 300dpi RGB. Product shots may be edited in the portrait orientation or landscape orientation of 10" wide by 8" high at 300dpi RGB. Competitors must be able to show/and or print both their before and after shots for judges to view. Competitors may also be required to leave their memory cards with the judges if there is not ample time to judge the competition once competitors have finished. **The allotted time limit for this task will be 45 minutes.**

## D. Written Test:

A. Competitors will be tested on:

- I. Vocabulary terms associated with photography and camera controls.  
(See attached test study guide)

The performance test will be limited to 50 questions found in the attached study guide. The *Textbook of Digital Photography* that was used as the resource for the test may be downloaded for free at: [The Textbook of Digital Photography](#)

Book: The Textbook of Digital Photography

Author: Dennis P. Curtain

Date Published: 2003

Website: [www.photocourse.com](http://www.photocourse.com)

**\*Note** that the instructors test was derived from the first edition of this .pdf book and contestants will be downloading the third edition, so there may be subtle differences in the referenced book page numbers on the study guide. **The allotted time limit for this task will be 30 minutes.** The test will be derived of multiple choice questions, matching, and true/false questions. Students will not have to write essay type answers.

## E. Print Competition:

- A. Each competitor must bring two digital prints. One color and one black and white freelance photograph. Both must be mounted, but not framed. Prints should be no smaller than 8x10 and no larger than 11x14.
- B. Prints will be judged on:
  - I. Technical and artistic aspects of the image
  - II. Ability to follow presentation guidelines
  - III. Overall Impact

# Photography Score Sheet

Items Evaluated	Possible Points	Notes/Comments	Contestant Numbers		
			#1	#2	#3
<b>Written Test</b>	<b>50</b>				
<b>Portrait Studio</b> Correct camera handling skills	<b>10</b>				
<b>Portrait Studio</b> Lighting set-up	<b>10</b>				
<b>Portrait Studio</b> Exposure and metering control	<b>10</b>				
<b>Portrait Studio</b> Light Ratios	<b>10</b>				
<b>Portrait Studio</b> Positioning Subject	<b>10</b>				
<b>Product Studio</b> Correct camera handling skills	<b>10</b>				
<b>Product Studio</b> Lighting set-up	<b>10</b>				
<b>Product Studio</b> Exposure and metering control	<b>10</b>				
<b>Digital Work Flow</b> Navigates easily through PS and can use photo editing tools	<b>10</b>				
<b>Digital Work Flow</b> Knowledge of color balance and correction tools in PS	<b>10</b>				
<b>Digital Work Flow</b> Used correct dimensions/followed layout specifications and saved files correctly	<b>10</b>				
<b>Composition</b> Creativity/Impact of Final Photos	<b>30</b> (5 pts each)				
<b>Print Competition</b> Technical/artistic aspects of the image	<b>20</b> (10pts each)				
<b>Print Competition</b> Ability to follow presentation guidelines	<b>20</b> (10 pts each)				
<b>Print Competition</b> Overall Impact	<b>20</b> (10 pts each)				
<b>Total Possible Points</b>	<b>250</b>				

# Skills USA (Districts)

## Photography Test Practice Questions & Key Vocabulary Terms

### Resource for Test:

Book: The Textbook of Digital Photography | Author: Dennis P. Curtain | Date Published: 2003

Website: [www.photocourse.com](http://www.photocourse.com)

Can be downloaded for free at: <http://paskowski.com/nebula/acarr/pick-up/text-0-8-copy.pdf>

### Q1: Digital Images are formed from what? (Pg. 8)

A1: Digital images are formed from tiny dots of red, green and blue color. The Dots, usually millions, blend into continuous tones

### Q2: What is auto exposure? (Pg. 14)

A2: Measures light reflecting from various parts of the scene and uses these readings to set the best possible exposure.

### Q3: When you press the shutter button half way down what happens? (Pg. 14)

A3: The camera locks focus and exposure.

### Q4: What happens when light is too dim? (Pg. 14)

A4: The Auto exposure system will usually fire the camera's built-in-flash to illuminate the scene.

### Q5: What is Automatic White Balance? (Pg. 14)

A5: Because color cast in a photo is affected by the light illuminating the scene, the camera automatically adjusts color balance to make white objects in the scene look white in the photo.

### Q6: Which image formats are higher quality or resolution? (Pg. 14)

A6: TIF and Raw

### Q7: When taking photo's – what is the correct way to hold your camera? (Pg. 20)

A7: Hold the right side of the camera with your right hand while supporting the lens or camera body with your left. Do not block the flash auto focus, port, or lens

### Q8: Who is famous for his photograph's that capture that "decisive moment"? (Pg. 20)

A8: Henry Cartier-Bresson

### Q9: How many delays are built into a digital camera and what are they called? (Pg. 20)

A9: 2, First Delay is called the refresh rate and the second Delay is called the recycle time.

### Q10: What is a buffer in your camera? (Pg. 20)

A10: Very Fast Memory

### Q11: How quickly a photo is captured is called the? (Pg. 20)

A11: Frame Rate

### Q12: What happens when your digital camera is set to continuous mode? (Pg. 21)

A12: When you hold down the shutter button the camera continues to take pictures one after another until the buffer is full.

### Q13: What is aperture? (Pg. 23)

A13: A whole that can be made smaller or larger to control the amount of light that enters the camera.

**Q14: What is the shutter's job? (Pg. 23)**

**A14:** The shutter can be opened or closed to control the length of time the light is allowed to enter.

**Q15: What is the purpose of the Lens? (Pg. 23)**

**A15:** The lens brings light from the scene into focus inside the camera so that it can expose an image.

**Q16: What is the biggest difference between traditional film cameras and digital? (Pg. 23)**

**A16:** How an image is captured.

**Q17: What is an image sensor and what is its purpose? (Pg. 23 & 24)**

**A17:** The image sensor is a charge-coupled device (CCD) and captures single pixels in the photograph to be.

**Q18: What are the 2 image sensors that are used in digital cameras? (Pg. 24)**

**A18:** CCD and CMOS

**Q19: What happens when you press the shutter button of a digital camera? (Pg. 25)**

**A19:** A metering cell measures the light coming through the lens and sets the aperture and shutter speed for the correct exposure.

**Q20: Pixels on an image sensor can only capture brightness, not color. True or False (Pg. 25)**

**A20:** False

**Q21: Who discovered how to make color photographs? (Pg. 25)**

**A21:** James Clerk Maxwell

**Q22: What 3 primary colors are photographs based on? (Pg. 25)**

**A22:** Red, Green, Blue

**Q23: What is placed over individual pixels on the image sensor to produce color in film? (Pg. 25)**

**A23:** Red, Green, and Blue Filters.

**Q24: How many colors can the human eye distinguish? (Pg. 27)**

**A24:** 16 Million

**Q25: When shooting photos the image size you choose to capture it has a big effect on how large it can be displayed on a screen or how large it can be printed. True or False. (Pg. 28)**

**A25:** True

**Q26: What is the best image size for the web? (Pg. 30)**

**A26:** 640x480

**Q27: What is the best image size for laser or inkjet printers? (Pg. 30)**

**A27:** 200-300 pixels or dots per inch.

**Q28: Even though you can make adjustments to a poorly exposed image in a photo-editing program, why should you practice overriding your exposure settings on your digital camera? (Pg. 67)**

**A28:** So you do not lose important shadow and highlight information

**Q29: What 2 settings on your digital camera affect the exposure and total amount of light that control how light or dark an image is? (Pg. 68)**

**A29:** The shutter speed and aperture settings.

**Q30: A fast shutter speed lets light in for a short time. True or False (Pg. 68)**

**A30:** True

**Q31: A slow shutter speed lets in light for a long time. True or False (Pg. 68)**

**A31:** True

**Q32: A large aperture lets in bright light. True or False (Pg. 68)**

**A32:** True

**Q33: A smaller aperture lets in dim light. True or False (Pg. 68)**

**A33:** True

**Q34: Both the shutter speed and aperture can be changed in fixed amounts called? (Pg. 68)**

**A34:** Stops or Finger Stops known as f-stops

**Q35: Increasing the exposure does what? (Pg. 68)**

**A35:** Lightens the picture

**Q36: Decreasing the exposure does what? (Pg. 68)**

**A36:** Darkens the picture.

**Q37: Which exposure mode chooses your aperture and shutter seed for you so that you can focus on your composition and action? (Pg. 69)**

**A37:** Auto Mode

**Q38: Which modes are designed for specific situations such as portraits, landscapes, night scenes, panoramas, and movies? (Pg. 69)**

**A38:** Scene Specific Modes

**Q39: Which mode gives you different combinations of aperture and shutter speed. (Pg. 69)**

**A39:** Programmed AE mode

**Q40: Which mode lets you select the aperture (lens opening) while the camera is automatically selecting the shutter speed? (Pg. 69)**

**A40:** Aperture Priority Mode

**Q41: Which mode lets you choose the shutter speed while the camera is automatically selecting the aperture? (Pg. 69)**

**A41:** Shutter Priority mode

**Q42: Which mode allows you to change the shutter speed and aperture to whatever you want? (Pg. 69)**

**A42:** Manual Mode

**Q43: What mode do you select when depth of field is most important? (Pg. 69)**

**A43:** Aperture Priority Mode

**Q44: To make sure everything is sharp such as in a landscape, what aperture should you set?**

(Pg. 69)

**A44:** Small

**Q45: To throw a background out of focus so that the main subject stands out, what type of aperture should you set? (Pg. 69)**

**A45:** Large

**Q46: You choose this mode when the portrayal of motion is the most important. It lets you set your shutter speed fast enough to freeze the action or slow enough to blur it. (Pg. 69)**

**A46:** Shutter Priority Mode.

**Q47: Which scene specific exposure mode sets the camera for minimum depth of field, so a portrait will have a soft, less distracting background? (Pg. 70)**

**A47:** Portrait mode

**Q48: Which scene specific exposure mode sets the camera to maximum depth of field so everything is sharp from foreground to background? (Pg. 70)**

**A48:** Landscape

**Q49: This scene specific exposure mode is used to capture flowers and other small objects? (Pg. 70)**

**A49:** Close-up or Macro

**Q50: This scene specific exposure mode is ideal for action sports and other fast moving objects? (Pg. 70)**

**A50:** Sports

**Q51: This scene specific exposure mode is designed for photographing people or other nearby subjects at twilight, night or dawn? (Pg. 70)**

**A51:** Night portrait or twilight mode

**Q52: This scene specific exposure mode is uses a slow shutter speed to capture a landscape and especially a cityscape in the light of dawn, dusk, or night? (Pg. 70)**

**A52:** Night Landscape

**Q53: This scene specific exposure mode captures monochrome images? (Pg 70)**

**A53:** Black and white or sepia mode.

**Q54: This scene specific exposure mode helps you align a series of photos so that can be stitched together. (pg. 70)**

**A54:** Panoramic mode

**Q55: The length of time the shutter is open affects both the exposure of the image and how camera or subject movement is portrayed. True or False? (Pg. 71)**

**A55:** True

**Q56: The longer the shutter is open, the less likely you are to cause blur by moving the camera slightly. True or False? (Pg. 71)**

**A56:** False

**Q57: If I were shooting a landscape, would I want a smaller or larger aperture? Why? (Pg. 73)**

**A57:** Smaller aperture - So you could get maximum depth of field this way everything from near foreground to distant background can be in focus and sharp.

**Q58: If I were working in portrait photography, would I want a smaller or larger aperture? Why? (Pg 73)**

**A58:** I would want a larger aperture to decrease the depth of field so the subjects face is sharp and the background is soft and out of focus.

**Q59: Aperture settings are called what? (Pg. 74)**

**A59:** f-stops

**Q60: When is manual mode most often used? (Pg.75)**

**A60:** When doing studio like shots when you know the right exposure for the main subject but want to try different lighting variations in the background.

**Q61: What does the meter measure? (Pg. 76)**

**A61:** The meter measures only brightness or how light or dark the scene is.

**Q62: What happens when there is too much exposure? (Pg. 79)**

**A62:** The image is too light and the detail is lost in the highlights.

**Q63: What happens when there is too little exposure? (Pg.79)**

**A63:** The image is too dark and the details are lost in the shadows.

**Q64: Should you underexpose or overexpose to silhouette an object in the foreground? (Pg. 82)**

**A64:** Underexpose

**Q65: How can you deal with high contrast scenes? (Pg. 83)**

**A65:** 1. Move close enough so the most important area fills the viewfinder then lose exposure lock to lock in that shot. 2. Lighten the shadows by adding a fill flash.

**Q66: Name a few hard to meter scenes...(Pg. 84)**

**A66:** Neon street signs, spotlight circus acts, fireworks, moonlit scenes, scenes with a variety of lighting, and when you have a small subject against a wide expanse of sky.

**Q67:** When confronted with any subject lighter or darker than middle grey, you use exposure compensation to lighten or darken the photograph. True or False (Pg. 85)

**A67:** True

**Q68: How do you lighten a photo manually on your digital camera & when should you do this? (Pg. 85)**

**A68:** Increase the exposure (+) Useful for setups where the backgrounds are much lighter than the subject, or photographing light scenes such as snow, fog, and beach scenes.

**Q69: How do you darken a photo manually on your digital camera & when should you do this? (Pg. 85)**

**A69:** Decrease the exposure (-) Useful where setups are much darker than the subject or when photographing dark objects such as the forest or dark backgrounds.

**Q70: What is exposure lock? (Pg. 86)**

**A70:** Point the camera at an object and press the shutter button halfway down to lock in exposure and focus.

**Q71: What is auto exposure bracketing? (Pg. 86)**

**A71:** To ensure you get the best exposure you shoot 3 images. One at the camera's suggested settings, one decreasing the exposure (-), and one increasing the exposure. Now you will have 3 different exposed shots.

**Q72: What is a histogram? (Pg. 88)**

**A72:** A graph that shows how the 256 possible levels of brightness are distributed in the picture.

**Q73: Name one reason to check the histogram of your image. (Pg.88)**

**A73:** To see if there are enough pixels in the shadow, mid, and highlight area's of your photo.

**Q74: Why does a colorful object such as a leaf appear green? (Pg. 106)**

**A74:** Because when light white strikes it, the leaf reflects only the green wavelengths of light and absorbs the others.

**Q75: Many digital cameras have adopted a color space called what? (Pg. 107)**

**A75:** sRGB

**Q76: What is the color of light specified by? (Pg. 108)**

**A76:** Color Temperature

**Q77: List in order the colors from coolest to warmest as color temperature increases: (Pg. 108)**

**A77:** Red, orange, yellow, white, and blue white.

**Q78: Daylight contains light from which end of the color spectrum? (Pg. 108)**

**A78:** Blue

**Q79: Why would you want to take advantage of your digital camera's white balance system? (Pg. 108)**

**A79:** To adjust your pictures to make them look like they were shot in daylight.

**Q80: If you like the warm glow of incandescent lights such as candles, you would capture that look by setting your white balance to what setting? (Pg. 108)**

**A80:** Daylight

**Q81: If light reflected from a blue sky is illuminating shadow areas, what color will these shadow areas appear to be in your photo if you are using your automatic exposure settings? (Pg. 110)**

**A81:** Blue

**Q82: What does the saturation control on your digital camera allow you to do? (Pg. 110)**

**A82:** Increase or decrease the intensity of color.

**Q83: Raw mode utilizes a white balance setting. True or False (Pg. 110)**

**A83:** False

**Q84: What does a color meter do? (Pg. 110)**

**A84:** Measures the color temperature of a scene allowing you to get perfect color.

**Q85: Between what hours of the day do colors appear clear, bright, and accurate in a photo? (Pg.111)**

**A85:** Between 10am & 2pm

**Q86: When are the colors in the sky often the richest? (Pg. 112)**

**A86:** A half hour before the sun rises and a half hour before the sun sets.

**Q87: What are the benefits of photographing in “bad” weather such as rain, snow, fog, or mist? (Pg. 114)**

**A87:** Objects at a distance often appear diffused and grey in such weather, with foreground objects brighter than normal because they are seen against a muted background.

**Q88: Under what circumstances would you want to turn your flash off at night? (Pg. 116)**

**A88:** When you want to capture just the light sources in your photo such as street lights, headlights, neon signs, fireworks, illuminated buildings or fires.

**Q89: When you photograph with long shutter speeds, usually above one second, what happens? (Pg. 117)**

**A89:** The image sensor collects noise and noise appears as grain in the images reducing sharpness and making the photo appear fuzzy.

**Q90: How can you eliminate noise when you are photographing an image? (Pg. 117)**

**A90:** Use noise reduction mode if your digital camera has that setting.

**Q91: What is the purpose of the bulb setting on your digital camera? (Pg. 117)**

**A91:** Cancels the flash and keeps the shutter open as long as you hold down the shutter button.

**Q92: Name 6 tips for photographing at night. (Pg. 117)**

**A92:**

1. Use noise reduction mode.
2. Switch to manual exposure mode and use bulb.
3. Try slow Sync Flash for unusual lighting effects.
4. Increase the ISO
5. If focus is a problem, switch to infinity or manual focus.
6. Use self-timer, remote control, or cable release to trigger the shutter button without moving the camera.

**Q93: This setting lets you lighten what would otherwise be a black background when you use your flash at night? (Pg. 118)**

**A93:** Slow Sync

**Q94: Why is the direction that light is coming from relative to your camera’s position so important? (Pg 119)**

**A94:** Because it affects the shadows that will be visible in your picture.

**Q95: What type of lighting would I choose if I wanted silhouettes in my picture? (Pg. 119-120)**

**A95:** Back Lighting

**Q96: This type of lighting increases the sense of texture because cross lighting casts shadows that emphasize surface details. (Pg. 119)**

**A96:** Side Lighting

**Q97: This type of lighting decreases visible shadows and minimizes the apparent roundness or volume of your subject. (Pg. 119)**

**A97:** Front Lighting

**Q98: This type of lighting casts shadows in eye sockets and illuminates the top of the nose brightly. (Pg. 121)**

**A98:** Top Lighting

**Q99: Direct light coming mainly from one direction produces what? (Pg. 122)**

**A99:** Relatively high contrast between bright highlights and dark shadows. Which in turn causes dark, hard-edged shadows that crisply outline details.

**Q100: What can you tell me about diffused light and how does it affect the brilliance of colors? (Pg. 122)**

**A100:** Diffused light generally bounces onto its subject from several directions lowering contrast. Contrast in return is what affects the brilliance of colors, the amount of texture and detail, plus other visual characteristics in your photos.

**Q101: Give me one example of diffused light and one example of direct light (Pg. 122)**

**A101:** Diffused light comes from a light source that is so large compared to its relative subject that it comes from many different directions – such as a hazy or overcast day or indoor lighting bounced off from an umbrella. Direct light comes from a point source such as the sun on a very bright, clear day.

**Q102: What is the problem if none of your image is sharp, or if your main subject is not sharp and other parts of the photograph are. (Pg 90)**

**A102:** Your camera was improperly focused.

**Q103: What is the problem if your central subject is sharp but the background or foreground is not sharp? (Pg. 90)**

**A103:** You didn't have enough depth of field.

**Q104: What is the problem if the image is blurred all over, with no sharp part and the edges appear to be blurred. (Pg. 90)**

**A104:** The camera was moved during exposure.

**Q105: What is the problem when some of the picture is sharp, but a moving subject appears to be blurred? (Pg. 90)**

**A105:** Your shutter speed is too low.

**Q106: What is the major cause of unsharp photos and how do you fix this problem? (Pg. 91)**

**A106:** If you have bright light or you are using the flash, If you hold the camera steady and depress the shutter release smoothly, you should be able to achieve sharper photos. If you are in dim light you will need camera support.

**Q107: Why is it sometimes better to use the viewfinder to take photos? (Pg. 91)**

**A107:** You can brace the camera against your face instead of holding it out at shaky arms length.

**Q108: The best tripod has what 3 parts? (Pg. 92)**

**A108:** Leg set, head, and quick release system.

**Q109: Using a self-timer, remote control, or cable release socket will let you release the shutter without moving or vibrating the camera which will reduce the blur when photographing in dim light. True or False (Pg. 92)**

**A109:** True

**Q110: The higher the ISO number the less light is needed for exposure. True or False (pg. 93)**

**A110:** True

**Q111: What can you do to keep your ISO from increasing? (Pg. 93)**

**A111:** Take your camera's auto settings off from Auto and set your ISO to the lower number

**Q112: Increasing your camera's ISO (increasing sensitivity) adds noise to your image and causes your image to look "fuzzy." True or False? (Pg. 93)**

**A112:** True

**Q113: Although noise is a problem, in what cases would you want to increase the ISO and why? (Pg. 93)**

**A113:** When you increase the ISO (allow more light to come in) you can use a faster shutter speed to freeze action. This is good for places such as concerts or museums where flash is prohibited.

**Q114: What are some of the factors that affect the way motion is captured in images? (Pg. 94)**

**A114:** Sensor speed, overall brightness of the scene, lens focal length and subject speed, direction, and distance.

**Q115: You may lose sharpness if you do not have enough depth of field. True or False (Pg. 94)**

**A115:** True

**Q116: Name some factors that affect depth of field. (Pg. 94)**

**A116:** Several factors affect depth of field, including lens aperture, lens focal length, and subject distance.

**Q117: Shallow depth of field can focus attention on a foreground subject by making the background less sharp. True or False (Pg. 94)**

**A117:** True

**Q118: What is a good tip to capture fast action? (Pg. 95)**

**A118:** Point the camera toward where the action will occur and press the shutter button halfway down to set focus and exposure. Hold the button down until the action happens and you'll be able to get a shot off a lot faster.

**Q119: To show a moving subject sharply in your photo what needs to happen? (Pg. 95)**

**A119:** The shutter needs to open and close before the image focused onto the sensor moves a significant amount – in other words you need to use a fast shutter speed.

**Q120: The faster a subject is moving, the faster the shutter speed you need for a sharp image. True or False? (Pg. 95)**

**A120:** True

**Q121: The closer you are to your subject (or zoomed in) while your subject is moving, the less blurry your photo will turn out. True or False? (Pg. 96)**

**A121:** False

**Q122: List a few ways to increase sharpness of moving objects. (Pg. 96)**

**A122:** Photograph fast moving subjects heading toward or away from you. Move farther back from the subject. Zoom the lens to a wider angle of view. Switch to shutter priority mode and select a fast shutter speed such as 1/500. Increase the sensor's sensitivity to light although this adds some grain to the image.

**Q123: Objects within the depth of field become less and less sharp the farther they are from the plane of critical focus. True or False? (Pg. 98)**

**A123:** True

**Q124: What do you do if you want a large part of your scene to be sharp?**

**A124:** Increase your depth of field

**Q125: How do you control your depth of field? (Pg. 98)**

**A125:** Switch to aperture-priority mode and select a small aperture for great depth of field or a large aperture for shallow depth of field.

**Q126: What is the biggest problem with using Auto Focus? (Pg. 99)**

**A126:** Getting it to focus on the right part of the object.

**Q127: Name 6 focus options on digital cameras and what they do. (Pg. 99)**

**A127:**

1. Single AF – focuses only when you press the shutter button halfway down.
2. Continuous AF keeps the camera focused at all times.
3. Servo AF adjusts focus continuously as long as you hold the shutter button halfway down. If the subject moves, the camera keeps it in focus as long as it's covered by one of the focus areas.
4. Predictive AF tracks a subject moving toward or away from you and predicts where it will be when the shutter opens.
5. Manual focus is useful when the other focus modes don't work well or when you want to precisely place the plane of critical focus.
6. Focus Assist Illuminators light when you press the shutter button half way down to help the camera focus in dim light.

**Q128: When you press the shutter button down half way, what does it set? (Pg. 100)**

**A128:** Focus, exposure, and white balance.

**Q129: Focusing on the most distant part of your scene wastes what? (Pg. 100)**

**A129:** Two-thirds of your depth-of-field

**Q130: What is hyperfocal distance? (Pg. 100)**

**A130:** Defined as the point closest to the camera on which you can focus while still keeping things at infinity in focus.

**Q131: To control how deep or shallow your depth of field is, which three factors do you have to work with? (pg 101)**

**A131:** Aperture size, camera – to –subject distance, Lens focal length

**Q132: Define camera-to-subject distance/ (Pg. 101)**

**A132:** As you move farther from the subject you are focused on, you increase depth of field. As you move closer you decrease it.

**Q133: Maximum depth of field is important for what types of photographs? (Pg. 103)**

**A133:** Landscapes and Portraits

**Q134: What can you do when you want maximum depth of field for your shot? (Pg. 103)**

**A134:** Don't focus on the part of the setup closest to the camera. Increase the light on the setup so you can use a smaller aperture. Zoom the lens out to a wider angle of view. Move farther away from the subject. Switch to aperture-priority mode and select a small aperture such as f/11. Switch to the infinity focus mode on your camera.

**Q135: How can you attract your viewers attention to the most important part of the scene? (Pg. 104)**

**A135:** By restricting your depth of field so that the significant elements are sharp while the foreground and background are less so.

**Q136: When using selective focus, what are some of the things you can do to reduce depth-of-field? (Pg. 104)**

**A136:** Reduce the light on the setup so you can use a wider aperture. Zoom the lens in to enlarge the subject. Move closer to the subject. Switch to aperture-priority mode and select a large aperture such as f/4. Focus in front of or behind the subject to waste some depth of field.

**Q137: Why would you want to blur an image? (Pg 105)**

**A137:** To contribute a feeling of motion in the image that may be missing from a more static shot.

**Q138 What are some of the things you can do to convey the feeling of motion in your picture? (Pg. 105)**

**A138:** Shift to shutter priority mode and pick a slow shutter speed. Panning the camera in the same direction as a moving subject. Use low light (keep flash off)

**Q139:** The color of light is specified by its \_\_\_\_\_ in \_\_\_\_\_ (pg.108)

**A139:** color temperature, degrees Kelvin

**Q140:** Many digital cameras have adapted a color space called \_\_\_\_\_. (pg.107)

**A140:** sRGB

**Q141:** What are the 6 most likely color temperatures and their degrees in Kelvin that you are likely to encounter when taking photographs? (Pg. 107)

**A141:**

Incandescent — 3,000°K

Fluorescent — 4,200°K

Direct Sunlight — 5,200°K

Flash — 5,400°K

Cloudy — 6,000°K

Shade — 8,000°K

**Q142:** One way to ensure that you get perfect color when taking photographs is to use a \_\_\_\_\_. (Pg.110)

**A142:** Color meter

## **Vocabulary Terms:**

### **Ambient Light**

The available light completely surrounding a subject. Light already existing in an indoor or outdoor setting that is not caused by any illumination supplied by the photographer.

### **Angle Of View**

The area of a scene that a lens covers or sees. Angle of view is determined by the focal length of the lens. A wide-angle lens (short-focal-length) includes more of the scene-a wider angle of view-than a normal (normal-focal-length) or telephoto (long-focal-length) lens.

**Aperture:** The lens opening formed by the diaphragm inside the lens. The size of the whole can be made larger or smaller by the auto focus system of the manual control.

**Aperture Maximum** – The largest size of the hole through which light enters the camera.

### **APO**

Apochromatic; a type of lens which focuses different wavelengths of light on the filmplane for improved image sharpness. Especially useful in telephoto lenses. (Chromatic aberration is corrected).

### **Aspect Ratio**

The ratio of width to height in photographic prints - 2:3 in 35 mm pictures to produce photographs most commonly measuring 3.5 x 5 inches or 4 x 6 inches; Advanced Photo System cameras deliver three aspect ratios as selected by the user.

### **Autofocus (AF)**

System by which the camera lens automatically focuses the image of a selected part of the picture subject.

**Automatic Exposure:** A mode of camera operation where the camera automatically controls the aperture, shutter speed or both for proper exposure.

### **Backlighting**

Light coming from behind the subject, toward the camera lens, so that the subject stands out vividly against the background. Sometimes produces a silhouette effect.

### **Bracketing**

Take a series of pictures at different exposures.

**CCD:** Charge coupled device. An image sensor that uses the charges built up on the sensors photosites a row at a time.

**Color Depth:** The numbers of bits assigned to each image and the number of colors that can be created from those bits. True color uses 24 bits per pixel to render 16 million colors.

### **Composition**

The pleasing arrangement of the elements within a scene-the main subject, the foreground and background, and supporting subjects.

**Compression:** The process of reducing the size of a file.

**Contrast**

The range of difference in the light to dark areas of a negative, print, or slide (also called density); the brightness range of a subject or the scene lighting.

**Cropping**

Printing only part of the image that is in the negative or slide, usually for a more pleasing composition. May also refer to the framing of the scene in the viewfinder.

**Digital Imaging**

The new evolution of the art of photography where images are scanned into an electronic format and then "processed" with software such as [Adobe Photoshop](#).

**Depth of Field**

The amount of distance between the nearest and farthest objects that appear in acceptably sharp focus in a photograph. Depth of field depends on the lens opening, the focal length of the lens, and the distance from the lens to the subject.

**Depth of Focus**

The distance range over which the film could be shifted at the film plane inside the camera and still have the subject appear in sharp focus; often misused to mean depth of field.

**Double Exposure**

Two pictures taken on one frame of film, or two images printed on one piece of photographic paper.

**Exposure**

Light striking a sensitized material (film or paper emulsion).

**Exposure Compensation**

Modifying the shutter speed and/or lens aperture recommended by the camera's light meter in order to produce special creative effects or to meet special requirements.

**Fill-Flash**

Exposure consisting of a combination of flash and "available light" balanced to produce a pleasing mix of the two.

**Fill-In Light**

Additional light from a lamp, flash, or reflector; used to soften or fill in the shadows or dark picture areas caused by the brighter main light. Called fill-in flash when electronic flash is used.

**Filter**

A colored piece of glass or other transparent material used over the lens to emphasize, eliminate, or change the color or density of the entire scene or certain areas within a scene.

**f-Number**

A number that indicates the size of the lens opening on an adjustable camera. The common f-numbers are f/1.4, f/2, f/2.8, f/4, f/5.6, f/8, f/11, f/16, and f/22. The larger the f-number, the smaller the lens opening. In this series, f/1.4 is the largest lens opening and f/22 is the smallest. Also called f-stops, they work in conjunction with shutter speeds to indicate exposure settings.

**Focal Length:** The distance from the optical center of a lens to the image plane when the lens is focused to infinity.

### **Focus**

Adjustment of the distance setting on a lens to define the subject sharply.

**Focus Lock** – The ability to point at one part of a scene and hold the shutter button halfway down to lock in exposure and focus settings when you point the camera elsewhere to compose the scene.

### **Foreground**

The area between the camera and the principal subject.

### **Frontlighting**

Light shining on the side of the subject facing the camera.

### **Hot Shoe**

A mounting device, usually built onto the top of a camera, that enables a flash unit, or speedlight, to be mounted on and triggered by the camera.

### **Hyperfocal Distance**

Distance of the nearest object in a scene that is acceptably sharp when the lens is focused on infinity.

**Image Sensor** – A solid-state device containing a photo site for each pixel in the image. Each photo site records the brightness of the light that strikes it during an exposure.

**Image Sensor** – A solid-state device containing a photo site for each pixel in the image. Each photo site records the brightness of the light that strikes it during an exposure.

### **ISO**

International Standards Organization; the number represents the film's sensitivity to light. A higher ISO number indicates the film is more sensitive and requires less light for a proper exposure.

**Interpolation:** Adds extra pixels to the picture – can be done with some zoom lenses.

### **LCD panel**

Liquid Crystal Display on cameras that shows such information as remaining exposures, flash status and aspect ratio selected.

### **Lens Speed**

The largest lens opening (smallest f-number) at which a lens can be set. A fast lens transmits more light and has a larger opening than a slow lens.

### **Macro Focusing**

Macro focusing, applied to zoom lenses, moves the lens group(s), enabling the lens to focus closer than the normal focusing distance from close-up shooting.

### **Negative**

The developed film that contains a reversed tone image of the original scene.

**Optical Viewfinder** – A separate small window on the camera through which you look to compose images.

**Overexposure**

A condition in which too much light reaches the film, producing a dense negative or a very light print or slide.

**Panning**

Moving the camera so that the image of a moving object remains in the same relative position in the viewfinder as you take a picture.

**Panorama**

A broad view, usually scenic.

**Polarizing Screen (Filter)**

A filter that transmits light traveling in one plane while absorbing light traveling in other planes. When placed on a camera lens or on light sources, it can eliminate undesirable reflections from a subject such as water, glass, or other objects with shiny surfaces. This filter also darkens blue sky.

**Positive**

The opposite of a negative, an image with the same tonal relationships as those in the original scenes-for example, a finished print or a slide.

**Processing**

Developing, fixing, and washing exposed photographic film or paper to produce either a negative image or a positive image.

**Rangefinder**

A device included on many cameras as an aid in focusing.

**Reflector**

Any device used to reflect light onto a subject.

**Reciprocity**

Most films are designed to be exposed within a certain range of exposure times-usually between 1/15 second to 1/1000 second. When exposure times fall outside of this range-becoming either significantly longer or shorter-a film's characteristics may change. Loss of effective film speed, contrast changes, and (with color films) color shifts are the three common results. These changes are called reciprocity effect.

**Resolution:** An indication of the sharpness of an image on a printout or a display screen. Based on the number and density of the pixels used. The more pixels used the more details can be seen and the higher the resolution.

**Rule of Thirds:** Rule that divides the photograph being taken into 9 equal parts.

**Pixelization:** An effect seen when you enlarge an image too much and the pixels become too obvious.

**Saturation**

An attribute of perceived color, or the percentage of hue in a color. Saturated colors are called vivid, strong, or deep. Desaturated colors are called dull, weak, or washed out.

**Shutter** - Blades, a curtain, plate, or some other movable cover in a camera that controls the time during which light reaches the film.

**Shutter Speed** - How fast the camera's shutters open. Determines how long the film is exposed for.

### **Shutter Priority**

An exposure mode on an automatic or autofocus camera that lets you select the desired shutter speed; the camera sets the aperture for proper exposure. If you change the shutter speed, or the light level changes, the camera adjusts the aperture automatically.

### **Sidelighting**

Light striking the subject from the side relative to the position of the camera; produces shadows and highlights to create modeling on the subject.

**SLR:** Single Lens Reflex – A type of camera which is used for viewing and taking the picture.

**Soft Lighting** - Lighting that is low or moderate in contrast, such as on an overcast day.

**Spot Metering Mode:** Auto exposure is based on a meter reading of a small circle in the center of a viewfinder.

**Shutter Speed** - How fast the camera's shutters open. Determines how long the film is exposed for.

### **Telephoto Lens**

A lens that makes a subject appear larger on film than does a normal lens at the same camera-to-subject distance. A telephoto lens has a longer focal length and narrower field of view than a normal lens.

**Tint** - Shades of white in a finished print, controlled by the color of the paper, varying from white to buff.

**Tone** - The degree of lightness or darkness in any given area of a print; also referred to as value. Cold tones (bluish) and warm tones (reddish) refer to the color of the image in both black-and-white and color photographs.

**Tungsten Light** - Light from regular room lamps and ceiling fixtures, not fluorescent.

**Under Exposure:** Exposing the scene to less light than is needed to render the scene as the eye sees it. Results are a photograph that is too dark.

**White Balance:** An automatic or manual control which adjusts the brightness part of a scene so that it looks white.

### **Wide-Angle Lens**

A lens that has a shorter focal length and a wider field of view (includes more subject area) than a normal lens.

### **Zoom Lens**

A lens in which you adjust the focal length over a wide range. In effect, this gives you lenses of many focal lengths.