

VOCABULARY FOR PHOTOGRAPHY

Fact Sheet (Page 157 in the student workbook)

Goal: To introduce the vocabulary for photography

Aperture

The opening in a photographic lens that admits light. The shutter speed determines how long light hits the camera's sensor. The aperture determines how much light gets through.

Candid Photo

An action photo that tells a story or captures a moment. With the exception of group pictures or individual mug shots, yearbook photos are candid photos.

Center of interest

The subject of a photo.

Cropping

Eliminating excess content to leave only the area of the picture you would like reproduced in the yearbook.

Dominant Photo

The largest, most dynamic photo on a spread. Typically, the dominant photo is two to two-and-a-half times larger than any other photo on the spread.

Depth of Field

The distance in front and behind the subject of a photo that is in acceptable focus, the zone of sharpest focus.

Enterprise Photography

To walk around looking for interesting candid subjects or events to shoot.

Framing

To surround or frame the center of interest with another object (for example, a doorway) to attract the audience's attention to the primary subject of the photo.

ISO

The number that indicates the camera's sensitivity to light. The higher the number, the less light you need, BUT the noisier (grainier) the photograph looks.

Leading Lines

Lines the eye follows in a photograph, particularly lines running from the foreground to the background.

Megapixel

A unit equal to one million pixels. A term used to describe resolution; the more pixels in an image, the higher the resolution of that image.

Mug Shot

A straightforward head-and-shoulders shot.

Photo Composition

The arrangement of objects in a photograph.

Photo Op (Opportunity)

A staged event, usually a pep rally or other official school function on campus (or can be off campus).

Resolution

The number of pixels that make up a digital image. Measured in dots per inch, resolution determines the quality of detail in an image. The higher the resolution, the more pixels per inch. The more pixels per inch, the greater the detail. An image with low resolution, 72 dpi for example, will not reproduce well in a yearbook. A resolution of 300 dpi is recommended for optimal print quality.

SD Card

Digital image storage device.

Selective Focus

The technique in which the subject of a photograph is in sharp focus while elements around it are not. An object in sharp focus will be isolated from blurred surroundings.

Shutter Speed

The measurement of how long the camera's shutter remains open as a picture is being taken. The aperture and the shutter speed together determine how much light hits the camera's sensor and for how long.

Soft Focus

The image is not sharply focused.

HANDLING YOUR CAMERA

Fact Sheet (Page 158 in the student workbook)

Goal: To provide students with reference materials for handling a single lens reflex camera

If many of your photos are blurry, camera movement or slow shutter speed is likely to blame. Generally speaking, a photographer with steady hands can capture clear images with the shutter speed running as slow as 1/60 of a second. If the shutter speed is dialed down any further, the photographer will need to steady the camera somehow. Using a tripod or monopod is the best way to steady the camera and avoid camera movement. When a tripod or monopod is not available, the photographer can steady the camera on a table, chair or desk. If that is not possible, find something to lean on.

With your weight on one foot, stand with your knees bent slightly. Keep your elbows close to your chest.



Holding Your Camera

- Adjust the neck strap so the camera hangs at a comfortable height.
- Stand with your knees slightly bent.
- Put your weight on one foot and use the other foot for balance. The balance foot should be slightly ahead of the other foot.
- Keep your elbows close against your chest to form a natural tripod.
- Cradle the camera firmly in your left hand, and focus with the left thumb and middle finger, freeing the right hand for manipulating the shutter and other controls. The entire camera/lens rig should be cradled. The weight of a long, fast lens could actually pull the lens mount out of alignment if the lens is not cradled (this could cause focus issues). The weight of the camera should rest in the palm of the cradling hand while the thumb and forefinger manipulate the zoom or focus controls.

Your left hand is responsible for cradling the camera and focusing. Your right hand squeezes the shutter.



Hold the camera close to your head. Use your index finger to squeeze the shutter.



- Hold the camera tightly against your head, and keep both eyes open when looking through the viewfinder. Resist the urge to close one eye.

Shooting a Picture

- Inhale deeply. Let out a little air, shoot, then finish exhaling.
- Gently squeeze the shutter. Do not punch it down or jab at it.

LIGHTING

Fact Sheet (Page 159 in the student workbook)

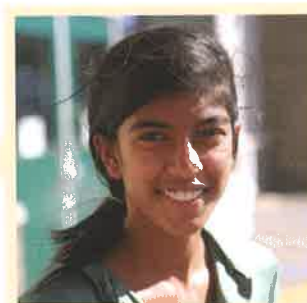
Goal: To demonstrate the different types of light

Goal: To provide guidelines for using different types of light

Light is to the photographer what color is to the painter. You need light to “paint” the image, so you should be concerned about how light can make your image more interesting.

Direct Sunlight

Open sun in the middle of the day can create unflattering shadows and highlights on the face, as in the photograph to the right.



Using Direct Sun

Move the subject into the shade or use flash outdoors to fill in the shadows on the face.

Indirect Sunlight

The indirect sunlight found in the shade of a tree or in a doorway will soften the shadows on the face, as in the photograph to the right. Photos shot in shade may need some flash fill for proper exposure. Shoot several images first to determine if flash fill is needed or not.



Using Indirect Sunlight

Find a spot where both the subject of the photo and the background are in shade. A sunny background will make your subject too dark, but you may still need some flash fill for a properly exposed image.

Hazy or Cloudy Sun

A hazy or cloudy day will provide diffused sunlight, so there will be an even distribution of light without harsh shadows, as in the photograph to the right.



Using Hazy or Cloudy Sun

Take advantage of soft light. Your subjects won't be squinting.

Backlight

Place the sun behind the subject, so the subject creates its own shade. Backlight solves the problem of squinting eyes.

Using Backlight

Shooting directly into light can be difficult, so take several photos and use a light meter if one is available. Also, if the sun is intense enough at the time the picture was shot, the subject may be nothing more than a silhouette once the image is downloaded. Be careful using backlight.



photos courtesy of Corning Painted Post West HS — Painted Post, NY

PHOTO SELECTION

Fact Sheet (Page 160 in the student workbook)

Goal: To choose photos for a yearbook spread

Photo selection refers to the process of choosing photos for a yearbook spread. This process begins after the digital images are downloaded from the camera to the computer. To make photo selection easier, sort the photos as they are taken.

Step 1

Delete any images that:

- are out of focus
- are too dark or too light
- have technical imperfections
- do not tell a story
- lack a strong center of interest

Step 2

Keep photos that display a clear center of interest, especially if those photos capture an interesting angle.



Now, examine the photos in the examples:

- The dominant photo: The athlete is a clear center of interest even though there are other runners behind him. The leading lines effect created by the other runners help make the background setting and provide an understanding of the overall event. The runner has been captured at the peak of action/emotion, giving the photo great story telling ability.
- The action of every photo travels onto the spread and obviously covers a variety of meets.

THE CLAW

Arvada West High School — Arvada, CO



- The dominant photo: Using selective focus, the center of interest pops out of the photo. Framing is created by the group setting.
- Cut-out background (COB) photos highlight individuals in sidebar modular coverage.
- The candid shots are closely cropped with very little wasted space.
- Content of candid shots is varied with some as single subject, some small groups and one larger group.

TEMPLAR

Temple City High School — Temple City, CA

PHOTO SELECTION CHECKLIST

Assignment

Goal: To choose photos for a spread using a checklist as a guide

Directions: You will need to collect the photos and the layout for a spread. Choose the photos for the layout using this checklist as a guide. When you are finished, share your photos, layout and checklist with a classmate to gain additional feedback.

- Each photo is candid — no photo is posed.
- Each photo has an obvious center of interest.
- Every picture can be positioned so the action faces the gutter.
- No arms, legs and faces are cropped out.
- Wasted, empty space is eliminated.
- Objects that distract from the center of interest are avoided.
- Horizontal photos are cropped for horizontal spaces, and vertical photos are cropped for vertical spaces.
- The selection of photos includes a variety of subjects engaged in a mix of activities.
- The photos on the spread reflect the diversity of the student body in age, grade level, gender and ethnicity.
- Sports photos contain the ball in the frame when the ball is an important part of the game or action.
- Photos are technically strong — well focused, good contrast, proper levels used.

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PHOTO COMPOSITION

Fact Sheet (Page 162 in the student workbook)

Goal: To learn basic principles of photo composition

In yearbook, photography tends to be candid photography — all of the photos are action shots that tell a story or capture a moment. Yearbook photographers avoid posed photos where the subjects are mugging for the camera; for example, students grinning with their arms draped across one another's shoulders.

In taking candid photos, photographers use the elements of photo composition to make their photos more visually appealing to their audience. In formal terms, photo composition is the study of the arrangement of objects in a photograph. Look at the examples below:

Balance

Photographers should strive for balance in their pictures. Balance is achieved when all compositional elements in a photo work together to tell the story. In an unbalanced photo, one or more elements in the photo will compete for the readers' attention, causing confusion.

Mergers

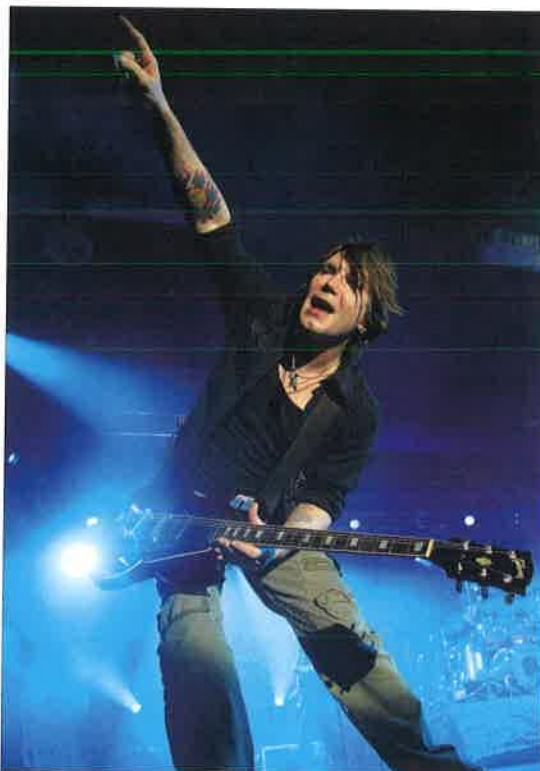
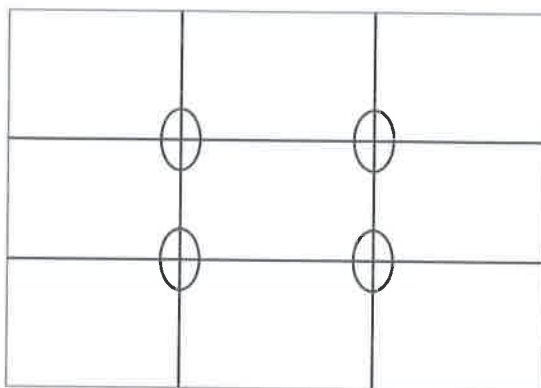
A merger is a compositional flaw that occurs when two or more elements come together in a photo to produce an unwanted and confusing effect.

Example: A plant that appears to grow from the top of a subject's head.

Rule of Thirds

You can balance your photographs by using the rule of thirds — the circles to the upper right indicate the visual hot spots. Position the camera so the center of interest lands on one of those areas to create a more visually exciting photograph. The action or center of interest should fall in the upper, lower, left or right third of the cropped image. Make sure your cropped sports photos have leading space.

- The musician's face is positioned at the intersections rather than being centered. This allows for a feeling of movement and spacing rather than a perfectly centered image which feels more static.



TOWER

Northwest Missouri State University — Maryville, MO



MINOTAUR
Bloomingdale HS — Valrico, FL

Center of Interest

To have a dramatic impact on the audience, the center of interest should be obvious. Even with a photograph of a large crowd at a sporting event, there should be only one subject of the photo.

- The ball carrier and defensive player trying to bring him down are the center of interest while the surrounding players provide the background setting.

Angle

Photographers can make their photos more appealing by choosing a unique angle. A low angle can isolate your center of interest with a background of sky or ceiling while a high angle can provide the audience with a different perspective. Lens choice can also have a huge impact on compositional angles. A 15 mm fish-eye or aspherical lens helps to create dramatically wide angles that can enhance any unique physical angles from which the photo was shot.

- The photographer is shooting downward for this photo of the girls painting on the wall.



SUNSET
Corona del Sol HS — Tempe, AZ

Framing

A frame can be made up of either objects or people that surround or “frame” the center of interest. For example, if a student is standing in a doorway, the door frame acts as a frame to draw attention to the center of interest.

- The piano lid forms the perfect frame for the girl playing.



WESTWIND
West Henderson HS — Hendersonville, NC

Leading Lines

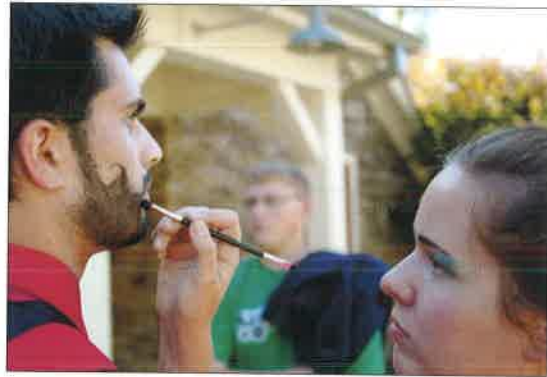
The eye follows leading lines to the center of interest, especially from the foreground to the background. A road, a chalk line on an athletic field or painted lines on a track, all act as leading lines.

- The viewer's eye follows the paintbrush directly to the second subject's face.

Peak of Emotion

Photographers take pictures that tell great stories when they take them at the peak of emotion — at the moment when something happens. The peak of emotion is often the reaction to the event. The photographer should strive to capture action, reaction, motion and emotion.

- The photographer got in close to capture the reaction to defeat in the championship game.

**TELEIOS**

Mount Paran Christian School — Kennesaw, GA

**JAG**

Mill Valley HS — Shawnee, KS

Four Tips for Taking Great Photographs

Pick a good subject.

Look for interesting or expressive people.

Move in close.

Many beginning photographers take pictures from too far away. Zero in on your center of interest by moving closer. Look through your viewfinder to see if the center of interest fills the frame. If not, move even closer.

Wait for something to happen.

Be patient. At a football game, wait for the coach's reaction to a fumble. At a band competition, wait for the announcement of the first-place winner, then shoot a band member's reaction. For sports, stay after the game to capture the reactions and emotions.

Shoot twice a day, every day.

Whether you are on assignment or not. This is called "enterprising." Enterprising is a great skill-builder. It allows you to become more familiar with your equipment, and you never know what unexpected dominant you might capture.

PHOTO COMPOSITION

Worksheet (Page 165 in the student workbook)

Goal: To recognize principles of photo composition in yearbook photographs

WORKSHEET

Directions: Explain how the principles of photo composition apply to each photo.



QUIVER

Lake Central HS — St. John, IN

- THE CENTER OF INTEREST FALLS WITHIN THE RULE OF THIRDS, AS DOES THE SECONDARY FOCUS.
- THE PHOTO CAPTURES THE INTENSITY ON HER FACE.
- THE CONTRAST IN THEIR EXPRESSIONS AND THE REPETITION OF THE COLOR PINK ADD TO THE IMAGE'S IMPACT.



PEREGRINE

Foothill HS — Henderson, NV

- THE PHOTOGRAPHER GOT IN CLOSE, FOCUSING ON THE ACTION.
- THE CENTER OF VISUAL INTEREST FALLS WITHIN THE RULE OF THIRDS.
- THE PHOTO IS AN EXAMPLE OF THE PEAK OF ACTIVITY, CAPTURING THE SUBJECT IN ACTION.

WORKSHEET

- THE PHOTOGRAPHER GOT IN CLOSE, CAPTURING THE CENTER OF VISUAL INTEREST AT THE PEAK OF ACTION.
- THE CENTER OF INTEREST FALLS INTO THE RULE OF THIRDS.
- SELECTIVE FOCUS BLURS THE LANE MARKERS IN THE BACKGROUND, MAKING THE SUBJECT STAND OUT.



NUGGET
Cupertino HS — Cupertino, CA

- THE CENTER OF VISUAL INTEREST IS CLEAR AND FOLLOWS THE RULE OF THIRDS.
- THE PHOTOGRAPHER CAPTURED THE PEAK OF EMOTION — THE UNCERTAINTY/FRUSTRATION OF THE CHALLENGE IS OBVIOUS.
- THE REPETITION OF THE OTHER PAIRS COMPETING STRENGTHENS THE VISUAL APPEAL.



TITANIAN
San Marino HS — San Marino, CA

**ARBUTUS**

Indiana University — Bloomington, IN

**THE HAWK**

Pleasant Grove HS — Texarkana, TX

- THIS PHOTO DEMONSTRATES THE POWER OF SHOOTING FROM A LOW VANTAGE POINT. THE PHOTOGRAPHER MAY HAVE BEEN KNEELING. AS A RESULT, THE PLAYERS LOOK LARGER THAN LIFE.
- THE CENTER OF INTEREST FOLLOWS THE RULE OF THIRDS.
- THE SKY'S TEXTURE PROVIDES COLOR CONTRAST, FURTHER EMPHASIZING THE RED UNIFORMS.

- CLEAR AND OBVIOUS CENTER OF INTEREST.
- THE SUBJECT FALLS CORRECTLY, ACCORDING TO THE RULE OF THIRDS.
- THE PHOTOGRAPHER GOT IN CLOSE FOR MORE IMPACT, USING SELECTIVE FOCUS TO BLUR THE BACKGROUND.
- THE REPETITION OF THE RED TONES IN THE SET AND THE ACTRESS' COSTUME CREATES A HORIZONTAL GUIDE TO THE STARS' FACES.

PHOTO COMPOSITION PRACTICE

Activity 1 (Page 168 in the student workbook)

Goal: To identify the principles of photo composition in newspapers and magazines

Materials: Paper, scissors, glue sticks, newspapers and magazines

ACTIVITY

Students will look through newspapers and magazines for three pictures that demonstrate principles of photo composition. Students will cut out these pictures and glue them to clean sheets of paper. Then, students will list the principles of photo composition that apply to each photograph.

Activity 2

Goal: To practice the principles of photo composition

Materials: Camera with manual focus and manual aperture settings

Single Object

Shoot only one object, each frame from a different angle. Shoot up close, overhead, lying down, horizontal, vertical, zoom in and zoom out.

Camera on Axis

Pretend the camera is attached to an axis. It can revolve, move up and down, and tilt, but that's it. You're only limited by height and 360 degree angle of view.

Depth of Field

Use different aperture settings on several subjects. Experiment with the distance you are from the subject to see how that influences depth of field. Lens choice has a huge impact on depth of field, too. The longer the lens, the shorter the depth of field; the shorter the lens, the deeper the depth of field. A photographer shooting with a 17-35 mm lens will always be shooting a relatively deep depth of field. Lens choice affects depth of field as much as f/stop and focal distance.

Follow Focus

Shoot from the bleachers during an athletic practice. Choose one player and follow him/her up and down the field/court. Frame the photos so that the player is alone, with another player and amidst a group of players.

Human Interest

Look for interaction between people who are responding to each other.

Further Enrichment

Choose what you think are the best photos from each of the five exercises. Then, go to the experts. Look at photos in yearbooks, magazines, photography books that you consider to be of excellent quality. How do yours compare with theirs? How can you reshoot your photos to look more like the professionals'?

TAKING YEARBOOK PHOTOS

Activity (Page 159 in the student workbook)

Goal: To practice taking a variety of candid photos appropriate for the yearbook

Materials: Cameras available for student use

Each student has two weeks to complete the assignment. They must take one photo for each of the assigned locations, focusing on the angle and composition of each shot.

ACTIVITY

Center of Interest Photos

- A single individual engaged in a learning activity
- A shot of a teacher and a student engaged in a learning activity
- A framed head shot of a single individual
- A group of at least four people
- A photo taken in a classroom setting
- A school spirit shot taken at a school function: rally, assembly, game, etc.
- A sports action photo with the athlete and ball clearly in the frame
- A photo of an athlete engaged in a game, meet or match
- A photo of an athlete on the sidelines of a game or in conference with a coach or other player
- A photo of at least two members in an organization engaged in an activity for that organization
- A photo in a public place other than school

Technique Photos

- A miscellaneous shot, student's choice, with unique composition
- A photo utilizing framing
- A photo shot from an interesting angle
- A photo which contains visual leading lines
- A photo utilizing the rule of thirds
- A photo with impact or emotion

Set up large, tri-fold posterboards that list each photo task. Upon completion of this assignment, students review their photographs and choose one photo to add to each board. Or, create a digital slide show so the staff can view projected images as a group. Each student can add an image in every category – or you might ask each student to provide five images for discussion.

Then, the class studies the photos and discusses the composition, angle and focus of the groups of photos. The class may choose the top three photos in each category, or the teacher may give ribbons to the best photos he/she chooses from each category.

One final option is to have the students choose photos from their individual collections and submit them to the teacher to be graded portfolio-style. In a class where a portfolio plays a large role, this gives accountability to the students and to the teacher.

DIGITAL CAMERA BASICS

Fact Sheet (Page 170 in the student workbook)

Goal: To explain the basics of a digital camera: pixels and resolution, viewfinder vs. LCD, compression, memory and removable media, and optical or digital zoom

How a Digital Camera Works

A digital camera is more a computer than an optical device. Instead of film, digital cameras capture images using light-sensitive computer chips. The most common is a charge-coupled device (CCD). When the shutter opens and light strikes the CCD, temporary electronic charges to the CCD are recorded on internal or removable memory.

Pixels and Resolution

The heart of the camera is the CCD, and the larger it is physically, the better the quality of the image. Like a pointillist painting, digital images are made up of tiny squares of color called pixels (derived from “picture” and “element”). CCDs are sized, or rated, in megapixels (up to 10-12 and higher). But beware: cameras with large megapixel numbers can be misleading. The physical size of the CCD has as much — if not more — to do with image quality than the raw megapixel number. First-generation digital single lens reflex (DSLR) cameras with megapixel numbers of 2.0 or under will vastly out-perform a 10 megapixel point-n-shoot simply because the DSLR's CCD is two to three times larger than the point-n-shoot's. Larger CCDs mean larger pixels; larger pixels mean more data captured (more highlight data, more shadow data, more color data).

Resolution is the number of pixels per linear inch. In digital photography, always remember that resolution rules. The higher the resolution (the more pixels per inch) the better, or crisper, the picture. The amount of detail that a digital camera can capture is called the resolution, and it is measured in pixels. The more pixels a camera has, the more detail it can capture. The more detail, the more a picture can be enlarged before it becomes grainy and starts to look out of focus. Again, the size of the CCD plays an important role here. Larger CCDs mean larger pixels; larger pixels capture more information that translates into greater image detail that affects the maximum finished image size.

Viewfinder vs. LCD (Liquid Crystal Display)

Most cameras today offer a viewfinder and a separate color liquid crystal display (LCD). Using the viewfinder or the LCD is a toss-up: The image in the LCD is the same image that is captured on the CCD, except that the resolution is lower. This is due in large part to the way the camera captures images. Today's point-n-shoots use a technology that enables the photographer to see real-time video images of what he or she is about to shoot. The problem with this technology is that the camera must set aside a portion of its CCD in order to do this. Since most point-n-shoots have really small CCDs in the first place, the needs of a real-time LCD screen cut the usable size of the CCD down even further. Think of the way a point-n-shoot works this way: the camera has to use one CCD for two functions, capturing the image and providing real-time video. Something has to suffer, and it's usually the quality of the image a point-n-shoot can capture.

Taking the picture using the LCD is a little tricky. The camera must be held a few inches away in order to see the shot, which requires steady hands. The LCD is also difficult to use in bright light, and it drains the batteries.

On the other hand, the LCD displays a menu for changing the camera settings, as well as viewing and deleting images. If an image isn't just right, delete it and try again — forget the hassle of downloading bad pictures.

Compression

Digital cameras compress image files when saving them in memory. By compressing images, more pictures can be stored, but some image data or quality is lost.

Most digital cameras store a picture in JPEG (Joint Photographic Experts Group) format, which compresses the image. Higher-end cameras may also support TIFF (Tagged Information File Format) format, which does not compress. While TIFF images require a lot of memory, the advantage is that no data is lost. For the absolute best quality images, shoot in the RAW format if your camera will let you. All professional and "prosumer" DSLRs have the ability to shoot in some sort of proprietary RAW format. Think of the RAW image as the DSLR's "negative." The RAW format offers the best detail and color capture of any of the formats mentioned.

Experiment by taking the same picture using different file formats. Then, open the images on the computer (with image-editing software) and compare the file sizes and image quality. Before going out for the afternoon with camera in hand, know what format to select and how many pictures can be stored in memory. The only downside to shooting TIFF or RAW files is the amount of space the files take up on the removable media card. Typically, TIFF and RAW files require large amounts of removable storage because TIFF and RAW file formats do not compress the digital image. JPEG files require far less storage space because the files are compressed. Resist the urge to shoot JPEG files just because more images can fit on a removable media card, and remember that when an image is compressed, image data is thrown away in the process.

Memory/Removable Media

Memory cards are available in many sizes and styles. Your budget will affect your choices. Invest in enough cards that every camera has several. As long as extra cards are available for back up, running out of space isn't a problem. Just pop in a new card when the first one fills up.

Zooming: Optical or Digital

Low-end cameras have fixed-focal-length lenses like cheap disposable film cameras — meaning the lens always covers the same angle of view and the only way to change the framing is to move closer to the subject. Some digitals may feature the option to adjust the focus to three different distances: macro for an extreme close-up, portrait and landscape.

A zoom lens is the best option for the yearbook photographer. When zooming in, the focal length (distance between the lens and the image sensor, or CCD) increases. When zooming out, the focal length decreases. A camera with a zoom lens offers the ability to shoot at any focal length along the zoom range.

The most common zoom for a digital camera is 3X — some smaller models have only a 2X and some larger, more expensive models offer a 10X zoom. Be sure to carefully consider the options available: buying a camera with 3X zoom only to find out later that a 10X zoom is what's really needed for close-up action on the football field can be a big problem.

Don't be fooled by the term "digital zoom." A digital zoom just crops the image by taking pixels from the center of the image sensor and "interpolating" them to make a full-size image. It's the same as cropping a picture and then blowing it up. A digital zoom may create a grainy or fuzzy image. Be sure to purchase a camera with a true optical zoom lens.