GROW YOUR KNOW

PHOTOGRAPHY

AN IN-DEPTH GUIDE TO PHOTOJOURNALISM

Jostens®

DESIGN TEAM

DESIGN

Hoots+Clicks
Minneapolis/St. Paul, MN

PRODUCTION

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SPECIAL THANKS

Mike McClean and Derek Gowers provided the instructional images used throughout this book.

Arlington Camera, Texas provided the gear for the equipment chapter.

AUTHORS

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DEREK GOWER: Derek Gower is a freelance photographer in the Dallas-Fort Worth area and has been part of photojournalism education for even longer. Derek has mentored under a professional photojournalist, helped military-dependent youth find their voice through photojournalism, co-founded a wedding photography business, and photographed for a variety of clients in the fields of healthcare, education, business, and advertising. Derek also teaches photography and photojournalism skills to high school students and their advisers around the country and has a passion and patience for working one-on-one to help students develop their skills and understanding of photography.

MIKE MCLEAN: A Dallas-based freelance photojournalist, Mike McLean teaches photojournalism at high school workshops and conferences throughout the nation. McLean was inducted into the Scholastic Journalism Hall of Fame and has received the JEA Friends of Journalism Award. He also serves on the planning committee for the NSPA Gloria Shields Media Workshop in Dallas.

MARGARET SORROWS: Margaret Sorrows retired in 2015 after 36 years of advising yearbooks and teaching digital photography, most recently for 24 years at Bryant High School in Arkansas. She was the 2014 JEA H.L. Hall Yearbook Adviser of the Year. Her yearbooks won numerous Gold and Silver CSPA Crowns and NSPA Pacemakers. She received a CSPA Gold Key in 2012, the TAJE Texas Trailblazer Award in 2017, and was runner-up to Arkansas Teacher of the Year. Her photo students were consistent winners in Jostens Photo Contest, NSPA Photos of the Year and Quill & Scroll. She is a frequent photojournalism presenter at high school workshops. She is currently an ambassador for Jostens, serving as an educational and creative consultant.

EDITOR IN CHIEF

SARA SAUSKER: Jostens Senior Manager of Customer Experience.
Sara Sausker oversees Jostens classroom materials and offerings. She uses her experience as a high school teacher and yearbook representative to share her passionate philosophy of student journalism. She believes that a journalism class can be one of the most valuable learning opportunities in high school and loves helping build resources that will contribute to a thriving program. Sara has created Jostens 7-Minute Starters and Start Right in Seven Weeks curricula and acted as editor in chief of the Jostens Grow Your Know Educational Series and the Jostens *Look Book*. Sara also speaks at local and national conventions.

FOREWORD

We recognize the power of great images. Photographs can capture moments of great significance, they can inspire, and they can record history as it plays out for every student at every school. The ability to capture those images requires technical and compositional skills on the part of the photographer. Our goal in creating this curriculum was to give teachers and students the tools they need to capture storytelling images, as well as address technical, organizational, ethical and legal aspects related to photography.

We planned this curriculum with our audience in mind. No matter your level of expertise, there is information here you can use. We've broken down the sometimes-daunting technical information about camera usage into clear, understandable language with supporting visuals. We've offered solutions to the most difficult shooting situations students face—night sports photography and stage production photography, for example—including lens selection, camera settings, lighting and angles.

Photography has a lot of moving parts. In addition to camera handling, student photographers and teachers need to understand some of the best practices for organizing and archiving images. They also have to know about their rights and responsibilities as photojournalists, including legal and ethical considerations. We've provided suggestions and resources for you, along with examples of equipment checkout sheets and assignment sheets.

Behind most great images is a photographer who felt confident in their skills—who planned, prepared, anticipated and persevered to get those images. We hope this curriculum becomes one of the many useful tools to help student photographers and their teachers become successful as they document their school communities.

CONTRIBUTING AUTHORS

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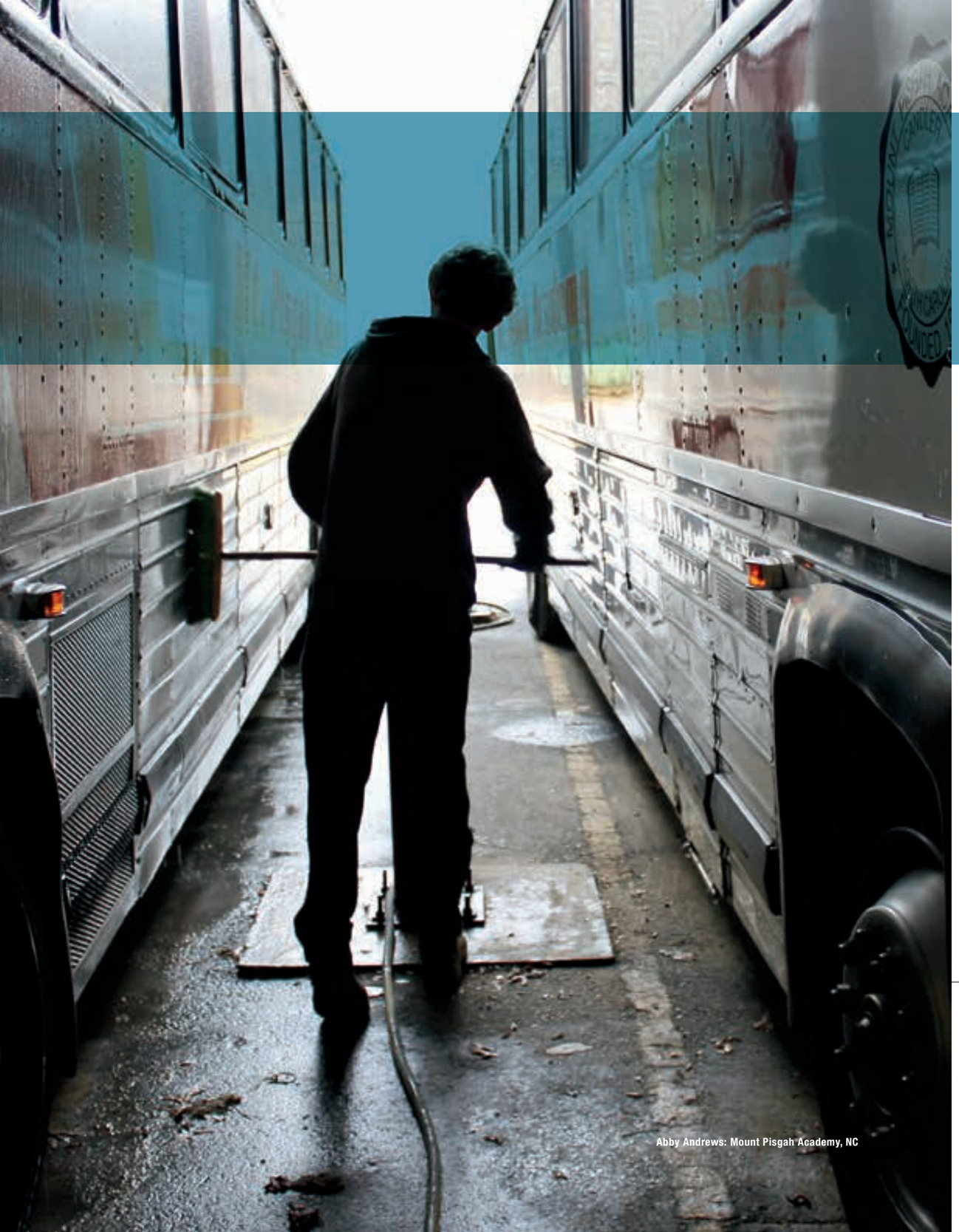


Abby Andrews: Mount Pisgah Academy, NC

1 COMPOSITION

Elements of Composition

Making a Photo a Quick Read

Storytelling Skills

Be a Journalist

Build a Narrative: a Photo Story

BUS WASH

One of the key elements of a powerful image is light. The photographer captured the subject from the back to showcase the natural lines of the two buses to frame and pull the viewer into the image. The natural background light captures the shape and form of the center of visual interest in a dramatic silhouette.

PHOTOS WITH STOPPING POWER

STORYTELLING WITH YOUR CAMERA

Photojournalism is a visual language. Storytelling with your camera is an art. One simple image can share the memory of an event and tell the visual story of who you are as a school community.

Great photographs include three simple things:

Good light.
Great composition.
Storytelling moments.

As photographer Robert Capa once said, “If your pictures are not good enough, you’re not close enough.” Getting close allows a photographer to focus on light, composition, and emotion and to capture images that connect with the audience. As a photographer, you are a storyteller who holds a camera, so shoot images as quick reads—readers must be able to process the information in a photograph quickly, with little supporting text.

Aaron Martin: Frisco High School, TX

Eakin Howard: Asheville High School, NC

1.1

ELEMENTS OF COMPOSITION

Composition is all about planning, positioning and arranging the elements in a photograph so that the image communicates. To the professional photographer, the elements of composition are as important as the camera's technical aspects. Composition is what separates stunning photographs from forgettable snapshots.

Sara Benson: Shawnee Mission East High School, KS

1 CENTER OF VISUAL INTEREST

Make sure the main subject of your photograph is the most prominent feature of the photo. If there is a secondary subject, make sure it doesn't distract from the center of visual interest (CVI). (Note, "center of visual interest" does not mean your subject should be directly in the center of your image.) Examine the viewfinder. Check the background. A pole or tree centered behind the subject may make it appear that an object is growing out of a subject's head.

Dylan Gray: Bryant High School, AR

2 RULE OF THIRDS

Whenever possible, try to avoid placing your CVI directly in the center of a photograph. This can make photos seem less sophisticated than if the subject is placed off-center using the rule of thirds.

To apply the rule of thirds, you need to visualize your viewfinder divided into nine separate areas, like a tic-tac-toe board. If you are correctly using rule of thirds, your subject will be placed at one of the intersections of the lines.

You can achieve rule of thirds by shifting your stance, which is common when the subject is stationary. If your subject is active, as in sports photography, wait for it to move. The subject does not need to be at the exact intersection of the rule of thirds grid lines. They are a general guideline to follow.

A subject often needs visual room to move in the frame. For example, when capturing a cross-country runner moving from left to right of your frame, place the runner in the left third to give your CVI room to run forward in the space. Place anyone looking to the right in the left portion of the frame and vice-versa. In a vertical format, be sure to give the subject some extra headroom.

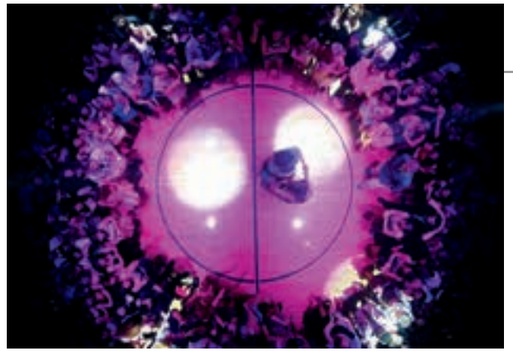
If you are using an autofocus camera, the rule of thirds will require you to focus on your subject matter first, then recompose the image before pressing the shutter release.

Clay Cambell: Bryant High School, AR

3 LEADING LINES

Visual elements within your photographs can pull your viewers into the composition of your image. Natural leading lines are evident all over schools—fences, stadium seating, rows of desks, hallways, stairways, track lines and extended arms. But don't ignore leading looks, a kind of invisible line created when two people look at each other. Once you have seen an example, you will start to notice them everywhere.

COMPOSITION IS WHAT SEPARATES STUNNING PHOTOGRAPHS FROM FORGETTABLE SNAPSHOTS



Robert Coletta: Hunonegan High School, IL

4 GEOMETRIC SHAPES

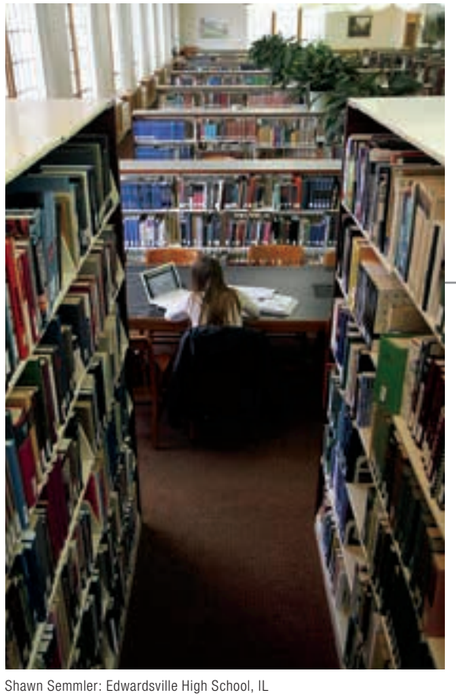
Shapes influence a photograph's energy. Curves, like roads, spiral staircases or trees suggest calmness and serenity. Sharp-edged shapes, like architecture, stairs and intersections add energy and can be dynamic. When composing photographs, look for s-curves, semi-circles, circles and triangles in the area surrounding the CVI.

Nick Corn: Bryant High School, AR

5 REPETITION OF FORM/SHAPES

Repetition of form can add visual interest to images. It's a simple technique—two or more subjects repeat to create a pattern, though sometimes the pattern is broken with a different object. Bleachers in an athletic stadium are a common example of repetition of form. So are students dressed alike at pep rallies, students cheering with hands up in the air, reflections in sunglasses, or a line of actors' faces in a mirror applying stage makeup.

Whitney Butler: Bryant High School, AR



Shawn Semmler: Edwardsville High School, IL

6 WORM'S-EYE VIEW

Worm's-eye view is a low-to-high angle, the exact opposite of the bird's-eye view. Capture a worm's-eye view by crouching or lying on the ground. Be careful not to point your camera up skirts or noses.

7 BIRD'S-EYE VIEW

Bird's-eye view is a high-to-low angle. Sometimes a photo can be improved just by varying the angle from which it is taken. Standing on a table, chair or desk works, as would a ladder or balcony. Just be careful to avoid a shot full of the tops of people's heads. As with all photos, think as you work.

Kenzi Brenton: Bryant High School, AR

8 REACTION

Reaction is all about emotion, emotion, emotion. Action is important, but a photographer should also consider capturing people's reactions to the action. These shots are often the most impactful and memorable photos. Think about capturing the joy of a funny experience, the excitement of the crowd during a great win, or the agony and sadness of defeat. Winning and losing are both part of the story of the year. Document it.

9 FILL THE FRAME

To fill the frame is to get close. A photo that has used the compositional technique of filling the frame may be a tight headshot showing some interesting detail of the subject. Nothing in the frame distracts from the CVI because the photographer has eliminated the distracting background. While not every shot should fill the frame, it is one of the powerful techniques you can use to tell a photo story and achieve visual variety.

Eakin Howard: Asheville High School, NC

10 FRAMING

The visual strategy of framing helps lead the reader's eye and can give additional contextual information. For example, drums and cymbals could frame the face of a band student playing at a pep rally. Look for natural frames like windows and doors. Light can also create a frame. Shallow depth of field in a classroom can produce a framed image. Once you start noticing them, you will see frames all around. Trees, architecture, inanimate objects and bodies can create frames in images too.

Andrew Goodman: St. Mark's School of Texas, TX

GOOD TO GREAT

CONTROL YOUR BACKGROUND.

Changing your vantage point by getting down lower or moving slightly can make a drastic improvement in the composition of your photos. Notice how the simple background allows the subject to shine.

11 LIGHTING

If you're paying attention, lighting itself can become an element of composition and create dramatic effects. Light and shadows can create frames, positive and negative space, and layers.

12 BLUR & PANNING

Using a slow shutter speed, pan by following a moving subject with the camera. Panning causes the background to blur while the moving subject remains in crisp focus. Zoom blur can also be an effective compositional tool when used in moderation. Zoom blur is accomplished by focusing on the subject at close range and zooming out while the shutter is open.

Kevin Sanchez: Mountain View High School, GA

Rachel Lewis: Texas High School, TX

Chiara Rigaud: Archbishop Edward A. McCarthy High School, FL

13 SELECTIVE FOCUS

Using a shallow depth of field, selective focus allows you to achieve a strong center of interest by making sure your desired subject is the only thing in focus. Carefully compose the selective focus shot, keeping in mind that the out-of-focus portion is also part of the story.

Nathanial Brown: Boone High School, IA

Emily Hinkle: Spartanburg High School, SC

14 DEPTH & LAYERS

Look for opportunities to add layers to your photos, especially when composing with your wide-angle lens. All photos have a foreground, middle ground and background. Do not neglect any of these areas.

Always fill the frame when you are looking through the viewfinder. Do not fall into the trap of capturing a poorly composed subject and planning to crop it later.

15 SIMPLICITY

Control the background. As you frame up your shot, look for objects in the background that might distract from the CVI. While it is not always possible to control the background, always mentally visualize the final composition, and if you can control it, do so.

ALL PHOTOS HAVE A FOREGROUND, MIDDLE GROUND AND BACKGROUND

1.2 MAKING A PHOTO A QUICK READ

A quick read in design is defined in this way: Easily digestible content provided in a format that only takes seconds to read. Quick reads help tell the story without utilizing a paragraph format by including only essential facts, figures and quotes.

Similarly, viewers of a photograph must be able to process the information quickly with little supporting text. Photos that are thoughtfully composed, using a few easy-to-follow rules or formulas, will produce storytelling, easy-to-read images.

Picture this: It's Tuesday morning and you are skimming through your social media when a photo stops you. Something about the emotion, action or color catches your attention and stays with you through the entire morning—maybe the entire day.

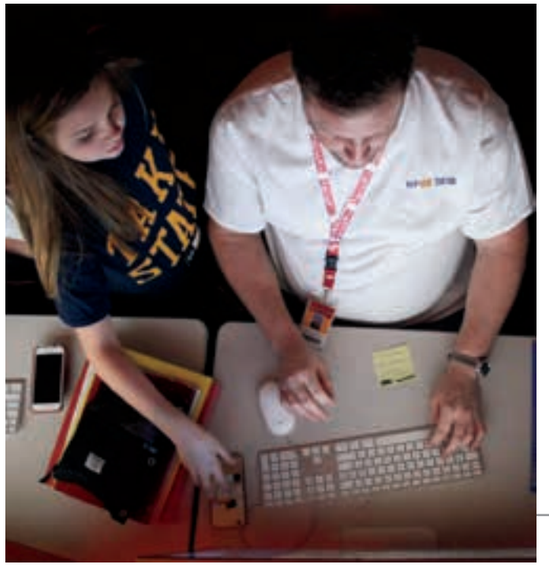
Brooke Lasley: Bryant High School, AR

NO TIEBREAKER

Readers need to be able to process an image quickly without lots of supporting text. The photographer smartly snapped this storytelling image after time expired of a non-conference rival football game without a winner. The low angle composition of the emotion of two players along with the information on the scoreboard tells the complete story of this game.

This experience encapsulates the job of a photojournalist: to take storytelling photographs that connect with the viewer in a way that sticks with them.

Every day, people laugh, cry, smile and frown, look pensive and thoughtful. Even on the most mundane of photo assignments, you will see a range of emotions. Great photographers train themselves to capture moments of everyday emotion.



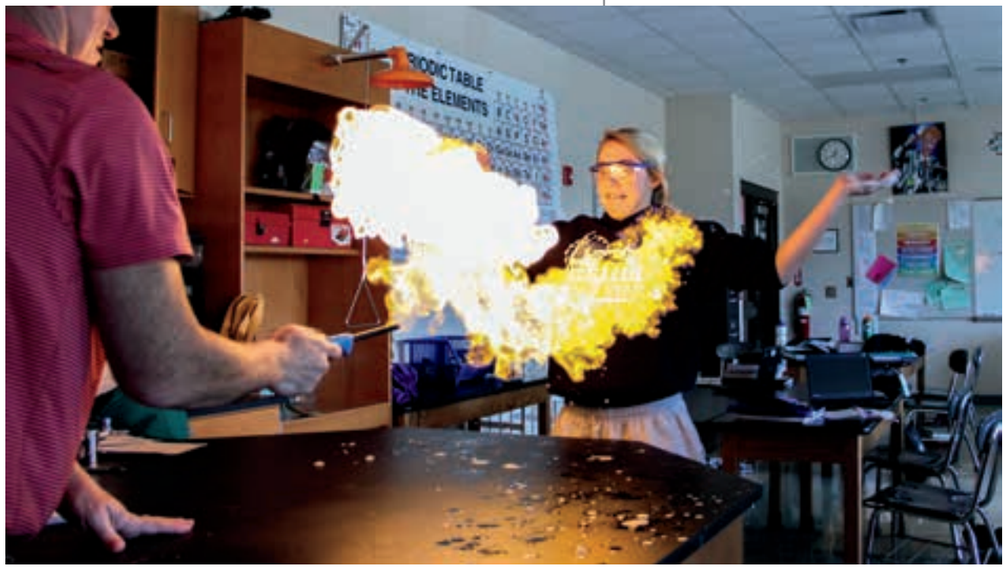
Danielle Ward: Highland Park Middle School, TX

Now picture this: You have been assigned to shoot a story about Mrs. Smith, a math teacher in your school who just won a national teaching award. The easy (wrong) way to complete this assignment would be to go to her classroom during her planning period and instruct her to hold the award while you shoot a picture of her in an empty classroom. Will this photo show anything about her teaching style, other than the fact that it's "award-winning"?

Think for a minute about a better way to approach this assignment. The first step on the path to better photographs is thinking through the assignment.

SMART LEARNING

Classroom academic images are often static pictures of a student or teacher sitting at a desk. In these two images, the photographers used composition to add interest to the subject matter. The high angle and light from a computer screen nicely frame the interaction between a student and teacher. In the second image, the photographer captured the reaction of the student to the fire produced by the teacher in a science experiment.



McHenna Manalli: Byron High School, IL

BEFORE THE SHOOT

Visit with Mrs. Smith before or after school and ask her which class and period you can come photograph her. Tell her you're interested in highlighting her teaching talents. Ask if she has any classroom hands-on activities planned.

DURING THE SHOOT

Spend some time in the classroom observing. Watch and wait. Great photographers do not participate in "drive-by" or "hit-and-run" photo assignments. You do not want a photo of her standing next to the white board, dry erase marker in hand, or sitting at her computer. Wait patiently for a photo-worthy moment, like a teacher-student interaction. Click. You just took a photo displaying a storytelling moment. Keep waiting and observing. Strive to capture several emotional moments of interaction between the teacher and students using compositional techniques that fit the situation.

Whatever the assignment, you should always preview the environment.

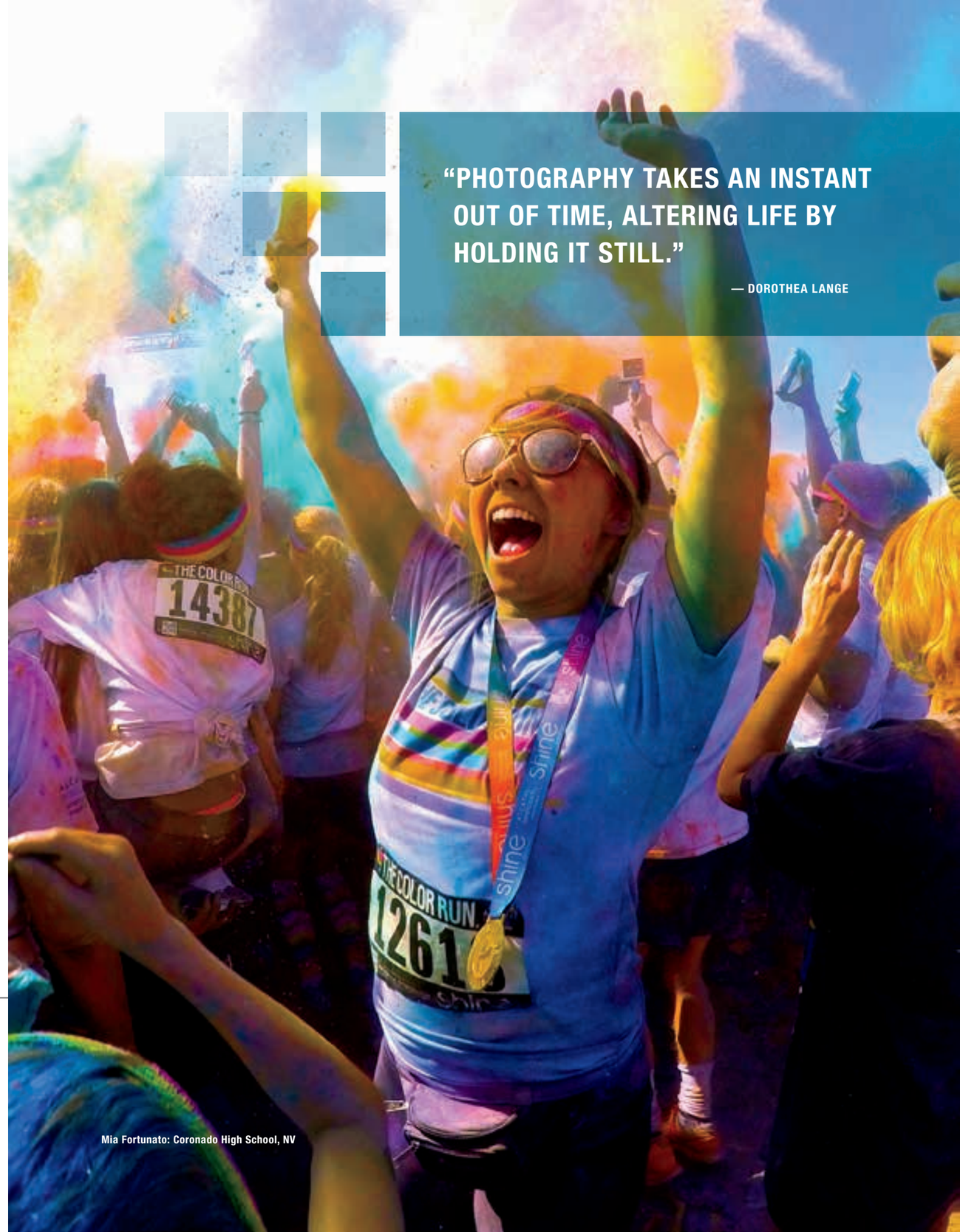
Look behind you, above and side-to-side. Sometimes the best view is not the obvious one right in front of you. Look for unusual angles. If it's a stage production, take shots behind the stage, in the wings or even up from the catwalks, if allowed.

At sports events, the camera should be ahead of the action. A good photographer can feel the momentum and position himself to snap the go-ahead touchdown. A thorough photographer gets shots of the defensive plays as well as the offensive ones. In basketball, look for photo opportunities that occur away from the basket. Don't be shy about capturing from both sides of the field or court. Teams might favor a particular side for running plays, so move to the opposite sideline if the action seems to be consistently moving away. Photos taken from the opposing sidelines also place your school's team and fans in the background.

A good photographer is never shy to ask for help or access. When capturing a wrestling match, ask if you can take a position on the edge of the mat. Ask the football coach if you can snap locker-room pictures before the game or at halftime. Get to know the coaches and build relationships with them to gain insider information.

AFTER THE SHOOT

Immediately go to a computer and upload your images. Don't risk the chance your memory card images could be formatted or deleted from the card. Even though you think you've taken great images, you've only seen them on a tiny 3-inch screen. The real test of a great shot will be when you see it on a larger computer screen where you can check your focus and see distracting details that might diminish the storytelling of the photos. If necessary, contact your subject to reshoot on the same day or the next. Lastly, it's always a good idea if the subject was an adult, to send a professional thank you email.



COLOR IN THE AIR

Activities outside the school day can result in eye-catching images and great coverage. Never underestimate the power of reaction as a composition technique. The joy on this runner's face is emphasized by the vibrant colors and repetitive patterns surrounding her.

Mia Fortunato: Coronado High School, NV

1.3 STORYTELLING SKILLS

Gordon Parks, celebrated 20th-century photographer, captured American culture and fashion with a keen eye for composition. Because of his focus on including important visual details and eliminating the unimportant ones, as well as utilizing a variety of compositional techniques, his photos effectively told stories of racism and poverty, celebrities and politicians. Parks told the story of hardworking lives. Your job is to tell the story of your school.

Many factors can change the composition of a photograph. Does this shot need a long lens or a wide angle? Does it need a high point of view? Is the ambient light interesting? Is it necessary to show the subject's entire body? Are there interesting shadows in the frame?

Do not fall into the trap of thinking you can't take a great photo just because you don't have the most expensive or latest equipment.

Your best tools are your own two feet. Need to get closer but don't have a zoom lens? Put one foot in front of the other and walk closer to your subject. Now obviously you cannot just walk out onto the basketball court to get closer to the action, but you can be patient and wait until the action comes to you. You might not shoot as many images, but your patience will pay off in the end.

In addition to moving forward or backward, you also can move up and down. Stand on a ladder or chair. Lie down on the floor. Depending on the assignment, consider putting your camera flat on the ground for a great worm's-eye view shot.

Looking through the viewfinder from a variety of angles will help reduce the clutter in images, creating a strong CVI. Spend time to capture an event using a variety of compositional techniques. At the start of the assignment, decide what to emphasize and choose the compositional tools that will help you do so.

To take a great photo, you do not have to have fancy lenses. Just move backward and forward to create a human connection.

It's all about the light you have right at that moment. Shoot beyond the obvious. Tell a strong story through visuals. Keep capturing so you end up with more peak moments than "almost" moments.

Nikolai Pul: Heritage High School, CO

NIGHT LIGHT

Bonfire shots can be challenging because of night light. Furthermore, the photographer needed to capture an image that told the story of hundreds of students circled around a massive fire. The composition of the high angle of the event captures the entire frame of students around the bonfire. In the available light of the fire, students in the foreground are silhouetted while the light illuminates the students in the background, creating a dramatic, storytelling image.

Greydon Williams: Buffalo Island Central High School, AR

1.4

BE A JOURNALIST

The school photographer is a photojournalist, with the emphasis on journalist. Your coverage of any event or activity should be fair and objective. It is easy to aim the camera at familiar faces and friends, but to do so skews the coverage.

If a best friend is a candidate for homecoming queen, you are obligated to include her in the coverage; she is a key component and belongs there. However, if your crowd reaction shots are mostly friends, you have unfairly excluded others from the coverage. Amateurs favor the people they know; a real photojournalist is conscientious about being fair.

As photojournalist and master of the photo story W. Eugene Smith emphasized, photojournalism should be uncompromisingly fair and accurate. With image-editing software, it is possible for anyone to alter the reality of a photograph. A true photojournalist won’t make edits though, other than basic fixes to light and contrast, and will be vigilant to keep the content accurate.

Storytelling photography is not only about technical skill. Two things all photographers should carry with them: patience and curiosity. Be curious about your surroundings and patient enough to find the true story.

Resist the temptation to manufacture storytelling moments. Your job is to record real life—you are a journalist. Reporters cannot fabricate stories and photojournalists should not fabricate photos. Fabrication of images can happen at any step in the process: on assignment or when manipulating images using photo-editing software.

Journalists of all kinds must have credibility to do their jobs.

WATER WASH

National movements with proximity to the school community can make for incredible images. The ALS Ice Bucket Challenge in 2014 provided the backdrop for this dramatic stop-action photo. The emotion of the teacher, along with the water flowing around his face provides a nice compositional frame. A fast shutter spend enabled the photographer to freeze this moment.

1.5

BUILD A NARRATIVE: THE PHOTO STORY

The photo story is a classic formula that was practiced by famous photographer W. Eugene Smith, who worked for *Life* magazine. *Life* photographers were to shoot at least eight different types of photos to ensure enough variety for a layout in the magazine. This formula ensures visual variety and cohesion in the photos and answers who, what, when, where, why, how.

Yearbook photographers should strive to practice the **photo story formula** when capturing large or daily school events. You must come early and stay late to conquer the photo story. Taking the shots in the formula ensures a variety of story-telling photos for layout in the yearbook. Remember to shoot vertically and horizontally, before, during and after the event, close, medium and far shots, and vary the number of people in the shots. Always remember to include your composition elements.

YOU MUST COME EARLY AND STAY LATE TO CONQUER THE PHOTO STORY

PHOTO STORY FORMULA

1. **INTRODUCTORY OR OVERALL**
   Usually a wide angle or aerial shot that establishes the scene. Think bird's-eye view.
2. **MEDIUM**
   Focuses on one activity or one group.
3. **CLOSE UP/DETAIL**
   Zeroes in on one element, like a person's hands or an intricate detail of the story.
4. **INTERACTION**
   People conversing or in action.
5. **PORTRAIT**
   Usually either a dramatic, tight headshot or a person in his or her environmental setting.
6. **SIGNATURE**
   Summarizes the situation with all key storytelling elements in one photo—often called the decisive moment. This shot could easily become the dominant shot on a layout.
7. **SEQUENCE**
   A how-to, before-and-after or a series with a beginning, middle and end. The sequence gives the essay a sense of action and consists of two or three shots.
8. **CLINCHER**
   A closing shot that ends the story.

Bryant High School, Bryant, AR

VISUAL VARIETY

On a yearbook spread of a Thanksgiving Food Drive, the staff photographed all aspects of the event—before, during and after—not just the final day. Using the photo story as a guide, this staff included many images captured as part of the photo story formula. The shots of overall, medium, close-up, interaction, portrait, signature and clincher all add to the complete coverage story.

“A GOOD PHOTOGRAPH IS ONE THAT COMMUNICATES A FACT, TOUCHES THE HEART AND LEAVES THE VIEWER A CHANGED PERSON FOR HAVING SEEN IT.”

— IRVING PENN

Jesse Wright: Fountain Ft. Carson High School, CO

PRO TIP

NEWS EVENT PHOTO STORY

I was recently contacted by the LA Times to cover a series of prison-executions in Arkansas. As I rode with the writer, he told me the direction and vision for his story. During our discussion, I asked myself “What is visual about this?” “What is important?” “How do I capture the typical small-town culture?” “How do I document the gravity of this event and what it means to this community?”

Of course I was going to shoot images with different lenses and different subjects, but how else could I create a story with angles/subject matter to craft the best story? Variety and emotion. That’s how.

During this one quick afternoon, I was able to capture hundreds of images. Everything from inmates picking up trash outside the prison, to police officers eating lunch at the local Chester’s Chicken, to a portrait of a widow whose husband was murdered by one of the soon-to-be executed inmates. Each and every image was not compelling by itself, but when the story was crafted together, I was able to convey a larger story to the readers.

Documenting this story required me to break free from my comfort zone and ask people thought provoking questions for my captions. It required me to think critically about each image I captured, and if I was telling the story that needed to be told—or if I was even telling a story at all.

Gareth Patterson
Associated Press

ACTIVITY

COMPOSITION

Collect and/or shoot examples of each composition technique.

OPTION A: Collect discarded magazines and newspapers from the library and have photographers cut out an example of each of the composition techniques. Collect the examples in a basket. Have the photographers draw out a set number of professional examples. Send them out to replicate in the school setting, but improve the composition.

OPTION B: Assign several composition terms to each photographer. Have them create presentations to explain composition to other students. Use Instagram or other social media for examples.

OPTION C: Assign a composition technique each week for the first 15 weeks of class. Ask photographers to shoot four examples of the technique and upload to a file for grading. This assignment is a great way to get additional coverage that is not part of an assigned publication spread.

- ☐ CENTER OF VISUAL INTEREST
- ☐ FILL THE FRAME
- ☐ RULE OF THIRDS
- ☐ FRAMING
- ☐ LEADING LINES
- ☐ LIGHTING
- ☐ GEOMETRIC SHAPES
- ☐ BLUR & PANNING
- ☐ SELECTIVE FOCUS
- ☐ REPETITION OF FORM/ SHAPES
- ☐ BIRD'S-EYE VIEW
- ☐ DEPTH & LAYERS
- ☐ WORM'S-EYE VIEW
- ☐ SIMPLICITY
- ☐ REACTION

PHOTO STORY

Shoot a photo story in academics, student life, sports, organizations or a non-school activity.

Assign a photo story to photographers and have them present it to the class.
In the presentation, each photographer must explain the composition of each shot.

- ☐ CLOSE UP/DETAIL
- ☐ PORTRAIT
- ☐ SEQUENCE
- ☐ MEDIUM
- ☐ INTERACTION
- ☐ CLINCHER
- ☐ INTRODUCTORY OR OVERALL
- ☐ SIGNATURE

REVIEW

KEY CONCEPTS

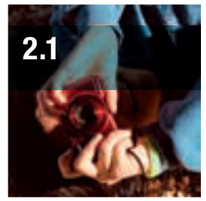
1. Composition is what separates stunning photographs from forgettable snapshots.
2. A quick read is defined as easily digestible content provided in a format that only takes seconds to read.
3. Whatever the assignment, you should always preview the environment.
4. Storytelling is an important part of photography. Use your feet to move closer to the subject and get shots that mean more.
5. The most expensive, newest equipment does not take great photos, you do.
6. **Be fair and objective!** Reporters cannot fabricate stories and photojournalists should not fabricate photos.
7. Yearbook photographers should strive to practice the photo story formula when capturing large or daily school events.

KEY TERMS

Ambient Light
Autofocus
Bird's-Eye View
Blur
Center of Visual Interest
Fill the Frame
Format
Frame
Framing
Layers
Leading Lines
Lighting
Photo Story
Reaction
Repetition of Form
Selective Focus
Shutter Release
Simplicity
Viewfinder
Visual Variety
Worm's-Eye View
Zoom Blur

Tyler Wright: San Diego National Yearbook Workshop

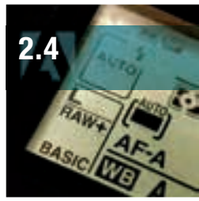
2 EQUIPMENT



Camera Types

Camera Handling Basics

Memory Cards



File Formats

Lenses

Cleaning and Maintenance

Camera Batteries

GETTING TO KNOW YOUR EQUIPMENT

ALL GREAT PHOTOS START WITH UNDERSTANDING HOW THINGS WORK

Photographers have a lot of gear at their disposal for making images. It's easy to get overwhelmed by all of the options available, but a basic understanding of photography equipment as well as when and how to use it will improve your chances of getting a great shot. The more familiar you are with your equipment, the more you can focus on capturing great moments.

2.1

CAMERA TYPES

From the user-friendly simplicity of a point-and-shoot camera to the flexibility and control of a digital single lens reflex (DSLR) camera, photographers have many options for how to make photographs. While all cameras share basic similarities and functions, knowledge of and experience with DSLR cameras give student photographers the best opportunity to make outstanding images.

POINT-AND-SHOOT CAMERAS

Point-and-shoot cameras offer an easy introduction to photography, as they handle everything automatically and allow the photographer to just "point-and-shoot" to capture an image. Most cellphones offer some form of point-and-shoot camera, with varying levels of control. While they are easy for new photographers to use for learning composition, they do not offer many options for controlling the exposure beyond preset shooting modes. For this reason, it's recommended photographers learn how to work with a DSLR system.

Maddie Lindsay: Green Valley High School, NV

CELLPHONE CAMERAS

Almost every cellphone comes with a built-in camera and camera app. Most cellphone cameras are point-and-shoot, but full manual control and editing are available through some **downloadable apps.** Photographers can find clip-on lenses for cellphone cameras, including telephoto, macro, fisheye and other specialty lenses.

While cellphones cannot match most advanced cameras in terms of lens selection, image quality or camera control, they do have some advantages over traditional cameras. Cellphones are much easier to carry at all times, meaning more opportunities to capture unexpected moments with less gear to lug around. Cellphones are also less conspicuous and intimidating than a bulky DSLR camera, and may be allowed in areas or events where a traditional camera would be forbidden or distracting.

SMARTPHONE PHOTOGRAPHY TIPS AND TRICKS:

- **Use both hands to hold the phone.** Lightweight cellphones require a steady grip to prevent blurry images, especially in low light when slow shutter speeds are required.
- **Take control of the focus.** Compose the image and tap the screen where you want to focus. Be sure to reset the autofocus point if the subject moves.
- **Look for good light.** Lack of full camera control means finding good light is even more important with cellphone cameras. The on-camera flash is weak and should not be relied upon to make good photos. Pay attention to both the light on the subject and the background.
- **Adjust the exposure in difficult light.** Do not settle for a poorly exposed subject. Many camera apps have a slider or symbol next to the autofocus point that adjusts the automatic exposure. Press and hold a finger next to the autofocus point and slide up or down to brighten or darken the image.

- **Avoid digital zoom.** Most cellphone cameras use digital zoom, which means the camera increases the size of the pixels rather than actually zooming the lens. This exaggerates digital noise and reduces image quality. Instead, “zoom with your feet” by moving closer to the subject.
- **Avoid over-editing.** Many camera apps provide a suite of tools for editing and manipulating images. Adding frames, filters, fake blur and too much saturation can make images look over-manipulated, and retouching or removing anything in a photo breaks the rules of photojournalism. Stick with simple exposure adjustments instead, and let the images speak for themselves.
- **Try different angles.** Without the ability to change focal length, cellphone photography can easily become repetitive. Get close to the subject, find low or high angles, and avoid distracting backgrounds by moving the camera.
- **Take multiple pictures.** To increase the odds of capturing the best moment or expression, don’t stop at one image. Be patient, wait for the right moment and take several pictures. With larger group shots, take multiple images to make sure everyone’s eyes are open.
- **Composition is king.** Pay attention to leading lines, the rule of thirds, framing and strong points of visual interest. Be patient and wait for key moments of emotion, expression and interaction to tell a story. Even the most basic camera can take great images following these guidelines.
- **Clean the lens.** Cellphone camera lenses are magnets for fingerprints and dust. Clean the camera lens with a microfiber cloth to improve image quality.

DSLR (DIGITAL SINGLE LENS REFLEX) CAMERAS

DSLR cameras offer many advantages that point-and-shoot cameras cannot offer.

1. **INTERCHANGEABLE LENSES**

   DSLR cameras use detachable and interchangeable lenses. Whether you need a long zoom, a wide aperture or even a specialty lens, DSLR cameras offer many options for different shooting situations.

2. **A HOT SHOE**

   DSLR cameras have a mount, called a **hot shoe,** for attaching and firing an external flash or remote trigger. Without a hot shoe, a camera is limited to the weak on-camera flash unit.

3. **ADVANCED SHOOTING MODES**

   In addition to preset shooting modes, DSLR cameras offer a selection of advanced control modes, including the full control of manual mode.

4. **NO SHUTTER LAG**

   Shutter lag is a significant delay between pressing the shutter and capturing the image. Compared to point-and-shoot cameras, DSLR cameras have no shutter lag and can more reliably capture peak moments.

5. **ADVANCED SENSORS**

   DSLR cameras have far more advanced sensors that offer higher megapixel counts and improved low light performance at higher ISOs. Image resolution is measured in **megapixels,** and a higher number generally means larger and higher quality images. When choosing an image resolution in camera, choose the highest resolution possible.

6. **VIEWFINDER**

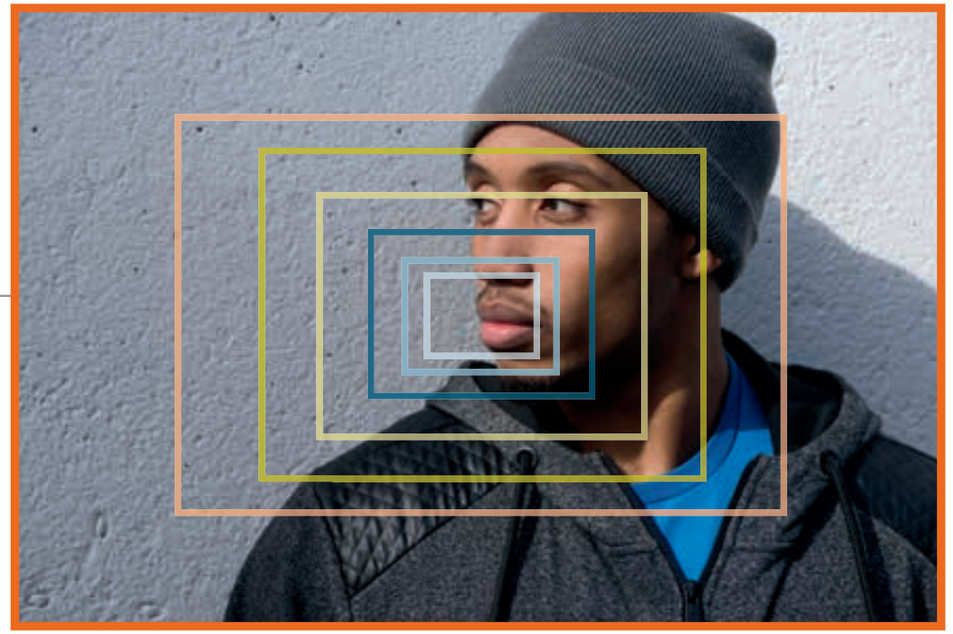
   DSLR cameras have an optical viewfinder. Photographers can frame up the image and see the camera settings at the same time, which helps to quickly adjust exposure settings without taking an eye off the action. Some DSLR cameras have a "live view" mode, much like a point-and-shoot camera, that shows a live preview image on the LCD screen. However, in order to take advantage of the full control offered by a DSLR, students need to learn to work while looking through the viewfinder.

CROP SENSORS VS. FULL FRAME SENSORS

Not all DSLR sensors are created equal. Historically, consumer film cameras were designed for use with 35 mm format film. **"Full frame"** cameras have a digital sensor the same size as a frame of 35 mm film, but are usually only found in more expensive camera models. Most entry-level camera sensors are APS-C format, known as **"crop sensors,"** which are considerably smaller and less expensive to manufacture.

This format is called crop sensor because the smaller sensor captures a smaller portion of the image than a full frame sensor would with the same lens, giving an image that appears to be "cropped" or magnified by a certain amount. This **crop factor** is 1.6 for Canon and 1.5 for Nikon. For example, a 100 mm lens designed for full frame sensors can be used on a crop sensor Canon camera, but the field of view will appear to be 160 mm instead because of the 1.6 crop factor. For this reason, full frame cameras can capture a wider field of view than crop sensor cameras using the same lens.

Be careful when buying lenses. Most lenses are designed for full frame cameras (Canon's EF and Nikon's FX lenses) and will work with both full frame and crop sensors, but some lenses are designed strictly for use with crop sensors. These lenses (Canon's EF-S and Nikon's DX) are smaller and lighter and produce a smaller image to fit the crop sensor. If used with a full frame sensor, the image is not large enough and will leave black spaces around the edge of the frame. Third party lenses will have their own designations, so do some research before purchasing a lens. Some online vendors provide a compatibility chart to check whether the lens will fit a particular camera body.



A CLOSER LOOK

THE DIOPTER

The dial on the side of an optical viewfinder is called a diopter. The diopter adjusts the focus of the viewfinder, but doesn't affect the focus of the lens. If the view through the viewfinder is blurry but the images on the screen are sharp, autofocus the lens and adjust the diopter until the viewfinder is in focus, too.

MICRO FOUR THIRDS (M4/3) CAMERAS

Several camera makers offer mirrorless camera systems designed to be smaller and lighter than DSLR cameras, but with most of the same features.

The cameras eliminate the mirror and optical viewfinder found on DSLR cameras, opting instead for an electronic viewfinder. This means photographers looks through the viewfinder just like a DSLR, but the image they see is an electronic preview of the exposure instead of the scene through the lens. The electronic viewfinder can overlay histograms, rule-of-thirds grids, and other information over the image. Without the mirror and lenses for the optical viewfinder, the camera body and lenses are much smaller and lighter, meaning less weight to carry around.

Because the sensor itself is smaller, M4/3 lenses can be made much smaller and lighter than DSLR lenses, and the lenses have a focal length approximately twice that of a similarly sized DSLR lens. A 300 mm lens on a M4/3 camera would have the same field of view as a 600 mm lens on a DSLR at a much lower price and weight. The aperture and depth of field are also doubled compared to a full frame DSLR. A micro four thirds lens at f/4 will give a depth of field equivalent to f/8 on a DSLR.

There are some drawbacks to the M4/3 system. Currently, the selection of lenses offered does not match those available for DSLR systems. Because of the magnification factor of the smaller sensor, it is difficult to produce wider-angle lenses. The autofocus system uses a different method than DSLR cameras, which can be a little slower, and the sensors do not perform as well at higher ISOs, making them poorly suited for low light and sports photography.

GOPRO AND ACTION CAMERAS

Popularized by the GoPro brand, action cameras come with waterproof plastic housing and shockproof lenses, designed to record action photos and videos in extreme situations where other cameras would be destroyed.

The cameras can record HD and 4K video with the option for single, burst, continuous and time-lapse photos. Most cameras have one button for taking photos or starting and stopping video, and remote triggers are available when the camera is not easily accessible. Most action cams are equipped with a wide-angle fixed lens and a mounting system so they can be attached to an object to capture unique perspectives. Action cameras use microSD cards for storage and charge with a micro-USB cable.

Action cameras are ideal for getting photos in dusty, wet, sandy or otherwise risky environments, and for capturing action from new perspectives, such as under water.

CAMERA HANDLING BASICS

2.2

The first and most fundamental technique of photography is properly holding the camera when taking pictures. While it sounds obvious, many new photographers can improve their photos just by following these simple techniques:

1 THE NECK STRAP

Place the neck strap around your neck. A neck strap is a cheap insurance policy that protects you from accidentally dropping your camera or having it pulled out of your hands.

2 SUPPORT THE CAMERA

Grip the camera firmly in your right hand and cradle the lens with your left hand underneath the camera, **pinky-to-pinky with your right hand.** Cradling the camera from underneath improves stability and reduces camera shake.

3 LOW LIGHT

In really low light situations, lean against a wall or prop your elbows on something stable like a wall or desk.

4 CREATE STABILITY

Keep your **elbows tucked in tightly** to your body and stand with your feet roughly shoulder width apart. This helps you create a stable base and reduces the chances of someone bumping your arm while you frame your shot.

5 TAKE A BREATH

For steady shots, take a breath, let it out halfway and hold it, then squeeze the shutter button gently rather than punching it. For shutter speeds slower than 1/60 second, even your breathing or a quick shutter press can cause blurry images from camera shake.

2.3 MEMORY CARDS

For something so small, memory cards play a big role in digital photography. It's easy to not give them a second thought, but as the physical record of your digital photos, you should be familiar with the basics of memory cards and good memory card hygiene.

The two most common memory card styles are SD (Secure Digital) or CF (Compact Flash) cards. Check your camera manual to see the preferred card for your camera. Most new consumer cameras use the SD format, and SD memory cards are usually less expensive and easier to find. All cards are rated with a write speed, a read speed and a storage capacity.

Write speed determines how quickly the camera can write images to the memory card. When the camera records an image, the image is stored in the camera's temporary memory, called a buffer, before writing to the memory card. The camera stops recording images when the buffer fills up and will not start again until there is space to take more pictures. It can take a long time to clear the buffer with a slow write speed, meaning missed shots while waiting for the card to catch up. A quick internet search can identify the appropriate card for each camera model.

Memory cards can become corrupted if reading or writing is interrupted. Many cameras have an indicator light that lights up as the card is accessed. Do not turn off the camera, open the memory card compartment, or remove the memory card while this light is on. Make sure to keep an eye on the battery level so it doesn't die while accessing the card, and avoid using the transfer cable to get the images from the camera to the computer.

FORMATTING YOUR MEMORY CARD

Memory cards need to be formatted each time they are used in a new camera body, and it's a good habit to format memory cards before going out on each assignment. The option to format a memory card can be found in the **settings menus** in the menu section marked with a wrench.

When formatting a memory card, the camera clears the card and reorganizes the memory card to work best with that camera system. The formatted images cannot be accessed anymore without special recovery software, so **make sure that all of the important photos have been uploaded before formatting a memory card.**

Formatting is not the same as deleting images. Deleting an image still leaves behind junk information on the card. Over time, the card will fill up with this junk data and it will slow down and experience errors. Make sure to bring enough memory cards so that there's no need to delete images to make more space.

What can you do if your card gets corrupted, or if a card is formatted before the pictures have been uploaded? Fortunately, there are several free or affordable recovery programs available that can scan the corrupted or formatted memory card and piece together most, if not all, of the lost images. SanDisk, the original creator of the SD card technology, produces data recovery software called RescuePro that works with all brands of SD and CF memory cards. Once a card has been formatted, the camera will record over the old file information each time an image is recorded, so it's best to use recovery software as soon as possible after an accidental formatting to prevent losing too many images.

WHICH MEMORY CARDS TO CHOOSE

There's no point in spending a lot of money on high-capacity memory cards when most photographers won't come close to filling them up. JPEG files are relatively small and memory cards should be formatted on a regular basis anyway. Use multiple small memory cards for longer assignments rather than one large one. That way, if the unthinkable happens and a card is lost or corrupted, only a portion of the assignment will be lost.

BEWARE OF COUNTERFEIT MEMORY CARDS

Some third-party online sellers offer counterfeit cards at steep discounts. It's difficult to visually identify the difference between a counterfeit card and the real thing, so be sure to buy name-brand memory cards from trusted sellers. Counterfeit cards may not work at the advertised speed or storage size, and are more likely to become corrupted.

TAKE A BREATH

A CAMERA CARD THAT WON'T READ OR WRITE

SD cards have a small sliding switch on the side that locks access to the card. If the switch is accidentally moved to the lock position, the camera will not read from or write to the card.

Check the lock switch first if you receive an error message from your camera or computer that says the card is "write protected" or locked.

2.4 FILE FORMATS

Images can be created in different file formats, and each format differs in size and quality.

JPEG

The most common file format used is the **JPEG (Joint Photographic Experts Group)** format, which is the smallest, most compressed, and most widely recognized file format. JPEG files are made by taking the information from the camera sensor, applying edits based on your camera settings, discarding extra information and compressing everything down to a manageable file size. **This process of discarding information to create smaller files is called lossy compression**, which means each time the image is edited and saved, some of the information and quality is lost. This file format is best for most assignments and takes up the least amount of storage space, but also has the lowest quality.

TIFF

TIFF files (Tagged Image File Format) apply in-camera edits when creating a file, but they use lossless compression, meaning no image data is discarded when creating the file and no image data is lost when saving the file. As a result, TIFF files are much larger in size than JPEG files and are higher quality as well. TIFF files are not used often, if at all, by most journalists, as their larger file size can quickly fill up storage space on the memory card. TIFF files are reserved for special photo assignments when large high-quality files are needed, and are usually converted to JPEG for actual use.

RAW

RAW files contain all of the unedited image information from the camera sensor and are the largest of the file types created in camera. Because RAW files contain all of the sensor information, they have much more flexibility when editing the image. However, editing RAW files requires an extra step with special editing software, such as Adobe® Camera Raw (accessed in Adobe® Photoshop®) or Lightroom.® Each camera brand has a different RAW file type (CR2 for Canon and NEF for Nikon, for example), but DNG (digital negative) is the universal RAW file format and is compatible with all RAW editing software. Because of their size and special editing requirements, RAW files should only be used for especially rare and important assignments by photographers who have experience with RAW editing.

PNG

Portable Network Graphic, or PNG files, were originally designed for sharing images on the web. PNG files use lossless compression as well, so the files retain their quality when editing and saving and are ideal for preserving sharpness in fine details and text. PNG files also support transparency, which means the transparent parts of the image (represented by gray and white checkerboard) can be placed over other images on a webpage or layout without blocking the content. Because of their size and the lack of support by camera makers, PNG files are not an option in camera, and are used more for graphic design than photography.

PSD

Adobe Photoshop Document, or PSD files, are created by Adobe Photoshop to preserve editing layers in working files. When working in Photoshop, different edits can be performed in separate layers so that each layer can be adjusted individually. When files are saved as one of the other common file types, the separate layers are combined into one and the ability to adjust those layers is lost. However, saving as a PSD file will preserve all of the layers for further editing. Because of the additional information stored in the layers, PSD files tend to be quite large.

FILE FORMATS

SMALLEST ← → LARGEST

	JPEG	PNG	TIFF	RAW	PSD
LOSSLESS		X	X	X	X
LOSSY	X				
PRINT OR WEB	BOTH	WEB	PRINT	NEITHER (FOR EDITING)	PRINT
CAMERA AVAILABLE	X		X	X	

2.5 LENSES

Ask professional photographers about the best gear investment and they'll probably tell you to put your money into good lenses. Camera bodies are changed every couple of years, often without significant improvement, but good glass will last for decades. Keep in mind, branded lenses only work with the same brand camera, so pay attention when purchasing lenses and stick with the same brand when purchasing new gear.

It's important to understand how lenses affect photography and which lenses are best suited for each situation.

FOCAL LENGTH

Focal length determines the field of view of the lens, and focal length measurements are written in millimeters (mm). The smaller the focal length measurement, the wider the field of view. Some common focal length ranges are listed below:

- Ultrawide—10 mm to 14 mm
- Wide—16 mm to 35 mm
- Normal—50 mm
- Telephoto—85 mm to 300 mm
- Super Telephoto—higher than 300 mm

NOTE: All images taken with subject and photographer in the same positions. Only the lenses changed.

In addition to determining the field of view, **focal length** alters the appearance of the subject and background. Wide focal lengths create **distortion**, or the appearance that the nearest objects are larger and distant objects are much smaller. It's because of this exaggeration that wide-angle lenses do not make good portrait lenses. Telephoto lenses create **compression,** or the appearance that the subject and background are much closer together. Telephoto lenses are ideal for portrait lenses because they do not distort facial features, and are great for sports because they allow you to focus on subjects that are much farther away.

24 mm compression

50 mm compression

105 mm compression

200 mm compression

PRIME LENSES VS. ZOOM LENSES

Lenses can be grouped into two classes, fixed focal length (prime lenses) or variable focal length (zoom lenses), and each group has its pros and cons.

ZOOM LENSES

Zoom lenses can be adjusted through a range of focal lengths, as indicated on the lens barrel. Zoom lenses offer the convenience and variety of multiple focal lengths without having to change lenses. Fewer lens changes mean fewer missed moments and a lower chance of dust entering the camera. However, zoom lenses are **considerably heavier,** and some longer zoom lenses, such as the 70-200 mm f/2.8, even include a special monopod attachment to support their weight for long periods of time. Wide aperture lenses are called "fast lenses" because the wider aperture lets in more light, allowing for a faster shutter speed.

PRIME LENSES

Prime lenses are set to only one focal length and cannot be zoomed. If you want to change the look of your image, you have to **"zoom with your feet"** by walking closer or farther from your subject. Prime lenses force the photographer to think about where to stand to get the best image. As a result, they teach you to see the world at different focal lengths. Prime lenses also use fewer lens elements than zoom lenses, making them smaller, lighter and easier to produce in a wide maximum aperture. Because the light has to travel through fewer elements, the image quality tends to be much sharper than that of zoom lenses as well.

VARIABLE APERTURE VS. FIXED APERTURE ZOOM LENSES

When using zoom lenses, be aware of the maximum lens aperture, and whether it is fixed or variable. The maximum aperture is listed on the front of the lens or the side of the lens barrel and shows the widest aperture possible.

VARIABLE APERTURE

The maximum aperture of variable aperture zoom lenses changes throughout the zoom range. For example, the 55–250 mm f/4–5.6 lens has a focal length range of 55 mm to 250 mm. At 55 mm, the maximum possible aperture is f/4, but as the lens is zoomed in, the maximum aperture decreases to f/5.6 This means that zooming the lens can actually **change the exposure** of the image by changing to a smaller aperture.

FIXED APERTURE

For fixed aperture zoom lenses, the maximum aperture is constant throughout the entire range of focal lengths. A 70–200 mm f/2.8 lens can be opened up to f/2.8 at 70 mm and will stay at f/2.8 as you zoom through the full range of the lens. While f/2.8 is the widest available aperture, a photographer can still utilize the full range of f-stops at each focal length. Fixed aperture lenses are more **desirable when shooting in low light** because the exposure does not change as the lens is zoomed in.

SPECIALTY LENSES

Some photo effects require the use of lenses designed for a special purpose.

MACRO LENSES

Macro lenses offer the ability to focus with the lens inches from the subject, **creating a detailed close-up image.** The macro function is either offered as an area on the focal ring, or with a switch to macro focus mode. Because of the close focal distance, it's sometimes best to use a narrow aperture (large f-numbers such as f/8 or higher), as depth of field can be incredibly thin at wider apertures.

Luckily, macro lenses can do more than just take close-up pictures. Many photographers use the 100 mm f/2.8 macro lens as a portrait lens as well.

Maddie Emerson: Pittsburg High School, KS

FISHEYE LENSES

Fisheye lenses are a special type of ultra-wide lens that have an extremely wide field of view. It's so wide that it's common for the photographer's feet to end up in the photo if they aren't careful. Because they are so wide, fisheye lenses have **extreme distortion,** and any close-up subjects that aren't in the center of the frame will appear warped and stretched toward the photo's edge. For this reason, fisheye lenses aren't used for portraiture (other than for artistic effect) but are often used in extreme sports photography for their unique and wide-angle appearance.

Annunziata Morek: Wadsworth High School, OH

A CLOSER LOOK

KIT LENSES

Many photographers start out with a "kit lens," a general-use lens included in most basic camera packages. Kit lenses are generally 18–55 mm with a maximum aperture of only f/3.5–5.6. These maximum apertures do not perform well in low light environments, such as gyms or nighttime sports. However, in bright outdoor environments, kit lenses offer a zoom range that covers everything from ultra wide to normal and can cover all kinds of photography situations from group shots to portraits. The maximum apertures are not wide enough to blur backgrounds, but they will work just fine when you need one lens for a variety of shots on a sunny day.

BY THE NUMBERS

LENSES FOR ALL BUDGETS

Most photography needs can be met with a small collection of lenses. Here are some options for budgets big and small. The biggest factor for lens price, besides build quality, is the maximum aperture of the lens.

SMALL BUDGET:

- **28–135 mm f/4–5.6: Versatile zoom lens with a wide zoom range**
- **35 mm f/2: Wide angle and wide aperture prime lens, good for low light**
- **50 mm f/1.8: Normal prime lens, great lens for most assignments, some indoor sports photography, portraits**
- **85 mm f/1.8: Telephoto prime lens, great lens for portraits and indoor sports**
- **70–300 mm f/4–5.6: Long telephoto zoom, great for outdoor daylight field sports**

BIG BUDGET:

- **16–35 mm f/2.8: Wide angle zoom lens with wide maximum aperture**
- **50 mm f/1.4 or f/1.2: Extremely wide aperture normal prime lens, great for most assignments**
- **85 mm f/1.4 or f/1.2: Extremely wide aperture telephoto lens, great for indoor sports**
- **70–200 mm f/2.8: Wide aperture telephoto zoom, great for outdoor nighttime field sports, indoor sports, and portraits**

LENS ACCESSORIES

LENS FILTERS

You can buy lens filters for many different purposes, but **the most basic purpose is protection.** Lens filters screw into the threads on the front of the lens element, and certain filters (UV haze or skylight) provide an extra layer of glass over the front of the lens without affecting the image to any noticeable degree. If the camera or lens is accidentally dropped or the front of the lens is scratched, the presence of a filter can mean the difference between replacing an inexpensive filter or buying a new lens.

Filters must be bought to match the diameter of your front lens element. You can find the diameter by looking for the measurement in millimeters next to the ø symbol on the front of the lens, or on the inside of the lens cap.

TELECONVERTERS

Lens teleconverters increase the apparent focal length of a lens at the cost of reduced aperture, image sharpness and focus speed. Teleconverters attach between the lens and camera body and magnify the focal length of the lens by a set amount, usually by 1.4, 1.7, or 2 times. However, this also reduces the aperture by a set number of stops. For example, a 2x teleconverter has a 2-stop aperture reduction, so using it on a 200 mm f/2.8 lens would give the appearance of a 400 mm f/5.6. Higher magnifications have more reduced aperture, slower focus speed and lower image quality, so it's best to use a longer lens with a shorter teleconverter to reduce these drawbacks.

LENS HOODS

Lens hoods attach and extend from the front of the lens and are designed to prevent lens flare. Lens flare occurs when light shines directly into the lens, causing hazy, washed-out images. Lens hoods block any stray side light from entering the lens and are most useful when photographing indirectly toward the sun or a bright light source.

Without lens hood

With lens hood

LENS CHANGING TIPS

When changing your lens, follow these simple tips:

- Avoid changing your lens in dusty or sandy environments.
- Keep your camera body pointed downward when the lens is removed to keep dust from falling into the exposed sensor area.
- Keep the lens cap and lens mount cap on your lenses when not in use to prevent dust buildup that could end up in your camera body.

LENS CAPS, MOUNT CAPS AND FILTERS PROTECT YOUR LENSES AND CAMERA BODY

THE RIGHT LENS FOR THE JOB

Certain assignments require special lenses. Knowing the best lens for the job will help capture the shot you want.

GENERAL CLASSROOM ASSIGNMENTS

A normal lens, like the 50 mm f/1.8, is perfect for most classroom assignments. Sometimes called the **"nifty 50,"** these lenses are referred to as normal lenses because they have a similar field of view as the human eye. The maximum aperture, f/1.8, is also important because it can take pictures in low light settings without having to use a high ISO, a slow shutter speed or a flash.

FIELD SPORTS (SOCCER, FOOTBALL, TRACK)

For outdoor field sports, **a longer telephoto zoom lens** (200 mm to 300 mm) offers the reach needed to get good action shots of players on the field. The maximum aperture is not as crucial during the day when there is plenty of light.

However, you'll want a wide aperture like f/2.8 for shooting field sports at night under stadium lights to use the fastest shutter speed possible without using a high ISO.

GYM SPORTS (VOLLEYBALL, BASKETBALL, WRESTLING) AND STAGE PRODUCTIONS

For indoor sports, **a wider aperture takes priority over long focal length.** Lenses like an 85 mm f/1.8, or a 70–200 mm f/2.8 offer a long reach with a wide maximum aperture, allowing use of a fast shutter speed in lower light conditions.

AFTERMARKET LENSES

Lenses are an up-front investment that can be expensive but last a long time. Some photographers choose to buy third-party lenses that are compatible with major camera brands, but at a fraction of the price. Brands such as **Tokina, Tamron** and **Sigma** provide lenses with similar focal lengths, apertures and specialty features as offered by major brands. For most purposes, the lenses are just as good and produce quality images at a price much more friendly to new photographers. One important note if purchasing a third-party lens: each major camera brand has a different lens mount system. Online vendors will often provide a lens compatibility chart for various camera types.

TRIPODS AND MONOPODS

With certain heavy lenses, holding the camera steady for a long time is difficult, and longer lenses tend to show camera shake more easily. In these situations, **a tripod or monopod can reduce camera shake by providing solid support to the camera.**

A tripod is a three-legged support for a camera, designed to stand on its own and hold the camera steady for long exposures. Tripods are great for landscape shots, night photography, group shots and any situation where a slow shutter speed is necessary due to low light or a high f-number.

A monopod is a single extendable pole that supports longer lenses and is designed to be more mobile than a tripod. Many longer and heavier telephoto lenses come with a **rotating ring called a lens collar** that rotates around the lens and mounts on a monopod or tripod. The lens collar moves the support forward onto the lens, allowing for more natural movement of the camera and taking the strain off of the camera's lens mount. It's common to see photographers at sporting events using long lenses on monopods to capture action shots.

2.6

CLEANING AND MAINTENANCE

It's important to know how to maintain your camera equipment. All parts of the camera require some upkeep every now and then to perform at their best. Remember, the biggest enemies of cameras are salt, sand, water and dust.

LENS CLEANING

The basic tools for cleaning a camera and camera lens include a lens brush, lens cloth or tissues, lens cleaning spray, an air blower, cotton swabs and rubbing alcohol.

- **Lens brush**—Used for lightly brushing dust off the lens.
- **Lens cloth and cleaning spray**—Used for cleaning fingerprints and smudges off of the lens. Never spray the cleaning spray directly on the lens. Spray the cleaning cloth first, then use the cloth to clean the lens.
- **Air blower**—Used for gently removing dust from your camera sensor.
- **Cotton swabs and rubbing alcohol**—Used for cleaning corrosion from battery and lens terminals.

CAMERA SENSOR CLEANING

If you start to notice small spots that show up in every image, you probably have dust on your sensor. Normally, the sensor hides behind the shutter curtain until you take a picture. In order to move the shutter curtains to access and clean your camera sensor, follow these steps:

1. In a dust-free environment, remove your camera lens and set aside.
2. Search through the camera menus for a setting similar to **"Mirror lockup for cleaning."** This setting raises the viewfinder mirror out from in front of the shutter curtains and exposes the sensor for cleaning. If you cannot find this setting, you can choose a long shutter speed (10 seconds or more) in manual mode.
3. Hold the camera so that the opening is facing downward to keep dust from settling inside the camera. Activate the cleaning mode or press the shutter for a long exposure to expose the sensor. Then use a hand-squeezed air blower to spray bursts of air upward inside the camera to knock loose any dust on the sensor. Repeat this step several times. **Do NOT use a compressed air spray.** It is far too powerful, and if used incorrectly, the chemical propellants can end up inside your camera and damage your sensor.
4. Check to see if the dust is gone. Replace the lens on the camera, choose a narrow aperture, and take a picture of a blue sky or a solid white wall to see if the dust spots remain. If so, repeat the process until they are gone.

BATTERY AND LENS CONTACT CLEANING

Occasionally, the camera may not turn on readily, or the camera may give an error message that the lens is not communicating with the camera. Both problems may be caused by **oxidized electrical terminals.**

LENS CONTACT CLEANING

If you remove the lens from the camera body, you will notice a row of small metal pins that extend from the lens mount and match up with metal connectors on the camera body. These surfaces can be covered by a thin layer of oxidation, just like the crust that forms on car battery terminals. To clean them, use a cotton swab with a very small amount of rubbing alcohol, and gently swab the terminals to remove the oxidation layer.

BATTERY TERMINAL CLEANING

Similar to the lens, the battery has electrical terminals to connect to your camera, and oxidation may cause the battery to malfunction as well. **Use a clean pencil eraser and lightly rub the surface of the terminals on the battery.** To clean the terminals inside the camera body, hold the camera with the battery opening pointed downward so any bits of eraser do not stay in the camera and gently rub the metal terminals. Alternatively, for coiled spring battery terminals, use a cotton swab with a small amount of rubbing alcohol to rub the contacts and let dry completely before reinserting the battery.

CAMERA BATTERIES

2.7

Before an assignment, make sure the camera batteries are fully charged and that you have a charged backup battery as well. Following these procedures will ensure a long battery life:

1. **Minimize the use of the rear screen**—using both Live View and reviewing files runs the battery down faster, so practice using the viewfinder rather than Live View.
2. **Choose name brand camera batteries**—off-brand batteries are a more affordable option, but much less reliable and will have to be replaced more frequently.
3. **Do not** let the battery discharge completely—if the low battery signal begins to blink, switch out batteries or stop taking pictures. It's possible to corrupt the memory card if the battery dies while writing an image.
4. **Do not** put batteries back on the charger until they've discharged past halfway—allow the batteries to discharge most of the way before putting them back on the charger. Batteries will develop a "charge memory," and if they are only discharged and recharged a small amount, it will shorten how long the battery lasts before it's empty.
5. **Do not** leave batteries on the charger after they've finished charging.
6. **Turn off image stabilization on the lens**—image stabilization uses battery power to keep the camera lens steady when focusing and taking pictures at slow shutter speeds. Instead, use a monopod or take extra care to support or hold the camera steady.

FOR FLASH BATTERIES (AA):

1. **Use rechargeable batteries**—rechargeable batteries are more expensive up front but last much longer and prevent battery waste.
2. **Remove after charging**—leaving batteries on the charger for an extended period of time can shorten the life of the battery.
3. **Use slow-charging to prolong battery life**—quick chargers generate a lot of heat, which shortens the battery life. Look for a battery charger with a slow charge function. Slow charging takes twice as long but extends the life of the batteries significantly.
4. **Do not rapid-fire the flash at high power**—firing the flash quickly without stopping generates heat in the batteries and may cause the flash to overheat and shut down until the batteries have cooled off. Slow down when taking flash pictures, or use a higher ISO for faster recycle times.

WEATHER EMERGENCIES

Always check the forecast before an assignment and make sure to prepare for changes in weather.

IN CASE OF RAIN:

- Purchase a **rain cover** for the camera. Several companies make rain covers designed to fit any combination of camera, lens and flash.
- **For a less expensive disposable option**, cut a hole in the corner of a two-gallon resealable plastic bag just large enough to fit around your lens hood. Put the camera inside with the lens hood just out of the hole, and use electrical tape to seal the bag around the lens hood.
- For an even less expensive option that works in light rain, grip the lens with your left hand and wrap your hand and camera together with plastic wrap. **Be sure to cover the entire lens and camera body.**
- Save the **silica gel packets** found in shoeboxes or in shipping boxes and keep a few in the camera bag. These will absorb moisture from the bag, keeping the camera and bag dry in humid environments.
- Keep a **plastic rain poncho** in your camera bag for rain emergencies. A plastic drop cloth or trash bag can be used to keep your camera bag dry.

IN CASE OF COLD WEATHER:

- **Keep spare camera batteries** under layers of clothes to keep them warm with body heat. Batteries lose their charge significantly faster when they are cold.
- When moving between cold and warm environments, lenses will fog up. Make sure to get to the location early enough for the lenses to defog.

CAMERA BAGS

Working professionals use camera bags to keep their gear safe, organized and readily accessible when needed. Here are some tips and tricks to get the most from a camera bag:

- **Have a place for everything**—don't miss photo opportunities because of hunting for the piece of gear you need.
- **Don't overcrowd the bag**—keep the most-needed gear accessible, not buried under other equipment.
- **Be prepared**—keep lens cloths, cleaning supplies, a notepad and pencil, backup batteries, memory cards and emergency weather gear. Don't get caught without the gear you need.
- **Create camera bag sets**—label each camera bag and all gear inside with a number, and keep a laminated card with an inventory of gear for that bag. Have assigned bags for sports or other special assignments and include the necessary lenses and equipment.

CAMERA CHECKOUT SYSTEMS

In order to keep track of equipment, many successful journalism programs use an equipment checkout system. Here are some sample guidelines for a camera checkout system:

- Checkout times are before and after school, during lunch, or during the student's scheduled class period. Any other times require the instructor's permission. Cameras checked out during the school day must be returned before the end of the day, and cameras checked out for after-school events must be returned before the start of the next school day. **Students must use a camera bag for off-campus or overnight use,** and are responsible for the camera bag as well.
- Students are required to check out cameras and equipment from the adviser or editors and have to record name, date and equipment borrowed. To check equipment back in, the adviser or an editor must account for all of the equipment and sign off that it's all been returned.
- **Students are responsible for all labeled accessories**, including lens caps, chargers, batteries and card readers. Protect gear from damage and make sure all batteries are charged when returning the gear.
- Students are responsible for making sure the camera has a working memory card, battery and any other needed equipment necessary for the assignment, including a press pass. Memory cards are due the following day and must be uploaded according to class guidelines.
- **Only the student who signed out the equipment may use it.** The student agrees not to leave the equipment in a car, locker, on the sidelines of an event or with someone else for safe keeping. The student assumes responsibility for replacing or repairing lost, stolen or damaged equipment under their care and acknowledges that their grade may be affected if they fail to return the gear on time.
- Students are required to sign an agreement stating they've read and understand the rules of the checkout system and accept responsibility for the equipment under their care, as well as the consequences of failure to follow the rules.

REVIEW

KEY CONCEPTS

1. **Know your camera inside and out!** It doesn't matter what kind of camera you're using, you'll have a hard time consistently making good images if you're not familiar with your equipment.
2. Practice good camera handling to improve your shots. Make your body as steady as possible, keep your arms in tight, cradle the camera and control your breathing to prevent camera shake at slow shutter speeds.
3. Format your memory cards regularly, preferably before every shoot. Use a card reader to upload from the memory card to the computer. Be careful not to interrupt the camera when it's reading or writing, or you could lose your images!
4. JPEG files are fine for most assignments. RAW files are for rare or special assignments and require lots of memory card space and special editing software.
5. Quality lenses are one of the best investments for photographers. Wide aperture lenses perform better in low light and allow for faster shutter speeds without sacrificing quality. Use lens filters as an extra layer of protection.
6. Learn how to maintain your equipment and **clean it regularly**. A little bit of maintenance goes a long way, but be very careful when cleaning around or inside the camera body.
7. When going out on assignment, pay attention to the weather and be prepared to protect your equipment.
8. Keep track of your gear with a well organized camera bag, and treat your equipment as if it were your own.

KEY TERMS

Buffer

Camera Checkout System

Compact Flash (CF)

Compression

Crop Sensors

Crop Factor

Diopter

Distortion

DSLR
(Digital Single Lens Reflex)

File Formats
(JPEG, TIFF, RAW, PNG, PSD)

Fisheye Lens

Fixed Aperture

Formatting

Focal Length

Full Frame Sensors

Kit Lenses

Lens Collar

Lens Filters

Lens Hoods

Lens Pin

Macro Lens

Memory Cards

Micro Four Thirds (M4/3)

Monopod

Nifty Fifty

Prime Lens

Secure Digital (SD)

Shutter Lag

Teleconverters

Tripod

Variable Aperture

Wide-angle lens

Write Protected

Zoom Lens

Nichole Baxter: Coopersville High School, MI

3 EXPOSURE

MAKING THE IMAGE

EXPOSURE, WHITE BALANCE, FOCUS AND MORE

Exposure is the range of light recorded by the camera sensor to make an image. The human eye can perceive detail in a wide range of light, from dark blacks to bright whites. Your camera, however, can only record a small portion of that range. A "good" exposure records the subject with visible detail without being too bright **(over-exposed)** or too dark **(under-exposed)**. Before discussing the camera at all, the most important factor of exposure is the light itself.

3.1

SEEING THE LIGHT

Light is a powerful storytelling and compositional element and should be one of the first things a photographer notices when taking pictures. When looking at the light, there are two important aspects: the quality and the direction.

Bria Hunt: Bryant High School, AR

QUALITY OF LIGHT

Quality of light refers to hard and soft light.

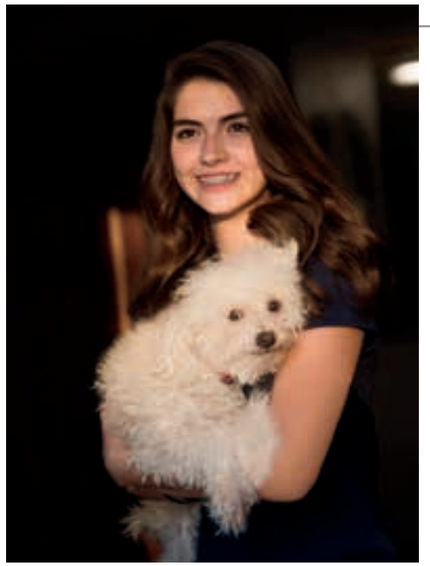
Hard light produces bright highlights, saturated colors and dark shadows with well-defined edges, and usually comes from light sources that are relatively small compared to your subject. Think of the hard shadows cast by the sun on a bright, cloudless day. Even though the sun is enormous, it is incredibly far away and appears as a small point of light in the sky on a sunny day. All of the light it produces shines on the subject from the same direction like a spotlight, creating a hard-outlined shadow.

Soft light comes from larger light sources that spread out the light around the subject and produce a smooth transition from light to shadow, as well as softer muted colors. Shadows are lighter and highlights are not as bright, creating more even lighting. On a cloudy or overcast day, sunlight filters throughout the clouds from all directions, producing softer, less intense light and softer shadows.

Juan-Felipe Arias: Stratford High School, TX

DIRECTION OF LIGHT

Light can also be classified by the direction of the light source relative to your subject and can have a dramatic effect on images if used well.



FRONT LIGHT

Front light comes from the same direction as the photographer. Front light is called "flat" light because it reduces the three-dimensional appearance of the subject by eliminating shadows. It may also create unflattering shadows behind the subject. The on-camera flash produces front light on the subject.

Hannah Kunz: Westlake High School, TX

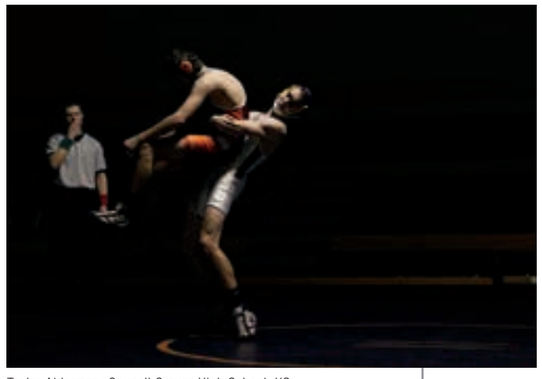
SIDE LIGHT

When the light source is positioned to the side of the subject, it creates more shadows, giving the subject texture and depth. Side light can be subtle or dramatic, depending on the quality of light, and the shadows produced emphasize the three-dimensional shape of the subject.

Photographers love the **"golden hour"** before sunset and after sunrise because of the warm, golden, directional light the sun emits.

TOP LIGHT

Top light is a variation on side light, but is usually not desirable for pictures of people's faces. Try to avoid outdoor portraits midday on a sunny day, as the hard top light produces unflattering nose and eye socket shadows. However, top light can be used intentionally for some dramatic portraits.



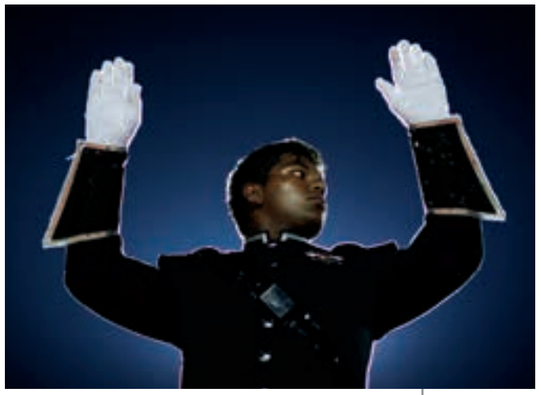
Taylor Alderman: Council Groves High School, KS

BACKLIGHT

Backlight describes when the light source comes from behind the subject. **If the subject is in full shadow with strong backlight, it is called a silhouette.** When shooting a silhouette, pay extra attention to the subject's form, especially the outline and edges. A strong silhouette should have separation between the subject's limbs and surroundings and should give the viewer enough information to understand what the subject is. If your subject is partially lit from the front or side as well, this is a partial silhouette.

Robin May: Marist High School, OR

Paul Nordquist: Edina High School, MN



Erin Dempsey: Coppell High School, TX

Diana Albrecht: Tartan High School, MN

RIM LIGHT

Rim lighting occurs when the subject blocks a hard light source pointed toward the camera. Because the light source is blocked, the only visible light from that source is a thin rim of light at the subject's edge. This technique helps to create separation between a dark subject and dark background. You can create rim light by placing a light source behind the subject so that the subject is in between the light source and the camera.

COMBINATION LIGHT

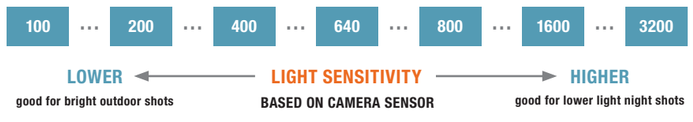
In many lighting situations, light comes from a combination of sources with different directions and qualities of light. Pay attention to the light and place your subject in a way that best uses the available light from each direction.

3.2 FACTORS OF EXPOSURE

There are three factors in camera that work together to control the exposure of the image: **ISO, aperture and shutter speed**. Each factor controls the exposure of the image in a unit of measure **called a stop**. Increasing the exposure by one stop will double the amount of light recorded, and decreasing the exposure by one stop will halve the amount of light recorded.

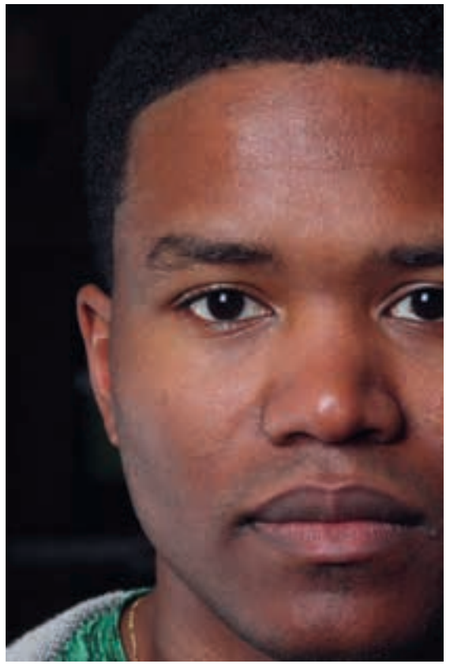
ISO

ISO refers to the sensitivity of the camera's sensor to light and should be set to match the light level:



For example, the lowest sensitivity, ISO 100, requires a lot of light to make a good exposure, such as a bright, sunny day. On the other hand, ISO 3200 is a high sensitivity setting and can be used to make images in a gym or auditorium where the light level might be much lower.

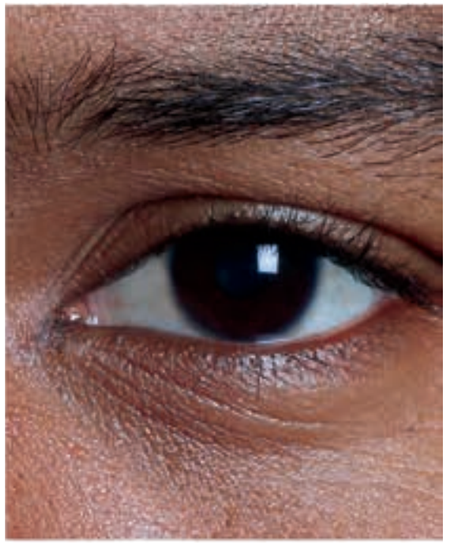
Raising the ISO has a cost. ISO also affects image quality and as the ISO number increases, **the level of digital noise increases**. Images recorded at higher ISO levels appear grainier, less sharp and detailed, and with less saturated colors than images recorded at a lower ISO. For this reason, always try to set the ISO at the lowest possible setting for the lighting situation.



ISO 3200 full photo

ISO 100 full photo

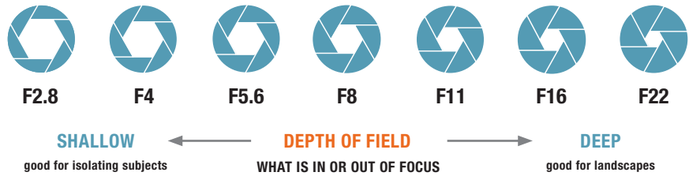
ISO 3200 detail



ISO 100 detail

F-STOP

The aperture, or opening, of the lens is measured in f-stops. Much like the pupil of the eye, the aperture can be opened wider to let in more light, or narrowed to let in less light. Each f-stop is chosen so that opening the aperture by one f-stop will double the amount of light and closing the aperture by one f-stop will halve the amount of light.



The smaller the number of the f-stop, the wider the aperture. An f-stop of f/2.8 is a wide aperture that lets in a lot of light and an f-stop of f/22 is a small aperture that lets in little light.

The aperture of the lens also controls the depth of field of the image. Depth of field is the amount of the scene in focus in front of and behind the subject. Wider apertures (small f-stop numbers like f/2.8) produce a shallow depth of field, which means the subject is in focus but objects and backgrounds farther away from the subject are blurry. These apertures are great for portraits, where blurring the background puts the focus on the subject. Narrower apertures like f/16 or f/22 produce a deep depth of field, which means most of the scene is in focus from foreground to background. These apertures are great for landscape photography or for team photos where you want to make sure everyone in a large group is in focus.

f/2.8 full photo

f/22 full photo

f/2.8 detail

f/22 detail

SHUTTER SPEED

The camera sensor is covered by two flat curtains, or shutters, that keep out light. When you press the shutter button, the first shutter slides down, exposing the sensor to light, and the second shutter slides down behind it, returning the sensor to darkness. The speed of these shutters determines how long the sensor is exposed to light, which, in turn, affects the exposure. The slower the shutter moves, the longer the shutter stays open, the longer the sensor is exposed to light and the brighter the image. The faster the shutter speed, the less time the sensor is exposed to light, and the darker the image. For this reason, taking photos in low light often requires a slower shutter speed to get a proper exposure.


Kyle Ehemann: Mundelein High School, IL

Shutter speed is usually written as a fraction of a second. For example, a shutter speed of 1/500 means the sensor is exposed to light for 1/500 of a second and captures 1/500 of a second of motion. When shutter speeds slow down to longer than a second, the shutter speed is represented with quotation marks. A “2” shutter speed is two full seconds of exposure. **Some cameras come with a bulb setting** that keeps the shutter open as long as the shutter button is held down. This can be used for extremely long exposure photos, such as star trails, light painting, or fireworks.

Shutter speed also controls how motion is captured in the image. At slower shutter speeds, the sensor records movement for a longer amount of time, and that movement is recorded as **motion blur.** This can be used to good effect with techniques like panning and zoom blur.

A CLOSER LOOK

PANNING

Panning is using a slow shutter speed to capture a fast moving subject as it passes in front of the camera. The technique produces a sharp subject with a motion-blurred background. It's important to use a slow shutter speed (as low as 1/15 or 1/20 second for runners) to really capture the sense of motion and to keep the same framing on the subject the entire way through the movement. The trick is to keep following the movement of the subject with the lens even after pressing the shutter button. Use continuous shooting mode and take several images as the subject passes in front of the lens to improve the chances of getting the shot. Telephoto lenses will produce a more dramatic background blur effect than wide-angle lenses. This technique can create interesting action shots, but takes a little experimentation and practice to get right.

Without panning

With panning

Without zoom blur

With zoom blur

A CLOSER LOOK

ZOOM BLUR

Zoom blur is another technique for showing motion in an image, but this technique can be used with a stationary subject. Using a slow shutter speed and a zoom lens, zoom the lens in one direction, either in or out, while pressing the shutter button. The slow shutter speed captures the zooming of the lens as an outward-moving blur of the image, creating a sense of action and movement. Experiment with different shutter speeds, zoom directions, and pausing before or after zooming to get different results.

At slower shutter speeds, be careful to look out for camera shake. Camera shake occurs when the shutter speed is too slow and movement of the camera blurs the entire image. This can be prevented by using a tripod or making the camera as steady as possible: grip the camera firmly with your right hand and cradle the lens with your left hand underneath, pinky-to-pinky. Make your body as steady as possible by spreading your feet to shoulder width, tuck your elbows in to your sides, and hold your breath while gently squeezing the shutter button.

A general rule of thumb to prevent camera shake is to use a shutter speed that is at least as fast as 1/focal length. For example, a 50 mm focal length needs at least 1/50 second and a 300 mm focal length needs at least 1/300 second to eliminate camera shake while holding the camera. For crop sensor cameras (most entry-level cameras), the shutter speed should actually be a little faster than this rule of thumb.

To freeze action, use a faster shutter speed. The recommended slowest shutter speed to freeze most human action is 1/500 second, but some sports require a faster shutter speed, such as hockey, volleyball, baseball or any sport that uses a fast-moving stick or ball.

Stopping action with 1/500 second shutter speed—no blur

Stopping action with 1/250 second shutter speed—some blur in limbs

3.3

PRESET EXPOSURE MODES

Your camera has a dial full of modes for many different situations and levels of photography experience. Whether you're a beginner or a more experienced photographer, knowing the right mode for the right situation will help you get better photos.

FULL AUTO MODE

Auto mode turns the camera into a point-and-shoot camera. All settings are determined by your camera—all you have to do is point the camera at the subject and press the shutter button. In situations with plenty of light or slow-moving subjects, auto mode can produce good images most of the time, but you have no control over the settings.

PORTRAIT MODE

Portrait mode is the best preset mode to use when you want your subject in focus and the background blurred. The farther the background is from your subject, the more blurry the background will be.

LANDSCAPE MODE

Landscape mode is the best mode to use when you want as much of the scene in focus as possible. Use this mode for large group or team photos when you need everyone in focus from the front row to the back. You'll need lots of available light or a tripod to avoid camera shake.

SPORTS MODE

Sports mode chooses the fastest shutter speed possible to freeze action. This doesn't just mean sports. You can use this mode for any situation where your subject is moving quickly and you don't want blurry pictures. Keep in mind, the camera will choose the fastest shutter speed for the light you are in, so it may not be able to freeze action in a low light setting.

MACRO/CLOSE-UP MODE

Macro mode is a feature of some cameras that allows extreme close-up photos of subjects to capture small details. It helps to zoom the lens as much as possible and get as close to the subject as the lens will allow, and be sure not to block the light on the subject.

NIGHT PORTRAIT MODE

Use this mode for portraits of people at night or in low light settings. Night portrait mode activates the pop-up flash on your camera to light your subject and chooses a slower shutter speed to capture any **ambient light.** Remember, the on-camera flash is not powerful and may not have much effect if the subject is more than 8 feet from the camera. Make sure to hold your camera as steady as possible to prevent camera shake.

CANON

NIKON

CREATIVE EXPOSURE MODES

3.4

Creative exposure modes allow the photographer to control one or more settings while still allowing the camera to automatically choose the exposure. Each program is suited for different situations.

P

PROGRAM MODE

Program mode is the next step above full auto mode, and a good mode for new photographers who want to move to the next level of control. In Program mode, you choose the ISO and white balance, and the camera selects an aperture and shutter speed combination that will provide a good exposure for the scene. Your camera will also not activate the pop-up flash unless you choose to, making this mode useful in classrooms or other settings when you don't want to distract with your flash. This gives you a little more control than you would get with full auto mode and is a great step toward the other creative modes.

Av

A

APERTURE PRIORITY MODE

(Av or "Aperture Value" for Canon, A for Nikon)

Aperture Priority is the creative mode to use when depth of field is more important than capturing motion. Whether you want a shallow depth of field for portraits or a deep depth of field for group shots or landscapes, you choose the aperture you want and your camera will automatically find a shutter speed that makes a good exposure.

A CLOSER LOOK

DRIVE MODES

Drive modes determine how quickly the camera records images when the shutter button is pressed. Choose the best mode for the needs of the assignment:

- **Single Shot—a single press of the shutter button records one image. This mode is best for more controlled situations without lots of quick action.**
- **Continuous—as long as the shutter button is held down, the camera will rapidly record images until the camera buffer is full. Some cameras have high- and low-speed continuous modes. High-speed mode is best for capturing sports action, but can fill up a memory card quickly.**
- **Timer—pressing the shutter button starts a countdown, after which the shutter is released. Cameras often have two- and 10-second timers. The two-second timer can minimize camera shake when taking long exposure photos on a tripod and the 10-second timer is useful when the photographer wants to be in a group shot and needs time to get into position.**

Tv

S

SHUTTER PRIORITY MODE

(Tv or "Time Value" for Canon, S for Nikon)

In Shutter Priority, or Time Value mode, you control the shutter speed and the camera controls the aperture. This mode allows you to control how motion is captured, whether to freeze action with a fast shutter speed or capture motion blur with a slower one.

EXPOSURE COMPENSATION IN CREATIVE MODES

(Program, Av, and Tv)

The last bit of control you have in creative modes is called exposure compensation. While you may have some control over one or more settings, the camera still controls the exposure automatically. **Exposure compensation allows you to adjust the camera's auto exposure brighter or darker in 1/3-stop increments, up to two full stops.** For example, setting exposure compensation at +1 tells your camera that you want the image to be one stop brighter than the camera thinks it should be. If your auto exposures are too over- or under-exposed, check this setting to see if it can be adjusted to fix the problem.

3.5

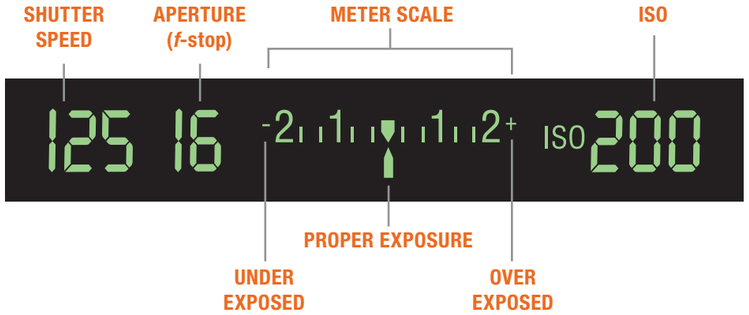
MANUAL MODE—YOU'RE IN CONTROL

Manual mode represents the highest level of creative control when making an image. The photographer must set everything: the ISO, shutter speed, aperture and white balance. It's important to note that autofocus still works in manual mode. The answer to finding good exposure lies in the camera's light meter.

THE CAMERA'S LIGHT METER

The light meter is a built-in feature of the camera that calculates exposure by measuring the light coming through the lens. In the preset, auto, and creative modes, this meter reads the light and calculates an average exposure for the scene. In manual mode, the meter is visible so that the photographer can see how the settings affect the exposure and adjust accordingly.

While in manual mode, press the shutter button half way to make the meter visible in your viewfinder, just like when trying to autofocus. If the meter disappears, simply press the shutter button half way to make it appear again.



Light meters look different for each camera brand, but they all have several things in common. All light meters have a central mark, positive and negative sides, and regular numbered sections, just like a number line or ruler. These numbered sections represent stops of light and are usually divided into thirds, representing 1/3-stop increments.

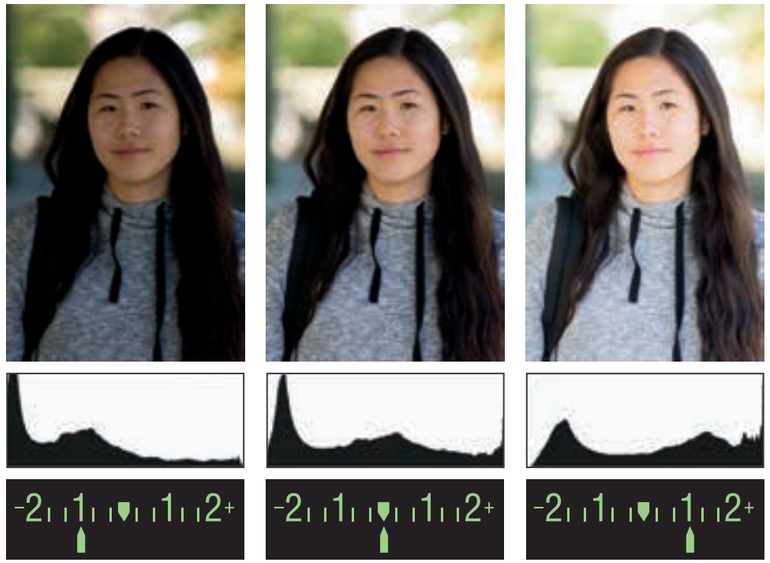
Some meters will have a small vertical line underneath to represent the current exposure and some will have a horizontal line that stretches out from the center mark. Either way, the moving bar under the meter shows the exposure that your settings will give, based on what the camera can see through the lens at that moment. A blinking bar at one end of the meter means the exposure is too over- or under-exposed to show on the meter scale. **The meter must be pointed at the subject in order to get a correct meter reading.**

For evenly lit scenes, the camera considers a meter reading in the center of the meter as a good exposure. If the bar is shifted toward the positive side, the image is over-exposed and will appear too bright. If the bar is shifted toward the negative side, the image will be under-exposed and appear too dark. Usually, if the bar is within the first couple ticks around the central mark, the exposure should be fine, but any further from the center and the exposure will be noticeably incorrect.

VISUALIZING EXPOSURE WITH THE HISTOGRAM

One of the most useful advanced tools for visualizing your exposure is the histogram. A histogram is a graph with a curve that shows the placement of all of the pixels in the image, arranged from darkest to lightest from left to right. The height of the curve represents how many image pixels fall in each tonal range.

Usually, an evenly exposed histogram will have a shape like a bell curve, higher in the middle and tapering off toward the sides with small peaks at each end. If the curve is shifted toward the negative side, the image is under-exposed (too dark) and if the curve is shifted toward the positive side, the image will be over-exposed (too bright). A tall spike along the negative edge represents a lot of pixels that have gone to pure black (no detail in the shadows), and a spike along the positive edge shows lots of pixels have gone to pure white (no detail in the highlights).



Under-exposed | Proper exposure | Over-exposed

For most exposures, it's best to aim for a histogram curve evenly spread from edge to edge and as close to the positive edge as possible without spiking. Once pixels have gone to pure white, they lose all detail and can't be brought back with editing. However, details can be retrieved by lightening dark shadows in post-processing. If your exposure is not correct, it's better to be slightly under-exposed than over-exposed.

TIP: Some cameras have a feature that will cause pure white pixels to blink black and white on the preview screen. If the LED screen is not adjusted correctly for brightness, it can be hard to judge whether the exposure is correct, but the histogram will give an accurate reading regardless of camera screen settings. Check your camera manual or do an online search for how to access your camera model's histogram.

FINDING GOOD EXPOSURE IN MANUAL MODE

Using the light meter to find good exposure is a process that becomes second nature with practice.

1. **First, set an appropriate ISO** based on the light the subject is in. (See the ISO section for examples.)
2. **Next, set the priority setting.** Choose whether shutter speed or aperture is most important for the look of the image and set it to the desired setting. Don't worry about the light meter yet.
3. Look through your viewfinder, press the shutter button half way, and adjust the remaining setting until the bar under the light meter shifts to the center.
4. Take a test shot to confirm your exposure.
5. Check the exposure and settings and adjust as needed.

EQUIVALENT EXPOSURES

There's no one "correct" way to reach proper exposure. In fact, equivalent exposures are different combinations of settings (ISO, aperture, and shutter speed) that all make the same exposure value.

Once a proper exposure is found, the photographer can make adjustments to two or more settings and keep the same exposure. As long as each adjustment that brightens the exposure is balanced by an adjustment to another setting that darkens the exposure by an equal amount, the new settings will give the same exposure.

For example, on a bright sunny day, a photographer finds that at ISO 100, an exposure of f/4 at 1/500 second gives a fast enough shutter speed to stop sports action with a shallow depth of field. If the photographer wanted to take a team picture and needed more depth of field, they could close their aperture from f/4 to f/8. The exposure would now be two stops too dark. To get an equivalent exposure to the one before, the photographer could choose a shutter speed two stops slower (1/125 second), or raise the ISO by two stops (ISO 400). Both cases would raise the exposure by two stops, resulting in the same exposure.

TAKE A BREATH

HOW TO TROUBLESHOOT THE SETTINGS

If you set the aperture first:

- **Is the shutter speed fast enough to avoid camera shake? If not, increase the ISO so that a faster shutter speed can be used, or use a tripod to steady the camera.**
- **Is the shutter speed much faster than needed? Using an overly fast shutter speed won't hurt the look of the image, but it will greatly reduce the light coming into the camera. This requires a higher ISO than necessary and hurts image quality. Choose a more appropriate shutter speed and turn the ISO to a lower setting to improve image quality.**

If you set the shutter speed first:

- **Is the image under-exposed, even with the widest aperture? Set the ISO higher until you have a good exposure, or try using a slower shutter speed.**
- **Do you have a high ISO and high f-number? Adjust your ISO to a lower number and adjust your f-stop to a lower number by the same number of stops.**

3.6 METERING MODES

The camera light meter has several modes that adjust the area in the frame that the meter is measuring. Metering modes can be adjusted through the camera menu, through a switch on some cameras, and through a button and command dial on others. Check the camera manual for your camera model.

Evaluative/matrix metering

EVALUATIVE/MATRIX MODE

Evaluative/Matrix mode measures light throughout the whole frame and gives an average exposure. This mode is useful for most scenes that have fairly even lighting, but can expose incorrectly if there are especially bright, dark or reflective areas in the scene. This is usually the default light meter setting for most cameras.

Center-weighted/partial metering

CENTER-WEIGHTED AVERAGE OR PARTIAL METERING MODE

Center-weighted Average or Partial Metering measures light mostly from a circle around the center of the scene. This mode assumes that your subject is likely in the middle of the frame, and places more importance on that part of the scene for metering.

Spot metering

SPOT METERING MODE

Spot metering mode measures only a tiny circle of light. With spot metering, you place the center autofocus point over the subject and adjust your settings to expose for that spot only. Use this mode when the subject is in light that is much brighter or darker than the rest of the surroundings. Examples of this include a speaker in a spotlight on a dark stage, or an indoor portrait in front of a bright sunny window.

ZOOM IN ON THE SUBJECT'S SKIN TONE

If the camera isn't exposing correctly for the subject because of a dark or bright background, zoom in on the subject's face so that the skin tone fills the frame and set the exposure manually. Once the exposure is set for the skin tone, zoom out and recompose the image. The light meter will now show an incorrect exposure because it's reading the entire scene, but the settings are correct for the subject's skin tone.

Skin tone before

Skin tone during

Skin tone after

METER YOUR OWN SKIN TONE

If the subject is too far to walk up to, and even if the photographer does not have the same skin tone, they can hold their hand up and meter off of their own skin tone. The hand does not have to be in focus because the light is all that matters. The resulting exposure should be close to the proper exposure for the subject. If the subject's skin tone is darker than the photographer's, adjust the exposure brighter. If the subject's skin tone is lighter than the photographer's, adjust the exposure darker. The adjustment is usually no more than a stop of exposure either way.

Before hand metering

Hand metering

After hand metering

USE SPOT METERING

When the subject is too far away to fill the frame and the subject and photographer are in different lighting, use the spot metering mode. Set the camera's metering mode to spot, place the center focus point over the subject, adjust the settings for proper exposure and then recompose the image. Once the settings are adjusted for the subject, ignore the meter until the lighting changes and then use the same process to adjust to the lighting change. **Remember to always meter for the subject's skin tone.**

Evaluative—subject over-exposed

Spot meter for skin tone

Recompose and ignore meter

BRACKET EXPOSURES

When taking pictures of a scene that is difficult to meter, some photographers use a technique called bracketing. **Bracketing involves making three exposures:** one at the recommended exposure, one intentionally under-exposed and one intentionally over-exposed. Some cameras have a function called auto exposure bracketing, or AEB, which takes three bracketed exposures in rapid succession with one press of the shutter button. Chances are, one of the exposures should be correctly exposed.


One stop under


Proper exposure


One stop over

FOCUS

Good light means nothing if an image is out of focus. To make sure the subject is sharp, pay attention to the camera's focus mode. Photographers can choose between auto and manual focus in any mode using a selector switch on the side of the lens.

AUTOFOCUS

Autofocus is great when it works and frustrating when it does not. The camera will choose an available autofocus point, often over the object closest to the camera. If there are foreground elements or multiple potential subjects, the camera can easily get confused and focus on the wrong part of the scene. However, there are several ways to make sure autofocus chooses the right subject.


Riley Ruegemer: Wayzata High School, MN

SELECT A SINGLE AUTOFOCUS POINT

Pick a single autofocus point to tell the camera where to focus. Compose the image and choose an autofocus point over the subject. The method for each camera is different, so check the camera manual or research online to find the specific process. If the camera is not focusing correctly, make sure that someone else hasn't accidentally moved the autofocus point.

CHOOSE THE AUTOFOCUS MODE

Photographers can further adjust their autofocus mode beyond just the focus area.

- **Single/AF-S (Single)**—This focus mode will set the focus when you press the shutter button half way and hold it at that point. This mode is best for times when the subject and photographer are both still and works well for most shooting assignments.
- **Servo/AF-C (Continuous)**—This mode focuses continuously on the subject as long as the shutter button is held half way. Servo or AF-C mode works well when the subject is constantly moving closer or farther from the camera. As long as the shutter button is held down, the camera will attempt to refocus on the moving subject. This mode works well for sports, but can also be used any time a subject is moving relative to the camera.
- **AI Focus/AF-A (Auto)**—This mode switches between single and continuous focus modes based on the movement of the subject. This mode is not often recommended, as it is just another auto mode and does not work as well as choosing either single or continuous focus.

FOCUS AND RECOMPOSE

Sometimes the best composition of an image does not place the subject behind a preset autofocus point. Manual focus solves this problem, but autofocus will still work with a technique called focus and recompose. To use this technique, select a single autofocus point and place the subject behind it. Make sure the autofocus mode is single/AF-S, as this technique does not work with continuous autofocus. Press and hold the shutter button half way to lock focus on the subject. Reframe the image to your liking and press the shutter button the rest of the way to take the picture. The subject should stay in focus, even though it is no longer behind an autofocus point.

MANUAL FOCUS

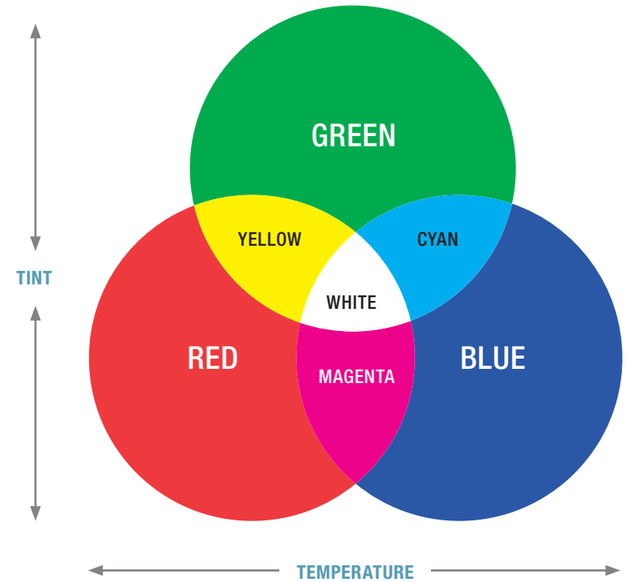
For full focus control, choose manual focus on the lens. This overrides the camera controls, meaning the lens will not focus when the shutter button is pressed. Instead, look through the viewfinder and turn the focus ring on the lens until the subject is in focus.

The camera can still help to find focus in manual focus mode. Place the autofocus point over the subject and hold the shutter button half way, just like when trying to autofocus. The camera will indicate when the focus point is properly focused. For some Canon cameras, the focus point will light up when the lens is focused correctly. For some Nikon cameras, look in the lower left corner of the viewfinder. When out of focus, a small triangle points in the direction that the focus ring should be turned. When the focus is correct, a circle will appear.

For maximum sharpness when focusing on close-up objects, try using the rear LCD screen in live view for a better view of the details.

WHITE BALANCE

Color in light is additive, meaning that pure white light contains all of the colors in equal amounts. Too much of one color creates an imbalance, resulting in light with a noticeable color cast. White balance refers to correcting a light source's color imbalance by adding the opposite color of light in camera or while editing. The camera has white balance presets designed for different common light sources, and each one adds a certain amount of color to balance the light produced by that particular light source.



Photographers use the term color temperature to measure the color of a light source along a spectrum from yellow-orange to white to blue. Color temperature is measured in degrees Kelvin (K) and most light sources range from about 2,800 K for the warm orange glow of candle flame to about 7,000 K for the bluish-white light from a camera flash.

AUTO WHITE BALANCE

Auto white balance analyzes the image and lets the camera attempt to correct the color temperature to true white. While this can produce good results most of the time, auto white balance can be confused in some situations. Any photographer who has gone out on assignment with auto white balance and returned with yellow gym pictures knows this too well. It's often a good idea to figure out which of the following white balance settings will work best for the current light and stick with it as long as the light stays the same.

INCANDESCENT/TUNGSTEN WHITE BALANCE (3,200 K)

Incandescent or Tungsten light bulbs produce a yellow-orange light, common in older light bulbs and in many gyms. Incandescent white balance adds blue to the image in camera to balance out the yellow light.

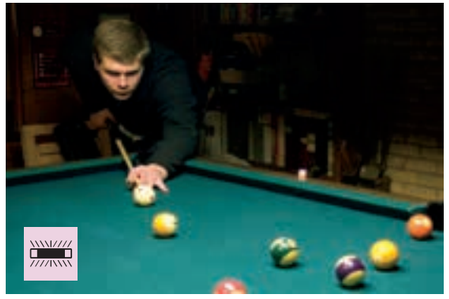
Tungsten lighting with AWB

Tungsten lighting with Tungsten white balance

FLUORESCENT WHITE BALANCE (4,000 K)

Fluorescent lights are tricky. The long tubular fluorescent bulbs common in offices, schools and some stadiums often put out greenish light, so the fluorescent white balance setting adds magenta to balance it back to white. The green/magenta spectrum is referred to as tint, and most light sources do not require tint adjustment. However, most compact fluorescent bulbs in use today produce light balanced to match incandescent light or daylight, so another white balance may work better.

Fluorescent lighting with AWB



Fluorescent lighting with Fluorescent white balance

DAYLIGHT WHITE BALANCE (5,200 K)

Daylight white balance does not add color correction and is meant for use on bright sunny days when the light is already pure white.

CLOUDY WHITE BALANCE (6,000 K)

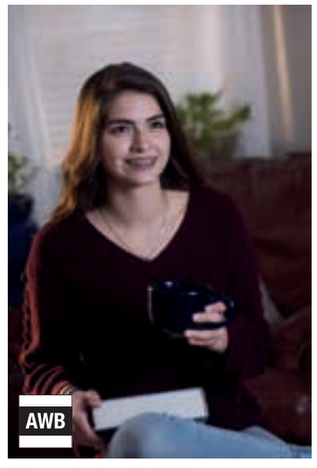
Light on a cloudy or overcast day has more of a cool blue color than daylight, and cloudy white balance adds a little bit of yellow and orange to warm up the look of the image.

Cloudy day with AWB

Cloudy day with Cloudy white balance

FLASH WHITE BALANCE (6,500 K)

Most flash units produce bluish-white light, and flash white balance adds reddish-yellow to balance the blue light.



Using a flash with AWB

Using a flash with Flash white balance

SHADE WHITE BALANCE (7,000 K)

Shaded light is even cooler than light on a cloudy day, and the camera adds a stronger golden red tone to balance it.

Shaded light with AWB

Shaded light with Shaded white balance

CUSTOM WHITE BALANCE

When a preset won't work, the custom white balance can calculate a white balance setting specifically for the available light. This setting works with an 18 percent gray card, but a regular white sheet of printer paper will produce decent results, especially indoors.

1. Hold up an 18 percent gray card or white sheet of paper in the same light as the subject, fill the frame with the image of the reference card, and take a picture with the daylight or auto white balance setting.
2. Locate and select the menu setting for Custom White Balance. The camera will ask you to select a reference image from your camera roll. Choose the image of the reference card, and the camera will use the selected image to find the white balance for the current lighting situation.
3. Finally, select the Custom White Balance setting from the white balance menu. As long as the lighting stays the same, the white balance should be accurate for that environment.

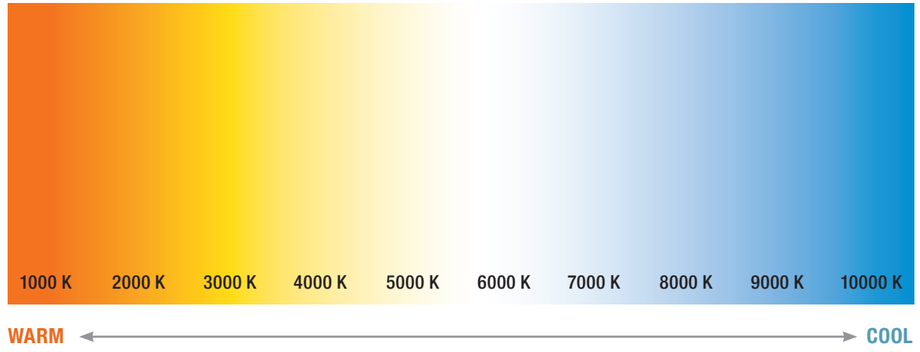
This technique is helpful in situations where the light will not change at all, but can be difficult to adjust quickly when conditions change.

KELVIN WHITE BALANCE

This white balance setting, found in some newer camera models, lets the photographer dial in the white balance by using the rear screen of the camera. The process is similar for each camera brand and model, but not identical.

1. Turn on Live View to see a preview of the image, and set a proper exposure for the subject. The Live View symbol usually looks like the back of a camera with a small black screen, or the letters LV in a box.
2. While in Live View, select the white balance, either with the Quick Menu button (Q) or with the white balance button (WB), and select the Kelvin (K) setting.
3. Usually, the menu will show the color temperature in Kelvin with a symbol for the command dial. Use the command dial to adjust the color temperature until the colors of the preview image look correct. It can help to have a white sheet of paper as a reference, but skin tones will usually work just fine.
4. Once the white balance looks correct, select that color temperature and turn off Live View. Your white balance is now custom set to an exact color temperature. If the lighting changes, you may have to repeat the process.

KELVIN COLOR TEMPERATURE SCALE



3.9

SHAPING THE LIGHT

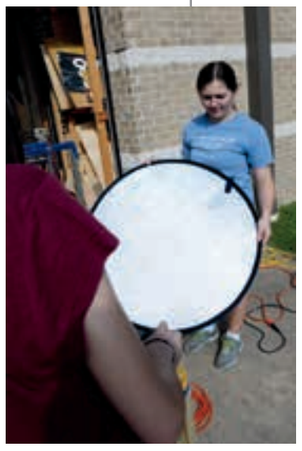
Sometimes photographers need to shape the available light to meet their needs when lighting conditions are not ideal. From reflectors and diffusers to flashes, there are many tools available to add or shape light as needed.

REFLECTORS

Reflectors are simply flat reflective surfaces designed to bounce light onto a subject where it does not naturally fall. Reflectors require a fairly strong and hard light source, and will not work well on cloudy or overcast days when the light is soft and diffused. In order to use correctly, **have an assistant hold the reflector with the flat surface facing the light** and look for the reflected spot of light. Then adjust the position and angle of the reflector to move the spot of light onto the subject. Keep in mind, on a bright sunny day, the reflected light can be extremely bright if the subject looks directly at it. Move the reflector farther away from the subject to reduce the intensity of the light and move closer to increase it.

Without reflector

With reflector



Reflector positioning

Proper use of reflector

Improper use of reflector

Pay attention to the angle of the reflected light. Reflecting light from a side angle can improve the ugly shadows created by hard top light. However, **bouncing light from underneath the subject's face can potentially create more unnatural shadows,** just like when a person holds a flashlight under their chin to tell scary stories. Keep the reflected light from the side or from a higher angle to create the most flattering light.

DIFFUSERS

Diffusers look similar to reflectors, but their purpose is slightly different. Rather than bouncing light from their surface, diffusers are translucent, meaning they let light pass through them. Diffusers turn hard light into soft light by spreading the light through a larger area, creating softer shadows on the subject.

Diffusers are held between the subject and the light source, usually the sun, and act as a handheld soft light source. In order to work correctly, diffusers should be held fairly close to block any hard light on to the subject. For portraits taken in bright midday sun, a diffuser can turn hard top light into beautiful soft light. Diffusers can also turn spotty light passing through a tree into soft, even light.

Diffuser positioning

Top light without diffuser

Top light with diffuser

Spotty shade without diffuser

Spotty shade with diffuser

3.10

ADDING LIGHT WITH FLASHES

Many times, photographers need to add a little extra light to make a good exposure when the available light is not enough. Flash techniques range from the simple to the complex, but all can help the photographer control the exposure.

IMPROVING ON-CAMERA FLASH

Most cameras come with a pop-up flash that activates automatically in low light conditions. If using program, aperture priority, shutter priority or manual mode, the flash can be activated by pushing the flash button, usually marked with a lightning bolt.

Unfortunately, the on-camera flash has some serious limitations. The flash shares batteries with your camera, so it has a limited output and cannot light subjects much beyond 10 ft. The flash's hard front light produces unflattering shadows behind the subject and often makes people look flat, washed out and over-exposed.

There are some solutions to these shortcomings. **Flash exposure compensation** is available when using the auto, preset or creative modes. Just like exposure compensation adjusts the camera's automatic exposure, flash exposure compensation adjusts the automatic flash power. To adjust this setting, find the button that looks like a lightning bolt with a plus and minus sign, or locate the setting within the menu. Hold down the button and use the indicated controls to dial the automatic flash power up or down.

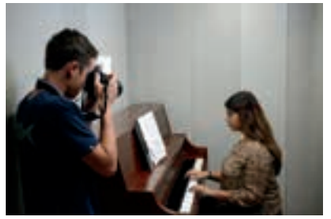
Milk carton plastic below

Bubblewrap

Milk carton plastic above

Plastic cup

Direct flash



Pop-up flash with homemade diffuser

After using homemade diffuser

A CLOSER LOOK

HOMEMADE DIFFUSERS FOR THE POP-UP FLASH

To deal with the harsh shadows caused by the pop-up flash, one can easily make a diffuser to soften and spread the light. Diffusers can be made from any translucent plastic material, such as milk cartons, plastic cups or bubble wrap, and must be large enough to catch all of the light from the flash.

As the light from the flash shines through the diffuser, it is spread out and bounced off of the ceiling and walls, creating a softer light source from all directions. This creates softer shadows and more flattering light on the subject. Professionally made options do exist, but a little creativity with everyday objects can give similar results.

When taking photos in a dark setting, the on-camera flash will often over-expose the subject, but leave the background dark. If the automatic flash settings over-expose the subject, you can adjust the flash power down to prevent the subject from being washed out. You can also choose a slower shutter speed and increase the ISO so that the exposure is brighter and the flash does not have to work as hard.

FILL FLASH

Keep in mind, the on-camera flash is not just for night photography. Even in bright light, the subject may have unflattering face shadows from a hat or from hard overhead light. Photographers can use the pop-up flash as a fill flash to add light and "fill in" the shadows, creating a more even exposure. In this case, flash exposure compensation may need to be turned higher so that the flash can overpower the dark shadows caused by a very bright light source.

In situations like stage performances where the subject is far away in a dark environment, it is best not to use flash at all. The flash will only over-expose nearby objects and distract the performers and audience. It is better to use a wide aperture, slower shutter speed and higher ISO instead.

EXTERNAL FLASHES

The next level of control with flash photography is using an external flash. Many cameras have a hot shoe, a powered metal connector for attaching an external flash unit. Flash units slide into the hot shoe and provide more flash power and the ability to adjust the direction of the flash.

TTL VS. MANUAL FLASH

Most flash units have an auto mode called through the lens, or TTL. When you press the shutter button, the flash sends out a small pre-flash to meter the scene and choose the best flash setting. As with all auto settings, the camera may not always choose the best settings. However, just like with your pop-up flash, you can use flash exposure compensation to adjust the output of your flash in TTL mode.

Some flashes may only offer manual mode as an option. In manual mode, the flash power must be set and changed by hand, with no assistance from the camera. This is not a problem when a constant flash output is needed, but can be difficult to use when the scene, lighting and subject distance change quickly.

DIRECT FLASH

The simplest way to use an external flash is to point the flash directly at the subject, just like the pop-up flash. This direct flash method produces the strongest light over the farthest distance. However, direct flash is a hard front light source that produces flat, uninteresting light and a hard shadow behind the subject.

BOUNCE FLASH

Bounce flash is a technique that solves the problems caused by direct flash. Instead of pointing the flash directly at the subject, point the flash unit straight up toward the ceiling. The light from the flash "bounces" off of the ceiling, spreading out to create a larger and softer light source. This creates more flattering light and eliminates the hard shadows that direct flash produces. Keep in mind, this technique does not work outdoors or in rooms with high or dark-colored ceilings. Bouncing light off of a colored ceiling will create strange color casts on the subject, so make sure to bounce off of white or light-colored ceilings only.

On its own, the soft light created by bounce flash is still top light and can produce unflattering eye or nose shadows if the subject is too close to the camera. This is why most flashes come with a small white bounce card that pulls out of the flash unit. When extended, the bounce card reflects some of the upward light toward the subject, filling in face shadows. Larger bounce cards reflect more light, and photographers can simply attach a white notecard with a rubber band or velcro to increase the size of the bounce card. Photographers can also bounce flash off light-colored walls for diffused side lighting.

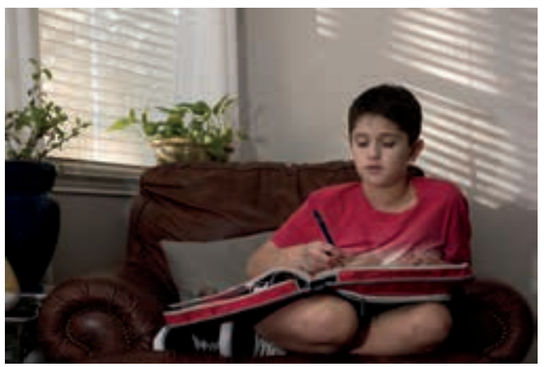
Direct flash

Direct flash results

On-camera bounce flash

On-camera bounce flash results

Off-camera bounce flash



Off-camera bounce flash results

PRO TIP

OFF-CAMERA FLASH

Even with an external flash and bounce card, on-camera flash is primarily front light, giving the subject a flat appearance. Taking the flash off-camera gives more control over the direction of the bounce and fill light. The simplest and most affordable method requires an off-camera TTL sync cord.

This cord connects between the flash and the hot shoe and allows the flash to be held away from the camera. This produces more directional light that adds depth and texture to the image. The cord also allows the flash to communicate with the camera in TTL mode, meaning the flash power is controlled automatically by the camera.

FLASH DIFFUSERS

Flash diffusers are an alternative to bounce cards. Diffusers are made of translucent material that attach around the lens of the flash. The light from the flash fills the diffuser like a bare light bulb and spreads in all directions, bouncing off the walls, ceiling, and directly onto the subject. This spreading, or diffusion, of the light creates softer, more flattering lighting. Flash diffusers are not effective in wide open spaces or outdoors because they require walls or ceilings to bounce the light.

FLASHES AND SHUTTER SPEED

FLASH SYNC SPEED

While a flash is fast, some camera shutter speeds are faster. Each camera has a maximum sync speed, which is the fastest shutter speed that will expose the entire sensor to the flash. If the shutter speed is faster than the maximum sync speed, **the image will have a black bar across the frame** where the camera shutter started closing before the flash could light the entire frame. The maximum sync speed is 1/200 second for most Canon cameras and 1/250 second for most Nikon cameras, but check the camera manual or do some research for specific camera brands and models. The black bar will take up even more of the image at faster shutter speeds. To avoid the dreaded black bar in photos, use a shutter speed slower than or equal to the maximum sync speed for flash photography.

DRAGGING THE SHUTTER

Flash exposures are actually two exposures stacked on top of each other: the ambient exposure and the added flash exposure. The ambient exposure captures available light only, and adjusting the shutter speed will darken or brighten the ambient exposure without significantly affecting the flash exposure. **"Dragging the shutter"** means choosing a slow shutter speed to increase the ambient light in the exposure. Keep in mind, the flash exposure will stop the action of the subject, but the slow shutter speed will still capture motion in the ambient exposure.

Photographer position

Shutter speed: 1/250, Aperture: 5.6, ISO: 100

Shutter speed: 1/60, Aperture: 5.6, ISO: 100

Shutter speed: 1/20, Aperture: 5.6, ISO: 100

CONTROLLING FLASH OUTPUT WITH APERTURE

While shutter speed controls the ambient exposure, aperture controls the flash exposure. The aperture is the size of the lens opening, which determines how much light from the flash enters the camera. Brighten the flash exposure by choosing a wider aperture or darken it by choosing a narrower aperture. Keep in mind, the aperture still effects the ambient exposure as well. To increase flash output without changing the aperture, move the flash closer to the subject or turn up the flash power.

ISO AND FLASH

Turning up the ISO will increase both the flash and ambient exposure equally. Choosing a higher ISO reduces the work that the flash has to do and can reduce the recycle time between flash bursts for quicker flash shooting.

REVIEW

KEY CONCEPTS

1. **Good photographers pay attention to the light.** What is the quality and direction of the light? How will the light affect your subject and your composition?
2. **Aperture, shutter speed and ISO all work together to determine exposure.** Aperture controls depth of field, shutter speed controls how motion is captured and ISO determines image quality.
3. Preset exposure modes can help beginners get better photos for portraits, sports, group shots and night portraits.
4. Creative exposure modes give the photographer some control over the automatic exposure and are a great next step for photographers to control their exposure.
5. Manual exposure control uses the light meter to give photographers the highest level of creative control when making photographs.
6. Understanding how the light meter works can improve your photos in tricky lighting situations such as strong backlight, stage performances and long distance portraits.
7. **Good exposure is nothing without an in-focus subject.** One-shot autofocus is great for keeping focus on the subject when recomposing an image. Continuous autofocus is great when photographing quickly moving subjects. Use manual focus and live view mode for accurate focus with close-up photography.
8. For good white balance, pay attention to the dominant light source and set your white balance accordingly. For more control, use custom or Kelvin mode to get a more accurate white balance in situations when presets don't work.
9. Simple light-shaping tools like reflectors and diffusers can improve your natural light portraits when the light is not ideal.
10. Flashes are a great tool to add or control light in any environment. With the right modifiers and a good understanding, you can improve the look of your on-camera flash. Off-camera flashes provide more power, control and flexibility.

KEY TERMS

Additive Color
Ambient Light
Aperture
Auto Exposure Bracketing
Autofocus
Backlight
Bounce Flash
Bracketing
Camera Shake
Center-weighted Average
Color Temperature
Combination Light
Depth of Field
Diffusers
Dragging the Shutter
Equivalent Exposure
Evaluative/Matrix Mode
Exposure
Exposure Value
F-stop
Fill Flash
Flash Exposure
Flash Sync Speed
Fluorescent
Focus
Front Light
Full Auto Mode
Golden Hour
Hard Light
Histogram
Incandescent
ISO
Kelvin Scale
Landscape Mode
Light Meter
Macro Mode
Motion Blur
Night Portrait Mode
Over-exposed
Panning
Partial Metering
Portrait Mode
Program Mode
Reflectors
Rim Light
Side Light
Silhouette
Shutter Speed
Soft Light
Sports Mode
Spot Metering
Top Light
TTL Mode
Tungsten
Under-exposed
White Balance
Zoom Blur

Hannah Mohr: Stony Point High School, TX

4

EVENT PHOTOGRAPHY

4.1

IT'S WHAT YOU KNOW:
SIMPLIFYING THE CHALLENGES OF CAPTURING SCHOOL EVENTS

Covering events is a major part of publication coverage, but it should not be the only part. Photographers should plan for images that tell the full story of life in the school throughout the day and year.

Photographers should capture people and their lives frequently throughout the school day, every single day. This practice allows students to grow accustomed to being photographed and gives staff a more interesting and diverse collection of images from which to choose.

TAKE YOUR VIEWERS WHERE THEY CANNOT GO!

It is part of a publication photographer's responsibility to take viewers to places they cannot go—to show them unique perspectives and unexpected details. A great photographer focuses on telling full and nuanced stories with their photos, which cannot be done from the sidelines, but requires behind-the-scenes access and exploration beyond the obvious. The camera gives photographers a reason to explore places most people do not go. Being a photographer is a privilege, so it's a good idea to talk to coaches well in advance of a game or to gain access to the locker room, press box, bus, or any other area that isn't generally considered available to the general public.

John Morgan: International School of the Americas, TX

A CLOSER LOOK

SETTINGS

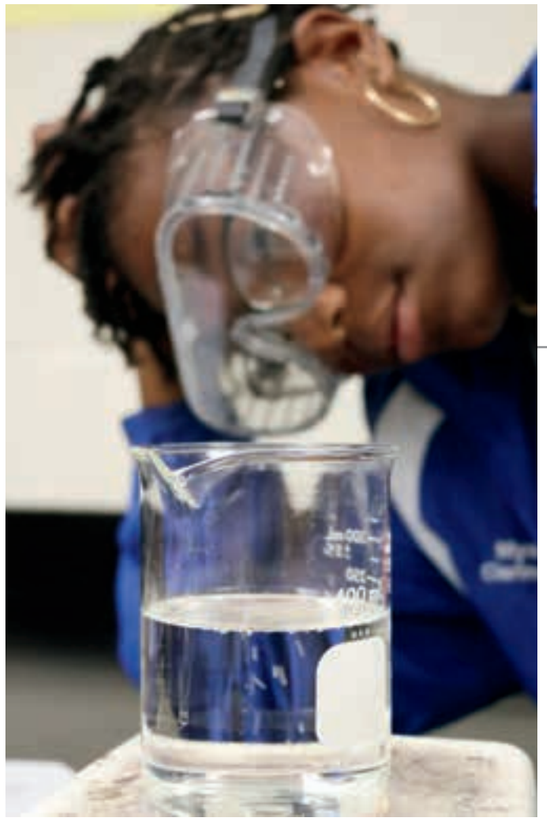
The manual mode on the dial gives the photographer the most flexibility and control. This mode allows users to set ISO, shutter speeds and f-stops.

When capturing in Av mode, also known as A mode or aperture priority, the photographer sets the f-stop and ISO. In response, the camera selects the shutter speed based upon that information to expose properly. For sports, it's often wise to use the Av mode and choose the widest lens opening possible (the lowest f-number).* This will maximize the ability to access higher shutter speeds to stop action.

***See chapter 2 for more information on modes.**

Photographers should take cameras with them to classes to be ready for interesting academic photo opportunities as they spontaneously occur. Students chatting before and after class, interactions with teachers, impromptu presentations and unexpected experiments will only be captured if you are ready with your camera.

A variety of lenses will work for classroom shots. If you have a DSLR, you can choose almost any lens, depending upon your goal. To get a wide, scene-setting shot of the class, use a wide-angle lens. This could be a 12–24 mm, for example. Because of the fluorescent lighting in most classes, check white balance. When standing at a moderate distance to take a closely-cropped photo of a person's face, **photographers should use a medium zoom or longer lens to isolate the individual.**



Emily Todd: Loris High School, SC

THE BEAT SYSTEM

In addition to each individual being prepared for unexpected photogenic situations, a plan must be established for photographers to capture a maximum of school happenings. This is where a beat system comes in. **With a beat system, staff members are assigned to cover different academic areas of the school.** Each week, or at some regular interval, each staff member talks with department chairs and teachers to learn about activities that would make interesting photos. For instance, the food class might be preparing a meal, the environmental science class may be going outside to gather water samples from a nearby creek, or the English class might be role playing while studying "Romeo and Juliet." Occasions like these make for interesting academic photos that go beyond students sitting at desks or staring at computers. Once the publications staff is aware of upcoming events, they let photographers know exactly what photos they would like for their spread.

The beat system requires cooperation between designers and photographers. When staff members make specific topic assignments for photographers, they should provide the photographers with possible subjects and locations. This plan should be as specific as possible. For instance, the designer should let the photographer know how many vertical photos, how many horizontal photos, how many close-ups and how many **environmental portraits** are needed. The photographer should know that he should capture not only students in waders collecting water in the nature preserve, but also conferring with the each other while there, walking to and from the nature preserve, and testing the water back in the classroom. By helping to do the legwork, staffs can help photographers get necessary shots in a timely manner.

Shumesa Mohsin: Tokay High School, CA

Katie Grimes: Fountain Hills High School, AZ

SPORTS

ATTEND PRACTICES

Try to attend some practices of the sport you are to photograph. There are numerous reasons why this is a good idea:

1. Photographers get to practice their skills while the team practices. You will become familiar with the sport and will know where to stand and what to expect during actual games by attending practices.
2. During practices, photographers are likely to get better access to areas that are off limits during games.
3. The coaches and players will recognize you as a staff member and are less likely to question your presence during games.
4. The 4 R's: Rapport. Relationships. Responsibility. Rewards. When you have made the effort to develop rapport and relationships, and you've proven you are responsible, you are more likely to be rewarded with permission when you ask for a chance to enter the locker room or ride the bus to a game.

GO EARLY, STAY LATE

Get to games and meets well before they start so you can capture pre-game preparations. Photograph throughout the entire event, including time after the final whistle blows. Capturing reactions to the event's outcome will add depth and variety to the coverage, especially when you take time to capture both the team and the fans.

Hannah Kunz: Westlake High School, TX

Alyssa Kift: Texas High School, TX

Dara O'Connor: Shawnee Mission East High School, KS

IN A MINUTE

Capturing the scoreboard occasionally, particularly after big plays or scores, will help provide valuable information for captions later.

If your school provides multiple sideline passes to games, photographers should cover different zones based upon equipment and lens availability. Avoid standing beside other photographers; add diversity to your collective shots. Capture moments at the opponents' end, at your end, from up high and down low. Capture the athletes and the fans. Divide and conquer!

Always remember to act responsibly. The school provides the press passes to you with the condition that you use them respectfully and according to the rules. Avoid distracting players who might be playing, on the sidelines or even on the bench right next to you.

A CLOSER LOOK

PRESS PASSES

Press passes should be created for each member of your staff so that people know when they are on duty for the publication. Created at the beginning of the school year, the press pass should be worn for every assignment. They can be personalized with information about access for specific events.

NOT ALL SPORTS ARE OFFICIAL SCHOOL SPORTS

Students who participate in martial arts, wake boarding, rowing, gymnastics and rodeos spend hours practicing their skills, just like the athletes participating in school sports. Often their stories and experiences are unknown to most of your readers. Use your skills to show your viewers something new and different.

Mary Beth Burns: Westlake High School, TX

Luke Munchrath: Trinity High School, TX

4.2

STAND AND DELIVER: KNOWING WHERE TO BE TO GET THE BEST SHOT

Rules govern where photographers are allowed to stand for some sports. Photographers shouldn't stand in some places because it could be dangerous to them.

How many times have you seen photographers covering a football game get trampled by a running back who, by the way, was wearing a helmet and pads for protection?

Knowing a bit about where to stand is crucial to securing a positive outcome all around. This curriculum is accompanied by **Photo Tip Cards** that outline tips for not only being in the right place at the right time, but also tips for camera settings and lens choices. Put them in your camera bag and refer to them often.

"PHOTOGRAPHY IS KNOWING WHERE TO STAND."

— ANSEL ADAMS

EQUIPMENT

Very often, sports photographers combat low light situations along with distance challenges. As a result, field sports, including football, softball, baseball, soccer, rugby and lacrosse, will be shot more successfully with a long, or telephoto lens. Ideal lenses for these sports are 70–200 mm f/2.8 constant aperture lenses, or something comparable, for night games. The f-number should be wide enough (low numbers like 2, 2.8) to let light in. Generally, a lens with an f-stop like 5.6 for its largest opening will not work well for these low light situations.

For sidelines shots and fan shots, a medium or wide lens might be a great choice. Examples would be a 28–105 or an 18–70 mm. These allow for a wider point of view. Even an ultra-wide lens, like a 12 mm, could lend itself to some fun shots. Beginning photographers tend to be hesitant to get close, but doing so will produce striking images.

When capturing daytime sports outside, the sun works as an ally. Photographers have more options with lens selection since lighting does not limit them like it does with nighttime action. In other words, it won't matter if the lowest f-stop is 5.6 because there is plenty of light to use a fast shutter. For tennis, golf, cross country, track and other sports occurring during the day, telephoto lenses are also appropriate. A 70–150 mm or 70–200 mm is optimal since photographers can't just walk out on the court, nor can they stand right in front of a golfer swinging her club!

When capturing indoor sports, such as volleyball, wrestling and basketball, light, or lack thereof, becomes an important consideration. The fact that the subjects move quickly make it necessary to use a fast shutter speed to prevent blur. Using a prime lens such as an 80 mm f/2 works as one solution. Another would be a 70–200 mm f/2.8 constant aperture lens. The lenses have to be able to admit a lot of light, so a wide aperture is optimal. The same applies for pep rallies, dance competitions and other events in the gym.

Gym lighting is tricky. Be sure to check white balance in the gym so your photos don't end up with a yellow tint.

Justin Kaczmarek: Bay Port High School, WI

4.3

IT'S JUST A STAGE:
PHOTOGRAPHING PLAYS, MUSICALS, DANCE RECITALS, CONCERTS AND CLUBS

Lighting in auditoriums and recital halls often pose the biggest challenges for publications photographers. In some places, good light is not available or there are **"hot spots"** of light.

The biggest rule of capturing performances: NO FLASH!

Flash should never be used. It's distracting for both the audience and those on the stage, and you're likely to get hauled out by security or yelled at by a fan within moments of the first pop. Don't be that person.

Instead, **learn to use the lighting provided.** Think of it as a gift. If your tech/stage managers know a thing or two about what they're doing, the lighting for your photos could be breathtaking. Pay attention to the intensity of the light and the direction it is coming from. Use manual modes if you see that it is the best way to compensate for the often-conflicting stage lighting the camera sensor reads.

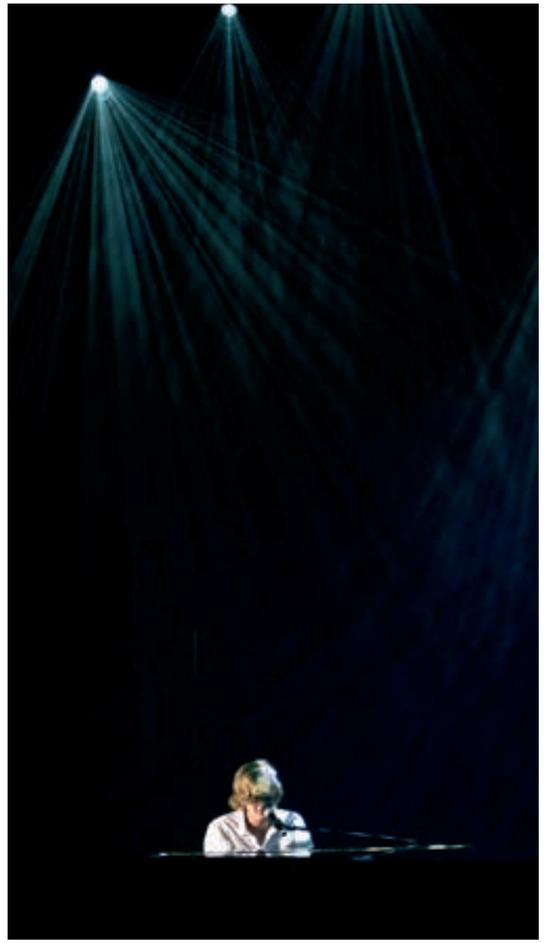
Much like with sports, you will want to use a lens that has a low, constant f-number like 2.8. This is especially true if there is motion on the stage which you want to capture without blur. You may have to raise the ISO to a relatively high number, such as 3200.

Go to rehearsals. You can practice with your camera body and lenses to see what works for the situation. You can move around more without bothering anyone in the audience. A huge benefit of going to rehearsals is getting a preview of the visually stunning, climactic moments that will happen when you attend the show. You'll be in the right spot with the right settings, ready to go. If you want to tell the complete story of the school's musical, you need to capture photos beyond the obvious—beyond just the actual stage performance.

Remember the 4 R's? Rapport, relationships, responsibility and rewards apply in this case as well.

If you want to tell the real story, you will need to capture rehearsals, dressing rooms, rituals of the performers and celebrations after closing night. You will need to develop rapport and relationships with the director, stage manager and performers to gain full access to their world. **You need to show them you are respectful and responsible.** In turn, you'll be rewarded with opportunities to capture complete narratives that will result in compelling photo stories.

To help build relationships, consider printing several photos of the performance or game and presenting them to the director or coach after the event. This type of diplomacy goes a long way in keeping the door open for you to photograph in the future.



Claire Schaffer: Westlake High School, TX

Addyson Zugaro: Highland High School, OH

CALENDAR

Use a system within your photo staff and overall publications staff that will help keep everyone organized. It's important not to miss club meetings and events, student council projects, sports events, etc. One suggestion is to find a place in the classroom that is visible to all and list dates and times of events along with the photographer who is responsible for capturing that event.

Having a visual reminder and reviewing the calendar daily prevents important assignments from being missed.

SCHOOL CLUBS AND ORGANIZATIONS

Maintain a calendar of meetings and events. Try to attend both—the events themselves generally lend to more interesting photos. For example, in most cases the student council Cupcake War would produce more compelling photos than a student council officers' meeting.

ASK FOR HELP

If a club or organization participates in an out-of-town event, or in an event for which you have no available photographer, arrange for a club member or the sponsor to take photos. A cell phone shot has enough resolution for a small photo box. **Be sure to tell them you are NOT looking for selfies and photos of students posing for the camera.** To make expectations clear, your staff might want to write up a short instruction and suggestion sheet for those people who agree to assist.

Angela Valle: Texas High School, TX

GROUP SHOTS

Various groups will be covered in your publications, and your photographers will likely be in charge of securing photos of them. When the National Merit Semi-Finalists are named, or when the cheer squad wins a contest, or when the robotics team wants to show off its new creation, photographers should know what to do to get a proper photo.

For several rows of students, it's important that the depth of field isn't so shallow that one row is sharp but the others are blurry. Understand that low f-stops will produce shallower depth of field, as will using a very long telephoto lens. Use a wider angle lens, such as a 12–24 or 18–55 mm. The lens will give a wider perspective without distortion. Avoid using a fisheye lens, as the result would be distorted people on the ends of the rows. Additionally, use an f-stop that produces enough depth of field to keep all rows in crisp focus. Beginning photographers assigned to this task should use the landscape mode on the camera dial to produce deeper, and therefore acceptable, depth of field.

Lighting can pose problems for group shots. Direct sun during the day results in squinting and harsh shadows. Standing under trees, while it might get the sun out of subjects' faces, results in dark, shadowy blotches on the subjects.

On a cloudy day, or very early or very late in the day, light is filtered and therefore less harsh. Photographers should plan with that in mind. If an outside location isn't an option, gym bleachers can work. It's a good idea to know how to use a flash unit in case it's necessary to fill in shadows. **A fun option is to stand above the group members, on a ladder or tabletop, and capture from above, using a bird's-eye view.** Make sure the surface is stable before standing on anything.

For organizational purposes, have a clipboard or form that can be passed along each row to ensure proper identification of each individual. Photographers should work to help with organization.

Tiffini Jarvis: Bryant High School, AR

4.4

PEOPLE SKILLS:
INCORPORATING ENVIRONMENTAL PORTRAITS INTO YOUR COVERAGE

High school publications often feature students, teachers, administrators and others at the school who have unique hobbies or interesting experiences, who have overcome adversity or who have won top awards. Rather than invite the person to the journalism room and stand them against the white wall for a quick **"mug shot,"** a far better approach would be to plan an environmental portrait.

Photograph people in their environment to help the viewer better understand them.

An environmental portrait is a photo of someone in his or her "environment," which serves as a prop for helping the viewer understand this person. For example, an accomplished pianist might be photographed sitting at a piano in a space with nice window lighting. A horseback rider might be photographed holding her saddle in front of her horse in the barn. A surfer might be photographed on shore next to his board, looking out at the ocean. A student who volunteers to make and deliver food to the homeless could be photographed in the kitchen, apron and gloves on, holding a mixing bowl.

Environmental portraits are helpful, especially if the person is in a sport, like swimming or lacrosse, in which faces are rarely recognizable in action shots. However, they should not replace good action, reaction or interaction photos that can also accompany a profile about that person. **Environmental portraits do require prior planning and clear communication on the part of the photographer, but they're worth it!**

Sometimes photographers need to scout an environmental portrait location before the photo session. They may need a trial run to see if the equipment will produce the desired result. Good photographers establish a level of comfort with their subjects and in their environment.

Tiffini Jarvis: Bryant High School, AR

Mike McLean

Good photographers establish a level of comfort with their subjects in their shooting environment.

Scarlett Frausto: Golden West HS, CA

Louis Deluca, Dallas Morning News—2018 Pulitzer Prize Nominated Photo

SENSITIVE SITUATIONS

PRO TIP

For photographing a sensitive situation, like this Hurricane Harvey rescue from 2017, where people are in high stress or physical danger, many times it is better to stand back a bit as a photographer and shoot with a short to medium telephoto lens, rather than standing right up next to the action with a wide-angle lens. Occasionally your presence with a camera can also add to the stress of a situation or person, and you have to also be mindful not to get in the way of law enforcement personnel or rescuers. Using a telephoto in these situations can help you get the shot without adding to the chaos and stress of the moment of those in the photo. Remember, you are a human being first and photographer second...

Louis DeLuca
Dallas Morning News

ACTIVITY

CANDID PHOTOS AND PORTRAITS

BEGINNING PHOTOGRAPHERS

Take **candid** photos of your family and friends at work, studying, playing an instrument, participating in a sport or doing a hobby. Practice manipulating your camera dials to get the correct exposure. Try to capture enough photos to tell a story about that event or activity.

ADVANCED PHOTOGRAPHERS

Photograph an environmental portrait of a student, staff member or teacher at your school. Part of the assignment is to do the necessary **reconnaissance, or scouting,** which means determining proper lighting, location and time of day. You will need to conduct an interview with the subject to determine what he does and other information that will help you formulate the idea for the portrait.

Abbie Lopez: Crain's Creek Middle School, NC

REVIEW

KEY CONCEPTS

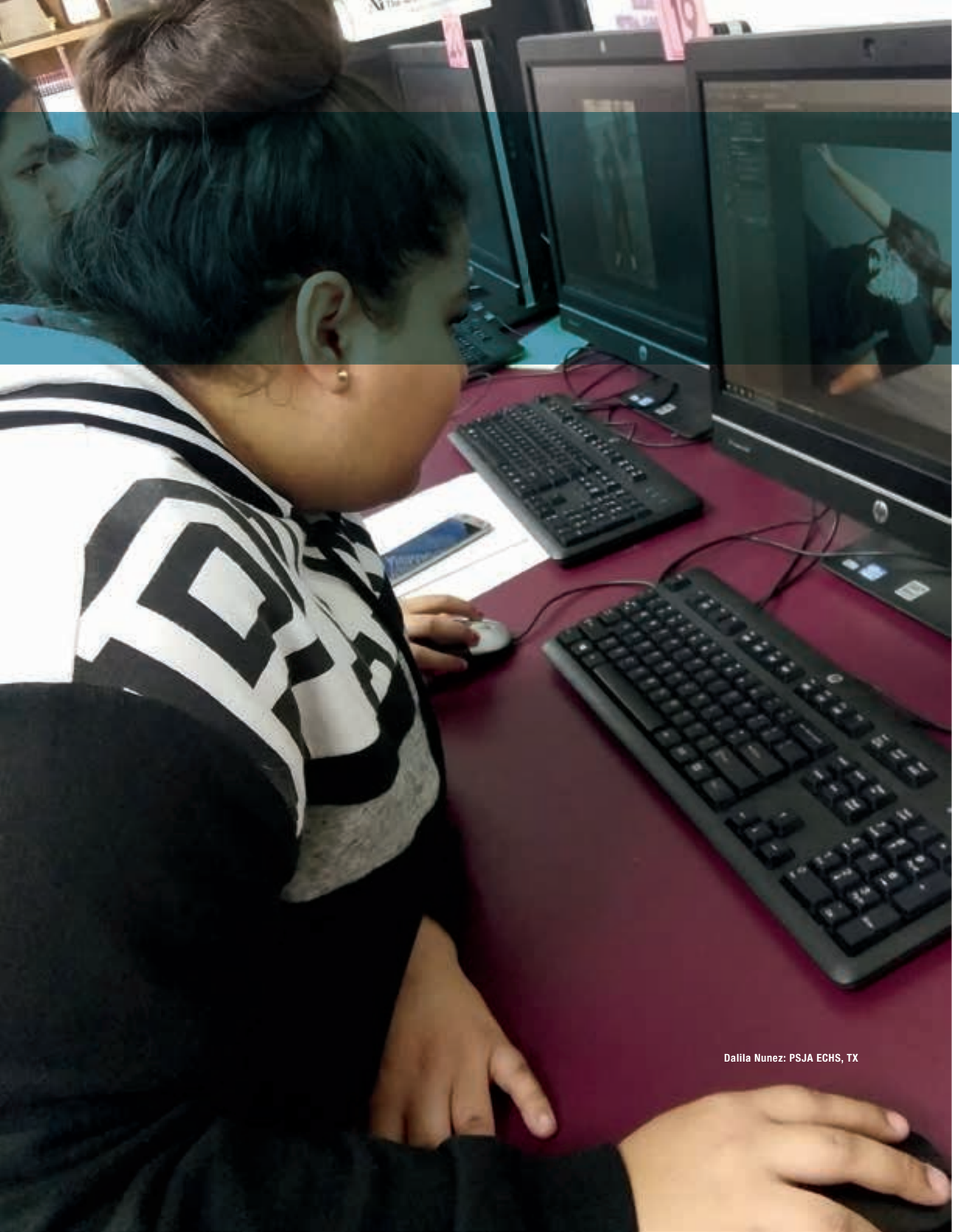
1. Photographers should capture images frequently throughout the school day, every day if possible.
2. It's part of a publication photographer's responsibility to take viewers to places the viewers can't go—to show them unique perspectives and help tell the story.
3. Staff members should make schedules and talk with department chairs and teachers to learn about activities going on in classes that would make interesting photos.
4. **Use the 4 R's:** Rapport. Relationships. Responsibility. Rewards.
5. Be conscious of where you stand, what camera settings you use and how you are framing the shot so you can capture the best images possible.
6. Do not use a flash for stage performances. Learn to use the lights available, watching for hot spots and shadows.
7. Remember to schedule shots for academics, clubs and non-school activities in order to get the full story of your student body.
8. Photograph people in their "environment" to help the viewer understand them.

KEY TERMS

4-R's
Av or A Mode
Candid
Depth of Field
DSLR
Environmental Portrait
Fisheye Lens
Hot Spots
ISO
Manual Mode
Mug Shot
Prime Lens
Reconnaissance
Scouting
Shutter Speed
Telephoto
White Balance

5

EDITING AND ORGANIZATION



Dalila Nunez: PSJA ECHS, TX

ASSIGNMENTS, ORGANIZATION, WORKFLOW, EDITING

PLANNING IS THE KEY TO GREAT STORYTELLING

Each photo is part of the story, whether it is a single dominant photo or part of a spread with many others. The best student photographers think about how every photo can contribute to the story and plan ahead to capture the best possible visuals.

Thomas Dang: Research Triangle High School, NC

VIEWFINDER

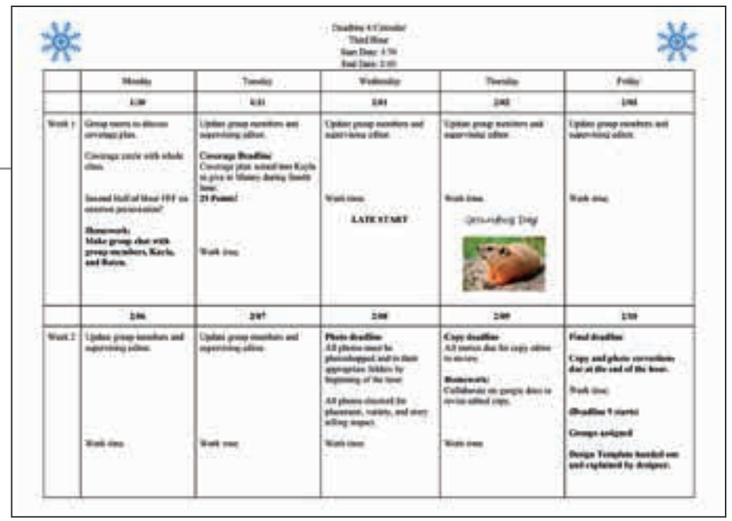
Photographers should not neglect capturing images that tell the story of the job of a publications photographer. This photographer used his zoom lens to give viewers a tight fill-the-frame image of a colleague on assignment.

5.1

GENERATING ASSIGNMENTS

Photographers must generate pictures in an organized and systematic way for their publications. Most publications use a combination of three approaches for generating photo assignments. Assignments are usually planned on a three- to four-week timeline. Especially if your yearbook uses chronological coverage, photographers should be taking photos at least a month prior to page submission. Newspaper, news magazine and web publications will want to use photos from the most recent games and events so that coverage doesn't look dated.

- **Assignment sheets:** Editors will create photo assignment sheets. They should be specific and are useful to track progress.
- **School calendar/daily announcements:** Schools usually publish a list of events, meetings and sports activities. These calendars are often published weekly and posted daily in classrooms and on websites. By referencing the calendars, editors can generate weekly photo assignments.



Grosse Pointe North High School, MI

- **Beat system.** Staff members are assigned beats, or coverage areas like academics, sports or clubs. Beats are especially useful in getting photos from academic departments not traditionally covered by the school's event calendar. Staffers have a weekly check-in with a person in their beat area to learn about photo opportunities—speakers, experiments, hands-on activities, cultural enrichment and role-playing. Asking staff members to submit a weekly coverage sheet could generate many opportunities for more interesting and storytelling photography in publications.

WEEKLY COVERAGE SHEET

Due Every FRIDAY

DO NOT USE CLUB MEETINGS, WEEKLY CHURCH SERVICES, THINGS LISTED IN ANNOUNCEMENTS, OR SCHOOL ATHLETIC EVENTS. Photographers are already aware of these events and are shooting them.

BHS STUDENTS NEED TO BE PARTICIPATING IN THE EVENT SO THAT THE PHOTOS WILL BE USABLE IN OUR PUBLICATIONS. Use different types of events. Do not always cover one subject or the same group of students.

NAME: _____

WHO	
WHAT	
WHEN	
WHERE	
NOTES	

Bryant High School, AR

Another source for assignments is social media, especially Twitter and Instagram.

Students often tweet or post about activities and events that happen outside of school and are not part of the school agenda. If your yearbook sells senior congratulatory ads, ask the ad manager to let you know about content that could be covered in a student feature.

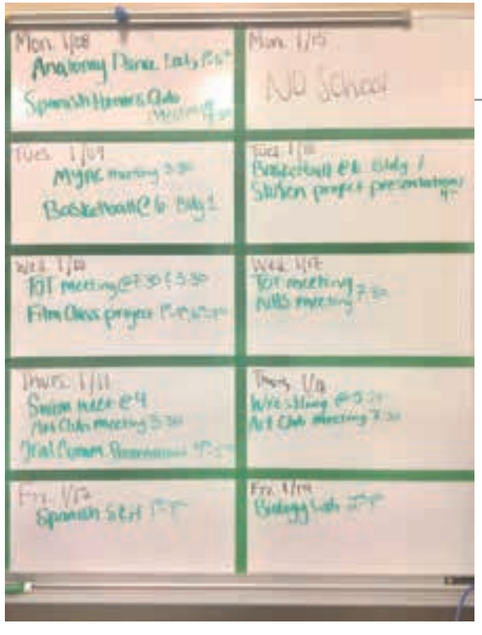
Utilizing both assignments and beats will provide publications with the most flexibility. The calendar system works well for sports, clubs and special events. Topics with specific content, like a morning routine spread, would need to come from a photo assignment sheet.

Communication is the key to success. Page editors and photographers should always discuss photo assignments. If you are lucky enough to attend a school with multiple journalism classes, plan a time to discuss assignments face-to-face. A common meeting time allows for collaborative discussion about a range of photo opportunities and assignment locations.

When photo assignments fail, the reason is often a lack of communication. A face-to-face conversation is the professional way to make sure you're all on the same page.

It is a good idea to keep a one- or two-week daily assignment list on a white board in the publications room. Use it for photo opportunities that pop up daily and also as a visual reminder of coverage opportunities. Also consider posting a large laminated calendar to list photo opportunities. This is especially helpful for sports.

The best photographers are constantly thinking about how every image contributes to the overall story. **The best photos capture a specific aspect of the topic, called an angle**. An event is often part of the coverage, but the event itself is generally not the topic.

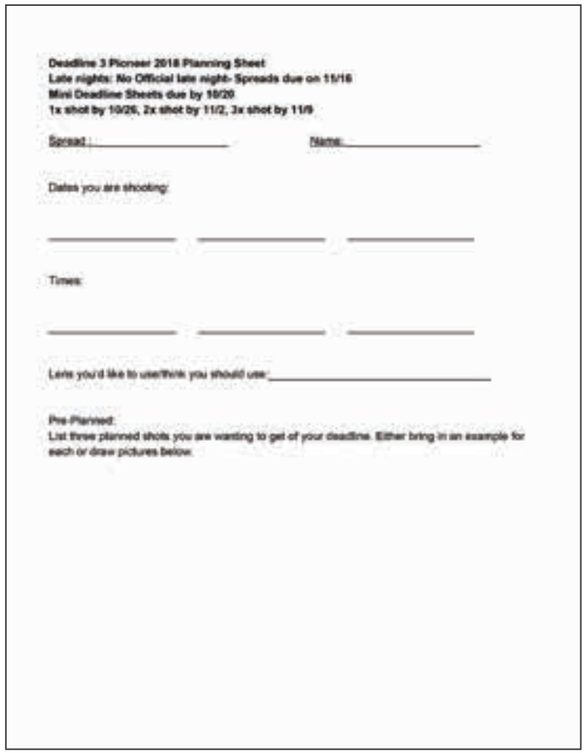


WRITING A GOOD PHOTO ASSIGNMENT

A great photo starts with a strong plan. Editors know that taking the time to write a clear assignment makes everyone's job easier.

- **DO SUGGEST:** Include possible subjects and locations to help the photographer get started. Editors can also help the photographer by sharing contact info of potential subjects.
- **DON'T DICTATE:** Avoid prescribing picture shapes when making assignments. Request both vertical and horizontal images, but allow the photographer to work the situation. If your spread design is based on a template, make sure the photographer sees it so he knows the photo shapes that are needed, especially the shape of the dominant image.
- **DO BE FLEXIBLE:** Photographers have homework and families too. Try to suggest a range of possible dates and times when an assignment can be done. Be sure to have an assigned back-up photographer in case the assigned photographer can't attend the event.
- **DON'T WAIT UNTIL THE LAST MINUTE:** Give assignments well in advance of the deadline so the photographer has enough time to get the shots, select their best, touch them up and upload them.
- **DO USE COMMON SENSE:** Freshmen often have transportation troubles. Don't assign a ninth grade photographer an event that happens after the school day unless you know she has transportation.

Likewise, the hardest assignments should go to the most experienced photographers so no one is set up for failure.



Deadline 3 Pioneer 2018 Planning Sheet
Late nights: No Official late night- Spreads due on 11/16
Mini Deadline Sheets due by 10/20
1x shot by 10/26, 2x shot by 11/2, 3x shot by 11/9

Spread:_____ Name:_____

Dates you are shooting:

_____ _____ _____

Times:

_____ _____ _____

Lens you'd like to use/think you should use:_____

Pre-Planned:
List three planned shots you are wanting to get off your deadline. Either bring in an example for each or draw pictures below.

Kirkwood High School, MO

"PEOPLE WITH CLEAR, WRITTEN GOALS ACCOMPLISH FAR MORE IN A SHORTER PERIOD OF TIME THAN PEOPLE WITHOUT THEM COULD EVER IMAGINE."

— BRIAN TRACY

IMAGE INSPECTION

Student photographers working the sidelines at a football game create their own center of visual interest. This photo smartly captures the interaction and reaction of two photographers sharing captured stop-action game shots.

Margie Raper: Highland Park High School, TX

5.2

PREPARING FOR THE ASSIGNMENT

A conscientious photographer knows when and where to show up, often arriving early and staying late.

Familiarize yourself with the subject and the event you are capturing. If it's a sporting event, learn the basic rules of the sport. Knowing basic rules will put you in the right spot to get a great shot.

A good way to familiarize photographers with a sport is to ask the coach to send a key player on the team to visit the publications room to give a presentation on the sport. This "Sports 101" talk will teach photographers the key rules of the sport. If you don't know what a touchdown or field goal is in football, chances are you're not going to get the shot of the winning score and the emotion erupting from that win or loss.

PHOTOGRAPHERS REPRESENT THE PUBLICATION STAFF AT ALL TIMES AND WILL BE QUITE VISIBLE AT EVENTS

- **Be familiar with the assignment location.** When covering a theatrical production, you will want to arrive at the auditorium ahead of time to locate the best and most inconspicuous places to take pictures. Better yet, attend the dress rehearsal so you know the plot, the lighting and the most opportune times to capture action and emotion.
- **Let the director, stage manager, club sponsor or coach know you will be there.** Photographers receive better cooperation from the adults in charge if they show responsibility.
- **Get to know the athletic director at your school.** He can give you insider knowledge.
- **Dress appropriately for the assignment.** If it's an informal sports event, attire can be informal as well. If the event is a banquet or prom, the attire should match the occasion. Photographers represent the publication staff at all times and will be quite visible at events. No frayed clothing or T-shirts with inappropriate messages. Remove hats when working indoors. Make sure your outfit gives full coverage on the front and back of the body, as well as allowing for movement, as you may be shooting from low and high angles.
- **Wear comfortable shoes.** Photography requires footwork and footwork requires more support than flip-flops or five-inch heels.

Lauren Smeltzer: Karl G. Maeser Preparatory Academy, UT

DRESSED FOR SUCCESS

Photographers need to wear comfortable clothes and shoes to be able to get in position on the gym floor. The bird's eye view of this photo captures a photographer dressed appropriately to sit low as he works his assignment.

5.3

ON ASSIGNMENT

Good photos happen when photographers use a variety of lenses, angles and compositional techniques in their shooting.

A good assignment will include a visual variety of horizontal and vertical images taken before, during and after the event. Work to capture individuals, small groups and large groups in your images. This visual variety will be important later when choosing photos that tell a story for a spread.

Be sure to include these shots in your assignment:

1 CLOSE-UPS AND TIGHT CLOSE-UPS.

Both shots require photographers to move in very close to show extreme detail. It is important to know how to set your camera to capture these detail shots. These shots might require a short telephoto lens to bring small details into camera range.

Sydney Miller: Brookville Junior Senior High School, PA

Jennifer Cervantes: McFarland High School, CA

2 MEDIUM SHOTS

These images show more environment and context. They can be shot with traditional normal lenses, such as a 50 mm lens.

Hallie Ridings: Chapman High School, SC

3 LONG SHOTS

Usually shot with telephoto lenses, these zero in on people, content or expressions. Telephoto lenses will have a more narrow depth of field, separation of background and foreground.

Aaron Fitzpatrick, Freedom Area High School, PA

4 WIDE-ANGLE SHOTS

Also known as an overview shot, these pictures provide a broader view of the environment or setting and allow the reader an inside view of the surroundings. These pictures are usually shot with a wide-angle lens.

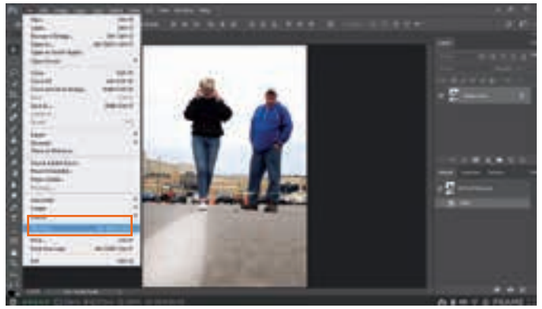
If you are using a **point-and-shoot camera** with a **fixed focal length** lens, your options will be more limited. Be careful to not end up with dozens of nearly identical pictures by making sure you are varying your angles and changing your shooting position in relation to the center of visual interest. A bird's-eye view of the marching band will give you a different picture than a worm's-eye view.

CAPTION INFORMATION

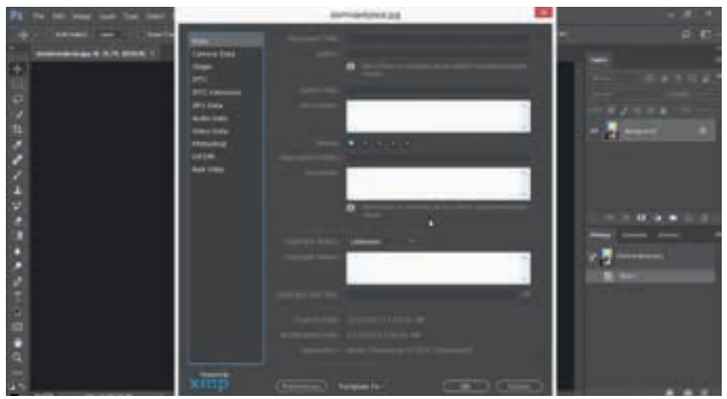
Every photographer should carry a pocket notebook or **Reporter's Notebook** in his camera bag to jot down vital caption info.

Any information you can provide will aid in accurate caption writing. In the notebook, note who, what, when and where for the writers. If you have taken a show-stopping photo that would work as a dominant image on a spread, interview the person who is the center of visual interest to get in-the-moment quotes.

Make sure your information is accurate. Ask how to spell a name. Ask the grade. Get an in-the-moment quote. Provide as much accurate information about the image as possible. Make sure you take images first and get caption information later. It is much better to provide too much information than too little. Remember, no one knows better than the photographer. After all, she was there.



The accurate info you jot down can be entered in the metadata of the image during the editing process. You may not be writing the captions, but you should check to make sure information is accurate before the spread goes to press. Reviewing the captions also allows you to ensure the photo is properly attributed.



5.4

TRACKING PHOTOS

Tracking is crucial. Whatever system is established, photographers must follow it. Copies of assignments should be kept on file either electronically or in some kind of notebook. The tracking system should note the due date of the assignment, the file name and the name of the folder in which the photos are kept.

Venus Gutierrez: Shawnee Mission East High School, KS

ELECTRONIC FILES

An **electronic file system,** with folders for all spread topics, clubs, teams, academic areas and edited pictures, is the most efficient way to organize photos. When spreads are ready to be designed for deadline, page editors can go to the appropriate files and choose the best images for the content. The photographer should collaborate with the page editor on photo selection to connect the dominant photo with the story angle in body copy and headline.

For each photo, capture metadata like names and keywords so that search functionality can make it easy to locate images. If you enter accurate name information for each photo, your yearbook creation program can help create your index.

Staffs using image-editing and management programs such as Adobe Photoshop, Adobe® Bridge, GIMP, Apple® iPhoto® or Lightroom can also organize edited assignments and create **contact sheets.**

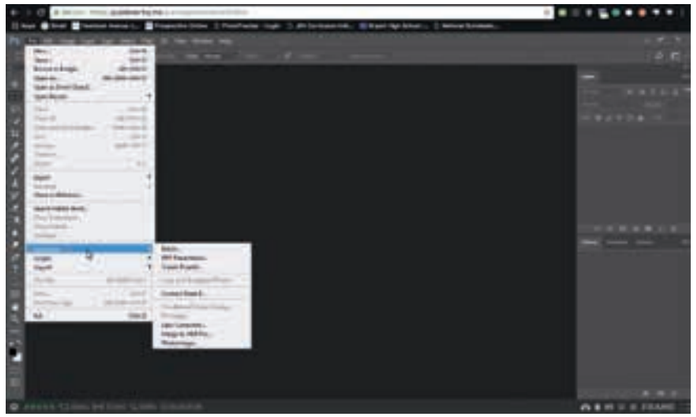


Image-editing and management programs offer advantages:

- **Options for displaying the pictures,** including star rating systems.
- **Metadata,** the technical data from the photo, a great way to see the camera settings of the exposure.
- **Search capabilities.** Electronic filing can also prevent a great photo from being overlooked. At a football game, the photographer's primary objective might be game action shots of the team playing, but the event also provides opportunities for shots of the band, cheerleaders, dance team, ROTC presentation of colors, spectators and school spirit. With electronic filing, the staff can organize photos by topic.

Electronic filing also allows the photographer to establish sub-folders for topics within sections. For example, the clubs section could contain a sub-folder for each club, and each club folder could contain sub-folders for particular trips and activities.

MASTER BOOK

Keep all printouts of contact sheets organized in a single master book. As page designers create spreads, they can search for images in the master book. Then the photographers can pull the images and provide them to the page designers in a file folder created for spread content. Also, consider involving others in the photo selection process by projecting a contact sheet on a classroom screen for all to view. Too often, great photos end up buried in electronic files and remain unused when they could have been storytelling images on spreads.

Jaxon Chapman: Castle View High School, CO

SORTING STAFFERS

With printouts of spreads laid out on the floor, staffers proof pages and make edits on laptops. The high angle and repeating pattern image tells the story of the next step of production after spreads are submitted.

5.5

EDITING

ELIMINATING PHOTOS

You will probably return from an action-packed pep rally with many images, maybe hundreds.

But most of them won't be keepers. In fact, most professionals keep a small fraction of the photos they capture. Get into the habit of editing the images as soon as possible after uploading them to the computer. If a bad image is left on the computer, you run the risk that it will be used.

Tips for selecting photos that can be deleted:

- If there are multiple shots of the same person at an event, get rid of the ones that did not work or are similar.
- Delete images that are too dark, blurry or have no center of visual interest.
- Never leave a **grainy or noisy** image on the computer. If it cannot be easily improved in an image-editing program like Photoshop, dump it.

USING PHOTO EDITING PROGRAMS

1. Cropping is the most important strategy for improving photos.
2. Cropping eliminates dead space and improves composition. Insist that editors design layouts to accommodate the final cropped images. Editors should never force photos into a pre-designed photo box if it is not the right proportions. Editors will visualize the spread more easily if the images are cropped effectively ahead of time.
3. **If working in an image-editing program, maintain the highest possible resolution.** However, images should not be sampled up—making the photo larger than the original without reducing the resolution.
4. If you have access to a program like Adobe Photoshop, be careful of the editing you do. Journalistic ethics demand that subjects should not be added to or removed from an image. Appearances should not be altered to flatter or humiliate.
5. Objects in the photo should be not be moved or removed to strengthen the composition. If you missed capturing the soccer ball in the game action shot, do not add it.
6. It is acceptable to make corrections to the exposure of the image without altering the tone. The image used should represent as closely as possible the reality of the actual event.
7. In Photoshop, exposure correction tools that are acceptable to use include levels, curves, dodging, burning, unsharp mask and shadows/highlights.
8. Use the ruler tool to make the horizon level. It is disconcerting for the eye to look at a photo that has been taken at an angle that results in a slanted horizon.
9. **Never alter the original image in any way.** Make a copy of the original to edit. Make sure you have plenty of storage for original and edited images. Work with your school's technology director to secure storage if your original images are stored on a school server before they are uploaded to the Cloud. Also, consider purchasing a back-up external hard drive for image storage. You cannot afford to lose images. This is an issue that should be addressed in August before school starts.

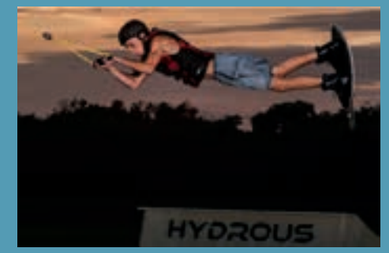
A practiced photographer doesn't need to spend much time editing images. Take the time to learn how to set your camera for the right exposure.

MAKE IT GREAT

CROPPING EXAMPLES

Using a good crop can bring out the center of visual interest (CVI).

Before cropping



After cropping

If the horizon is not level, edit the image using the ruler tool in Photoshop to straighten it out.

Before using ruler tool

After using ruler tool

5.6 DESIGN: VISUAL EDITING

Visual problems happen when poor editing decisions are made during the selection process. All photos placed on a spread should be strong enough to make the reader want to see more.

These common weaknesses detract from an attractive, evocative spread:

- **Shape redundancy:** Repetitive use of similarly shaped photo boxes weakens the visual effect. Squares are the least interesting visual shape. Preference should be given to verticals and horizontals.
- **Size redundancy:** A dominant photo creates a strong visual impact by being two or three times larger than any other photos on the spread. A spread with an obvious dominant plus small, medium and large photos will captivate the interest of the reader.

Glenbrook South High School, IL

- **Busy bleeds:** Bleeding—extending an image to the outside edge of a page or across the gutter onto both pages—should make the image more dynamic in the design. Reserve bleeds for large dominant images to make them more powerful. A general rule on bleeds is one per side, avoiding bleeds that run off the left side of the left page. Never bleed group shots.

Kirkwood High School, MO

- **Busy content in small photos:** Pictures with many people in them, or with complicated contextual information, need to be larger than simple images. When a subject's head is smaller than the size of a nickel, the ability of readers to see the content is lessened.
- **Tonal inconsistencies:** Pictures on spreads need a consistency in tonal appearance. If one image is brighter, darker or varies in tones that should be consistent, like skin tone, it will distract from the overall impression. Some tonality problems arise from improper flash use. Direct flash produces washed-out highlights and deep shadows.

- **Weak cropping:** In general, photographs should get stronger with tighter cropping. The cropping should be tight enough to eliminate distractions. Special attention should be paid to sports cropping. In upper-body sports such as tennis, volleyball and golf, the players' legs can be cropped out to focus on upper-body action.

Sara Benson: Shawnee Mission East High School, KS

- **Pictures forced into layout spaces:** When design evolves from the strength of the photography, the message is stronger. Pictures chosen solely because they fit the photo box will never be as effective at telling the story.
- **Best picture not used as the dominant image:** Make sure that photographers, who are visual thinkers, participate in decisions about picture use.
- **Faces looking off the page:** A good spread should lead the reader's eye in a circular motion. This motion is disrupted if someone in a photo appears to be looking off the edge of the page.
- **Generic pictures:** Re-creating the images you see year after year is a surefire way to a boring publication. Avoid multiple shots of teachers pointing at boards, the principal holding a phone, students staring into computer screens and people sitting at desks. Reaction shots are more interesting and emotional. The best publication staffs brainstorm fresh ways to show ordinary aspects of school.
- **Focusing on inanimate objects:** Photographers should always look for opportunities to include people in pictures when inanimate objects will be included. For instance, a sign made by students should always be shown with its creators.

Plano East High School, TX

Plano East High School, TX

5.7 TECHNICAL DIFFICULTIES

Technical or image quality issues can ruin the impact of a spread. A good photographer will work to make sure issues don't occur.

If photographers don't pay attention to resolution when shooting, the picture will not reproduce well in print. There's a direct correlation between image resolution and output size: low-resolution images result in pixelated output.

Cameras have shutter speed settings that must be used for flash. Settings that are faster than the recommended setting will cause the shutter to open for only a portion of the exposure.

LOW-RESOLUTION IMAGES RESULT IN PIXELATED OUTPUT

Photographers should always anticipate lighting. Make sure to bring a flash or external light if you think the lighting will be low.

Photographs shot in fluorescent light will need tonal adjustments in an image-editing software such as Adobe Photoshop or Apple iPhoto. If you do not have access to image-editing software, make sure the white balance is set properly at exposure to avoid the need for adjustments.

Hannah Martin, Bryant High School, AR

COMPUTER CLICKS

A photo of publication students spending a lot of time on their laptops is often a boring image. This image avoids that typical trite shot by showing staff members in a work session at a local restaurant. The high angle and repeating pattern offers a fresh perspective on students working on a computer.

When taking action or low light photos, use a camera mode that offers faster shutter speeds like 500, 1000 or higher. Every rule has an exception, though; some photographers will use slow shutter speeds deliberately to achieve a blurred effect.

Autofocus modes work well as long as the mechanism is focused on the subjects. With manual focusing, you need to ensure that you are focusing correctly before firing the shutter release. If another photographer uses the same camera, make sure to reset the diopter settings before using the camera.

Don't be the photographer who comes back empty-handed from your football team's homecoming victory or the drama club's grand finale. Some technical difficulties can leave you with no pictures at all. All of them can be prevented:

1. **INCORRECT FORMAT**

   With advanced cameras, photographers shooting in the RAW format will quickly use up space on their memory cards. Photographers should check their modes and use the highest resolution that the camera can support. JPEG format is suggested.

2. **CORRUPT IMAGES**

   Images can be corrupted or lost because the card reader was improperly ejected or the image was formatted in the computer rather than the camera. While software does exist to extract images from corrupt memory cards, that process can be time-consuming.

3. **DEAD BATTERIES OR FULL MEMORY CARD**

   Good photographers carry extra batteries and memory cards when shooting. It's a good idea at big events with several photographers to have an extra supply of memory cards on hand. Once-a-year activities cannot be redone.

4. **SHOOTING OVER, DELETING OR REFORMATTING ANOTHER PHOTOGRAPHER'S PICTURES**

   Every staff needs an organizational system to ensure that pictures are downloaded before a memory card is used again. Do not leave a memory card out in the staff room where another photographer could use it accidentally. If your staff shares cameras, consider purchasing separate memory cards, number them and assign to each photographer. A stray card found on campus or in the staff room is then easily identified by the photographer assigned to it.

5. **DAMAGED EQUIPMENT**

   Cameras or lenses that have been dropped or damaged by spilled liquids or other hazards must be pulled from the school's equipment supply and repaired immediately.

6. **FAILED ASSIGNMENTS**

   Cancellations and assignments that aren't clearly defined need to be dealt with quickly to prevent falling behind schedule. Always try to have a person assigned as the back-up in case the assigned photographer should fall ill or get a flat tire, causing him to miss or be late to the event.

7. **TIME MANAGEMENT ISSUES**

   Photographers need to make sure to get to assignments early, stay throughout and shoot plenty of images.

8. **STAFFS SHOULD CONSIDER CREATING A PHOTO DEADLINE CHECKLIST**

   A good way for each photographer's images to be consistent with the publication's standards.

Photo Deadline Checklist - 50 pts.

Page #_____

Deadline #_____

Topic/Title of Spread_____

Spread Partners_____

Supervising Editor_____

Photo Variety

_____ Photos are of variety people (if the stories feature lots of options)
_____ Photos are of people key to the event/story
_____ Photos are not of people who are already covered a lot or are easy to cover
_____ Shots of the same person or activity does not appear over and over on the page
_____ Backgrounds are varied

Photo Quality

_____ Subject is clear and in focus
_____ Background is controlled
_____ Photo is not against a locker or wall
_____ Dominant photo is energetic, emotive, and the best choice to tell the story

Photo Placement

_____ Photos at left edge of left page and right edge of right page are facing/moving inward, not off the page
_____ Photos that cross the gutter do not trap faces in the gutter
_____ Photo can be cropped to be aesthetically pleasing in the space intended
_____ Photos with forward movement can be cropped to leave space in front of them
_____ Photos with people looking down, up, left or right interact with other photos in the module

Photo Editing

_____ Color is balanced (especially yellows)
_____ Contrast/Brightness is level

List All Image Numbers (and what the content is) that needs to be re-taken or re-placed.

Photos to be retaken:

Photos missing:

Notes from Supervising Editor for Ms. Butzu:

Post a copy of this checklist in the spread group's GroupMe and turn this checklist in to Ms. Butzu's before the end of the hour.

Grand Blanc High School, MI

“SETTING A GOAL IS NOT THE MAIN THING. IT IS DECIDING HOW YOU WILL GO ABOUT ACHIEVING IT AND STAYING WITH THAT PLAN.”

— TOM LANDRY

Emily Huddleston: Jasper High School, IN

PRO TIP

PLANNING IS KEY

After photo topics are assigned, the planning begins. It first starts with a general class brainstorm so everyone can offer ideas for specific shots, angles and stories to be told. The photographer then completes a planning sheet that includes a minimum of three planned shots accompanied by a professional shot or a sketch.

We think covering something with a plan will help the photographer be more successful. The planning sheet also includes three intended shooting dates (one-time events excluded). Each shooting date is a mini-deadline to keep the photographer on track.

Before shooting, we encourage the photographer to look in our last three yearbooks to make sure we are telling different visual stories.

The photographer then collaborates with an editor to discuss the proper equipment for the shoot. After the shooting date, the photographer will upload, sort and edit photos. The final folders are shared with the writer and designer for caption writing and spread placement.

Photographers are encouraged to remain a part of the collaborative process until the spread is complete, including reading all copy on the page to make sure the visual and verbal connect.

Mitch Eden
Kirkwood High School, MO

ACTIVITY

PHOTO SELECTION AND EDITING

PRACTICE SPREADS

Create teams of one photographer and one designer. Using a pre-created template for the teams, give them the same 10-15 images of an event and have each choose images to place on the spread.

After the practice spreads are complete, have each team present their choices and reasons why. Choices should include individual, small group and larger group images; close, near and far images. Also consider all grades represented, not just seniors.

PHOTO SELECTION

Print a contact sheet of 20 images. Students will choose a vertical and horizontal dominant and explain reasons why.

COVERAGE SHEETS

Create a coverage sheet for academics, organizations and student life events. Each staff member is required to complete one each Friday for the upcoming week. (See page 132.) Create a chart to cover the events and send photographers to capture them. Even one useable photo adds coverage to your publication.

PHOTO EDITING PRACTICE

To practice editing, load a file with 10 unedited images.

Assign each photographer to crop each image. Compare the original images with the cropped ones. Analyze for effective use of the crop tool. Once students have mastered the crop tool, ask photographers to work with other common exposure tools like levels and curves.

REVIEW

KEY CONCEPTS

1. Planning is the key to great storytelling.
2. **A great photo starts with a strong plan.** Editors know that taking the time to write a good assignment makes everyone's job easier.
3. A conscientious photographer knows when and where to show up, often arriving early and staying late.
4. Good photos happen when photographers use a variety of lenses, angles and compositional techniques in their shooting.
5. Get in the habit of editing images as soon as possible after uploading them to the computer.
6. Visual problems happen when poor editing decisions are made during the selection process.
7. All photos placed on a spread should be strong enough to make the reader want to see more.
8. Technical or image quality issues can ruin the impact of a spread. A good photographer will work to make sure issues don't occur.

KEY TERMS

Angle
Assignment Sheets
Beat System
Bleed
Center of Visual Interest
Chronological Coverage
Close-Up
Contact Sheets
Coverage
Cropping
Dominant
Electronic File System
Fixed Focal Length Lens
Grainy/Noisy
Horizontal
Interview
JPEG Format
Long Shots
Medium Shots
Metadata
Photo Deadline Checklist
Point-and-Shoot Camera
RAW Format
Reporter's Notebook
Resolution
Template
Tight Close-Up
Vertical
Visual Variety
Wide-Angle Shots

Kristi Ho: Everett High School, MA

6 LAW AND ETHICS

6.1 PHOTOJOURNALISTS' RIGHTS

A person's right to take photographs and publish them is protected by the First Amendment as a form of freedom of expression.

However, in 1988 a case called *Hazelwood v. Kuhlmeier*, which was decided by the Supreme Court, gave more control to school administrators and less to student journalists regarding First Amendment rights. Some states have since passed laws that expand student press rights beyond *Hazelwood*, but not all. As a student journalist, you need to know where you stand.

HAVING ACCESS AS A PHOTOJOURNALIST

- Where are student photographers allowed to take photos?
- What restrictions apply?

As a photographer, you can always take photos in public areas. Public areas include streets, sidewalks, beaches and parks…any place accessible to the public. In the United States, photographers are allowed to take photos of anyone, from children to professional athletes, in a public place. Subjects cannot demand that you turn over your memory card or erase images, nor can they have you arrested, which are typical threats by people who prefer their photo not be taken. Be respectful. But photojournalists also have the right to decide how important the images are and whether they will be important to the audience.

Mike McLean

If a location is privately owned but open to the public, such as a hotel lobby or a restaurant, photographs may be taken as long as no one objects. In the case of museums and medical facilities, permission must be obtained before photographing. Photographers should never interfere with the police, fire or medical personnel trying to do their jobs.

REASONABLE EXPECTATION OF PRIVACY

Reasonable expectation of privacy means that people have a right to privacy in places that are usually expected to be private, like in a home. Photographers cannot enter a home to take photos without consent, nor can they take photos into a home through a window while standing on the subject's private property. People have a reasonable expectation of privacy in other places as well, such as in medical facilities, including inside an ambulance with the doors closed, or athletic dressing rooms at school.

When it comes to public high schools, there are restrictions. Any outside media wanting to photograph on the property may need permission from the principal. However, student photographers rarely have to ask the principal every time they want to cover a pep rally or choir concert. You do, however, need to check with the supervisors of those activities to be sure you're in the appropriate area for photographers. Teachers may want to control and minimize distractions in their classrooms, so it is wise to check with individual teachers before taking photos during a lecture, lab or other classroom activities. At the beginning of each school year, or periodically as necessary, meet with the principal to review policies and discuss any concerns student journalists have.

Private school publications may not enjoy the same freedoms as public schools. Know the policies and meet with administrators to develop a working relationship and an open dialogue.

"DO NOT PUBLISH" FORMS

Do Not Publish forms allow guardians the right to prevent their child's image from being used by the school. The forms primarily address the use of student images or names in official school district media.

Because the school's newspaper, yearbook, website and broadcasts are student publications, they are not required to omit students on "the list" who might appear in a German Club group photo or on the court at a basketball game. **There might be special circumstances**, however, so the adviser should check with administrators on any such cases, including when taking photos of special education students or capturing private group events.

Lindsey Sharp: Central High School, TN

USING A PICTURE TO SELL A PRODUCT OR SERVICE WITHOUT THE SUBJECT'S CONSENT

You cannot use any person's image, whether famous or not, to promote a product without written permission from that person. For instance, perhaps you took a photo of a famous singer when she visited the community. Without written consent, that photo, or even her name, may not be used in a yearbook ad for a local restaurant. Likewise, without written consent, a photo of a fellow student may not be used in an ad for a local gym. Their images may, however, be used without permission in a publication for news purposes.

6.2

COPYRIGHT, THE INTERNET AND FAIR USE

COPYRIGHT: WHO OWNS THE PHOTOGRAPH?

From the moment your finger squeezes the shutter release, the photo belongs to you. It doesn't matter who owns the equipment or where the shot was taken, **in almost all cases the photographer controls the image and owns the copyright.** (Exceptions, however, may be established between a photographer and employer in advance, in work-for-hire agreements, for example.)

That said, each publication should have a policy regarding the use of work taken by student photographers on assignment for the publication. Similar policies determine who controls the work of professional photographers working for news media. All parties need to understand whether student photographers can post their work to their own social media sites before the work appears in the school publication and whether they can sell those images for personal financial gain. Technically a photographer owns the copyright when an image is created in fixed, tangible form, but it's in the photographer's best interest to legally register the photo with the U.S. Copyright Office in Washington, D.C. When posting images to social media or on personal websites, it's best to watermark them with the copyright icon or the word "copyright."

PHOTOS ON THE INTERNET

Students often wonder if they can use an internet photo in a story.

- The good news: the internet makes it easy for students to find images of practically anything.
- The bad news: these images cannot be republished except under specific circumstances.

Just as you own the copyright to your images, other photographers own the copyright to images on the web or in print publications. Giving credit to the social media feed by stating "courtesy photo by Twitter" isn't acceptable or lawful. Legal use of another photographer's image in any publication involves at least one of the following four steps:

- Receive express written permission to use the image
- Purchase the image
- Use images with pre-arranged usage rights such as those given by **Creative Commons**
- Use images in the **public domain**

Posting your own photos with Creative Commons is one potential way to get your work seen and your name known. Be aware, however, that you cannot completely control how your images will be used.

That being said, you can specify whether an image can be used for advertising. You can also make other stipulations, including whether an image can be used without payment.

FAIR USE

Under Fair Use, users are granted limited and reasonable use of an image or text that doesn't interfere with the owner's rights. For example, it is reasonable for a high school publication to use a still image from a movie's official website to accompany a review of the movie. However, you may not use the images to improve the look of your design, in an advertisement or for other financial gain. Fair Use has nothing to do with linking back to the original or providing attribution. Simply giving credit to a source does not give you permission to use it!

NOTE: CONSULT WITH THE STUDENT PRESS LAW CENTER FOR SPECIFIC AND FREE ADVICE ON COPYRIGHT AND OTHER ISSUES SPECIFIC TO STUDENT PUBLICATIONS.

PROS WHO KNOW

CREATIVE COMMONS

The internet makes the idea of universal access to research, education and culture possible, but legal and social systems do not always allow that idea to be realized. Legislators created copyright long before the emergence of the internet, and current provisions in the laws can make it hard to legally perform actions like copying, pasting, editing a source and posting to the web. The default setting of copyright law requires users performing these actions, including artists, teachers, scientists, policymakers, producers of the mass media and private citizens, to receive explicit permission, granted in advance.

To achieve the vision of universal access, Creative Commons helps individual creators. Creative Commons provide a free, public and standardized infrastructure that creates a balance between the reality of the internet and the reality of copyright laws. There are six types of basic Creative Commons licenses, all of which come with clearly identifying symbols. The most accommodating of these (CC BY) lets others distribute, remix, tweak and build upon a work, even commercially, as long as they give credit for the original creation. The most restrictive of the licenses (CC BY-NC-ND) allows others to download works and to share them with others, but not to change or use them commercially, as long as they give credit to the original creator.

In short, a Creative Commons license provides a user with a form of explicit, written permission, granted in advance, to legally use copyrighted material under the guidelines provided and with the appropriate credit.

Dr. Bradley Wilson
Director of Student Media,
Midwestern State University

DRONE USAGE

6.3

More school publications programs are incorporating drone photos and video into coverage of school activities. Because of the unique perspectives offered by drones, viewers may get glimpses of scenery, sports and other events they can't ordinarily access.

There are certain places where drones, otherwise known as **"unmanned aerial vehicles,"** are not allowed except under specific circumstances. For example, the National Parks system has restricted the use of drones in all but a few parks. The governing body of UAVs is the **Federal Aviation Administration (FAA)**. This agency determines who needs to be licensed and other important considerations applicable to all operators, including high school photojournalists.

Deanne Brown

Organizations that govern school activities within their respective states have their own rules regarding drone usage on school property. Additionally, each campus or district likely has its own policy. If the student media organization can demonstrate that their drone use wouldn't compromise student safety or otherwise interfere with campus life, the school authorities should be receptive. If there is evidence to show the restrictions were simply meant to inhibit news coverage, a district's policy could be subject to challenge, according to the Student Press Law Center, or SPLC.

Also according to the SPLC, the distinction between a UAV hobbyist and a professional is crucial. In May 2016, the definition of a "hobbyist" expanded to include the use of UAVs in an educational setting, provided it was part of the coursework at an accredited school. The FAA's guidance explicitly included television and film production. Hobbyists do not need licenses, but they do need to register their UAV. If students want to fly commercially and benefit financially from their videos or photos, they should acquire a Remote Pilot Certificate from the FAA.

Tim Whaling: Westlake High School, TX

The bottom line for student journalists according to the SPLC: Insurance matters, and schools' administrations might have varying degrees of willingness to shoulder the liability that goes along with students piloting a UAV. When things go wrong, students who haven't done their due diligence shouldn't expect to be bailed out. Student journalists and journalism organizations, whether it be a publication or class, should obtain proper licensing, follow the law and work with administrators on a drone-use policy for newsgathering purposes.

Heather Jennings

DRONE SAFETY TIPS AND OPERATING RULES:

- Register your drone on the www.faa.gov site
- Fly your drone at or below 400 feet
- Avoid losing sight of your drone
- Avoid flying in controlled airspace (near airports)
- Respect privacy
- Avoid flying over groups of people, including outdoor concerts and stadiums
- Avoid flying near emergencies such as fires or hurricane recovery efforts
- Never fly under the influence of drugs or alcohol
- Fly only in daylight
- Never be careless or reckless
- Do not fly and record if there is a reasonable expectation of privacy, such as over someone's front or back yard

You could be fined for violation of operating rules.

For current rules and regulations regarding the operation of UAVs, always check the faa.gov website.

A CLOSER LOOK

COVERING NATIONAL EVENTS

DO THIS

If you are covering world events in your publication, such as the election of a new president or a Grammy-award-winning singer, you can use images from Creative Commons (check for stipulations) or the public domain.

OR DO THIS

Purchase a Jostens World Beat Current Events insert to go in each yearbook. All images have been purchased and accurate stories have been written.

DON'T DO THIS

Cover the story by using a copyrighted photo from the internet.

6.4 DIGITAL ETHICS

Ethics—just because you can, doesn't mean you should…

The intended use of a photograph will impact the amount of manipulation that is allowable. Images used for commercial use or for art photography are not held to the same legal and ethical standards as those used in print and digital media. It is important to understand the difference between photojournalism and photos that are used to illustrate.

IMAGE MANIPULATION

Photojournalists do not use manipulated photos to tell a story. Editing that is equivalent to the work done in a traditional darkroom is acceptable without question. Traditional darkroom techniques and allowable digital enhancements include burning, dodging, exposure adjustment, color correction, removing "dust" spots, contrast, straightening and cropping. More extreme changes to the photo, such as combining images to make composites, adding or removing items from the image, flipping the image horizontally or vertically, or extreme changes in color should be labeled in publications as photo manipulations. Cutouts, or removing backgrounds, also known as COBs, are not considered manipulations.

Editing a photo to add or subtract content is all too easy using a program like Adobe Photoshop. **It is unethical to manipulate the image, however, if it is being used for journalistic purposes.** Never use technology to change the appearance of reality.

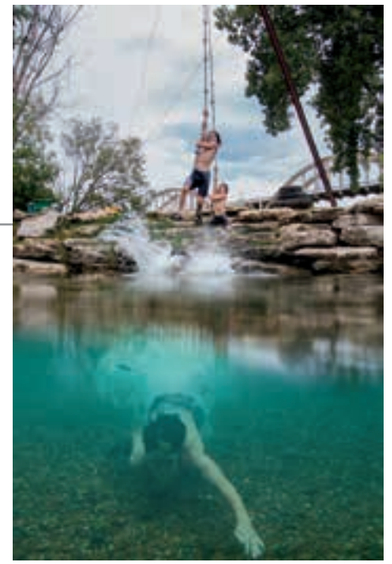
Original image

Manipulated image

Photographic integrity is important. Even though the removal of a distracting tree in the background or the addition of a tennis ball to an action photo might make the photo better and seem like a small edit, those are, in fact, examples of manipulations not allowed by journalistic standards. Journalists are held accountable for showing and telling the reality of situations. Misleading the viewers and readers by misrepresenting the truth will cause them to question the accuracy of other photos, or of the publication as a whole. On the professional level, some photographers have even lost their jobs for making poor ethical decisions.

These guidelines will help you in making decisions about editing and including photographs in your publication:

1. No content should be removed from a photo other than what can be accomplished through cropping the photo dimensions. Photographers should notice distracting elements while shooting and adjust by moving or using a shallower depth of field rather than editing with software.
2. **Composite photos** and any other photo where manipulation has occurred should be labeled as a photo manipulation or illustration and should be published in such a way to make it clear they do not represent reality. Such images should never be used as documentary or news images.



Noah West: Bentonville High School, AR (Composite)

Tim Whaling: Westlake High School, TX (Composite)

3. Images should not be flipped on the page to make the subject face a different direction. Layouts should be designed, and sometimes redesigned, around the direction of the eye flow in the images.
4. Published photos should contain complete captions and should provide credit to the photographer who shot the image. In the case of manipulations, the information should include the fact that the image was manipulated. This information can be in the caption or part of the photo credit.

6.5

BEHAVIORAL ETHICS

Here are some journalistic guidelines to keep in mind when capturing images and gathering information for publications:

1. Most photographs should be moments that occur naturally, not posed or set up by the photographer. The subjects should be engaged in the activity. The exception would be environmental portraits, where the photographer may bring in props, control the lighting and collaborate with the subject regarding wardrobe.
2. Avoid taking photos in which the subjects are posing for the camera, except in the case of portraits.
3. Student photographers should not use cameras to harass anyone or gain illegal entrance to an event.
4. Student photographers should be respectful of their subjects. Be especially sensitive to those who have suffered a loss, a tragedy or other emotionally traumatic event. A great photographer doesn't avoid sad events, as these are a part of life. The photos help tell the story when school communities suffer the death of a student or a natural disaster destroys homes. If you photograph a student who is a minor and who is being photographed for a story about how they are coping with depression or an eating disorder or are perhaps coming out as transgender or any number of other sensitive topics, **you will want to check your school's policy for alerting parents before publishing**.

McKenna Manalli: Byron High School, IL

5. In almost all situations, coaches, teachers and administrators cannot control which photos are used in public school student publications. Such a challenge might occur when, for example, the varsity soccer team loses the state championship and you shoot photos of the members crying. While it might not be something they wish to remember, it was a newsworthy event, open to the public, and it is your First Amendment right to use the photos. It's your job to be fair and accurate, telling all sides of the story. **When in doubt, consult with the Student Press Law Center.** Weigh the importance of that photo with any embarrassment the players or their families may suffer.
6. Student photographers must always dress and act in a professional manner that reflects positively on the school and publications program. When on an assignment, a photographer should be "all business." The press area at an event is usually restricted to the media. Do not take friends with you into this area. Do not cheer or clap. Do not distract players or students participating in the event. Remember, you are capturing the event as a working photojournalist, not as a member of the audience or as a fan. **Again, your job is to be unbiased, fair and accurate.**
7. Carrying a press pass issued by the publications adviser identifies you as a member of the staff, but doesn't automatically admit you to certain events or give you special access. For example, you will need to contact the athletic director for sidelines access, just as you would ask for approval from the musical director to gain back-stage or dressing room access. **Do not assume anything.**
8. Technically, the press pass belongs to the group issuing the pass, not the photographer. Once you are no longer a staff photographer, you should return the pass to the adviser.
9. **Understand school and community policies** and comfort level regarding the use of potentially provocative photos. For example, some schools will not allow the publishing of swimmers' photos wearing only their competition uniform because "no shirt" violates school dress codes. This can also be said for sports fans who paint their bodies and stand in the front rows at football games.
10. Have a staff policy regarding the types of photos that are allowed in advertising. For example, in senior ads, will naked baby photos be allowed? How about hunting photos that show a dead animal or hunting gun?
11. **Always save your original images.**

STUDENT PHOTOGRAPHERS SHOULD BE RESPECTFUL OF THEIR SUBJECTS

6.6

NATIONAL PRESS PHOTOGRAPHERS ASSOCIATION CODE OF ETHICS*

PREAMBLE

The National Press Photographers Association (NPPA), a professional society that promotes the highest standards in visual journalism, acknowledges concern for every person's need both to be fully informed about public events and to be recognized as part of the world in which we live.

Visual journalists operate as trustees of the public. Our primary role is to report visually on the significant events and varied viewpoints in our common world. Our primary goal is the faithful and comprehensive depiction of the subject at hand. As visual journalists, we have the responsibility to document society and to preserve its history through images.

Photographic and video images can reveal great truths, expose wrongdoing and neglect, inspire hope and understanding and connect people around the globe through the language of visual understanding. Photographs can also cause great harm if they are callously intrusive or are manipulated.

This code is intended to promote the highest quality in all forms of visual journalism and to strengthen public confidence in the profession. It is also meant to serve as an educational tool both for those who practice and for those who appreciate photojournalism. To that end, The National Press Photographers Association sets forth the following.

CODE OF ETHICS

Visual journalists and those who manage visual news productions are accountable for upholding the following standards in their daily work:

1. Be accurate and comprehensive in the representation of subjects.
2. Resist being manipulated by staged photo opportunities.
3. Be complete and provide context when photographing or recording subjects. Avoid stereotyping individuals and groups. Recognize and work to avoid presenting one's own biases in the work.
4. Treat all subjects with respect and dignity. Give special consideration to vulnerable subjects and compassion to victims of crime or tragedy. Intrude on private moments of grief only when the public has an overriding and justifiable need to see.
5. While photographing subjects do not intentionally contribute to, alter, or seek to alter or influence events.
6. Editing should maintain the integrity of the photographic images' content and context. Do not manipulate images or add or alter sound in any way that can mislead viewers or misrepresent subjects.
7. Do not pay sources or subjects or reward them materially for information or participation.
8. Do not accept gifts, favors, or compensation from those who might seek to influence coverage.
9. Do not intentionally sabotage the efforts of other journalists.
10. Do not engage in harassing behavior of colleagues, subordinates or subjects and maintain the highest standards of behavior in all professional interactions.

IDEALLY, VISUAL JOURNALISTS SHOULD:

1. Strive to ensure that the public's business is conducted in public. Defend the rights of access for all journalists.
2. Think proactively, as a student of psychology, sociology, politics and art to develop a unique vision and presentation. Work with a voracious appetite for current events and contemporary visual media.
3. Strive for total and unrestricted access to subjects, recommend alternatives to shallow or rushed opportunities, seek a diversity of viewpoints, and work to show unpopular or unnoticed points of view.
4. Avoid political, civic and business involvements or other employment that compromise or give the appearance of compromising one's own journalistic independence.
5. Strive to be unobtrusive and humble in dealing with subjects.
6. Respect the integrity of the photographic moment.
7. Strive by example and influence to maintain the spirit and high standards expressed in this code. When confronted with situations in which the proper action is not clear, seek the counsel of those who exhibit the highest standards of the profession. Visual journalists should continuously study their craft and the ethics that guide it.

For a look at a specific case involving a high school student and administrators, go to:
http://commlawreview.org/Archives/v17i1/Rights_Still_Protected_at_Schoolhouse_Gate.pdf

For a look at guidelines for publishing visuals, including use of Creative Commons:
http://bradleywilsononline.net/from-bradley/guidelines-for-publishing-visualsfaa.gov

* References: Student Press Law Center, NPPA, Dr. Bradley Wilson.

PRO TIP

EIGHT (AND A HALF) THINGS TO KNOW ABOUT COPYRIGHT LAW!

One area that new journalists often get tripped up over is copyright. Violating copyright in the professional world can have expensive consequences. And knowing your rights as a photographer is very important to your ability to control what happens to your work. Here are eight basic points:

1. **Any creative work is likely to be subject to copyright law.** This includes articles, photographs, graphics, music, computer software, and more.
2. The owner of the copyright is generally the person who created the work, unless that person made the work as a part of their job, or signed a contract giving the copyright to someone else.
   - **This means you own the copyright to the photos you create,** unless you are an employee or signed it away. Absent a contractual agreement to the contrary, you own the copyright to photos you created while volunteering for the school paper or for a class assignment. That means you can control who is allowed to use it, publish it or make copies of it.
3. If a photo is subject to copyright, it typically cannot be used without the permission of the owner of the copyright. **This permission is called a "license."** When you give someone permission to use your photos, you are giving them a license. It's best to do this in writing, but it doesn't have to be in writing.
4. **Things not subject to copyright include:** works created by the U.S. Government (including photographs taken by federally employed photographers), court opinions, laws or ordinances, and things that have fallen out of the term of copyright protection. The term of copyright protection varies depending on who owns the work, but if a photo was created by an individual who retained the copyright, the copyright lasts for 70 years after the death of the photographer.
5. A license to use a work for one purpose does not include a license to use the work for another purpose. For example, if you license a photograph to go with an article, that license might not include the right to use the photograph in a later article. It's best to get the permission in writing and be clear about the limitations.
6. **One big exception to copyright is "fair use,"** which gives you a right to use a small portion of a work for certain purposes. It's a complicated analysis but a good example is a book review, where you quote a small portion of the book. The book reviewer is talking about the book, but not using enough of the book to be committing copyright infringement, and the purpose of the use is to discuss the book, not replace it on the market. That's fair use (of course, you probably already know that using someone else's book review is plagiarism, and will get you in big trouble).
7. **Photos posted on the internet and on social media are subject to copyright protection.** Many people mistakenly assume they are not. Don't get caught in this mistake! You can typically share within the social media platform, such as sharing a Facebook post if sharing is enabled, but you can't download pictures from social media and use them in your newspaper or elsewhere. At the same time, know that when you post your own photos to social media, you agree to terms and conditions that give the social media platform broad rights to use and re-use your photographs.
8. **It's actually very easy to ask permission to use someone's work. And you would want others to do the same for you.**

By Alicia Wagner Calzada
Deputy General Counsel
National Press Photographers Association

Alicia Wagner Calzada was a photojournalist for 20 years and is now the Deputy General Counsel for the National Press Photographers Association which promotes excellence in photojournalism and helps students and professionals understand their legal rights and responsibilities as they relate to photography.

She can be reached at advocacy@nppa.org.

ACTIVITY

YOU DECIDE

Discuss the following in groups and decide whether or not they are cases that involve any illegal activity on the part of the photographer or publication. Also decide how you would ethically handle each situation (whether you would shoot the photo, publish the photo, how you might crop it, etc.). Be prepared to share your views and rationale with the rest of the class.

1. You're on the student council and a good friend of the student council president. All the student council members go to eat at Hannah's Pizza one day after school to celebrate the end of a successful project. You get photos of a bunch of people eating and enjoying themselves, one of whom is of your friend. It just so happens that Hannah's Pizza is advertising with the school paper and you decide to run your friend's photo as part of the ad. Is there a problem with this? Why or why not?
2. An old man and woman are sitting on a bench in Central Park. When you take your camera out to take photos of them, they object. You take one anyway. *The New York Times* is running a feature article on the park and they want to buy your photo to use with the spread. Do you sell them the photo? Upon what will you base your decision? Can the couple sue you or the newspaper? Why or why not?
3. You come upon the scene of a car accident involving several students from your school. EMS and police are busy with the victims. You begin to take photos of the scene when a police officer asks you to help him with a victim. There are 10 other people around who aren't doing a thing except gawking. Do you put away your camera and help? Do you tell him to ask someone else so you can take photos? Any other alternatives? What if he asks you to stop taking photos?
4. You are shooting photos at the last boys soccer game of the season and the game gets really rough. As two players collide and hit the ground, one of them accidentally reveals a little "cheek" just as you happen to press the shutter release. Do you run the photo in your school publication? Why or why not?
5. You manage to be at the scene of one of the senior pranks. They are splashing paint all over people's backpacks. Do you take the photo? Do you run the photo in the newspaper? Why or why not and under what conditions? What would you do if you have a photo of one of the perpetrators throwing paint and the administration wants to see it?
6. You are doing a feature for your publication on students who look like famous people. In order to compare, you need to use photos of the famous people next to the students. You can easily find them on the internet. What do you need to know before you use them?

Check your answers on page 178.

REVIEW

KEY CONCEPTS

1. **You own the copyright** to the photos you take regardless of who owns the camera or where the photo was taken.
2. **An image taken from the internet should never be used without permission** or purchase, unless it is from Creative Commons or is in the public domain.
3. There are specific rules around drone usage. Understand what is allowed in your area.
4. It is unethical to manipulate an image beyond traditional techniques if it is being used for journalistic purposes.
5. While it is important to capture all aspects of a story, photographers should be respectful of the people they photograph, especially people in an emotional situation.
6. The Student Press Law Center can answer questions about photographer rights.

KEY TERMS

Composite Photo

Consent

Copyright

Creative Commons

Drone

Ethics

Fair Use

FAA
(Federal Aviation Administration)

First Amendment

Hazelwood v. Kuhlmeier

Image Manipulation

Photographic Integrity

Public Areas

Public Domain

Reasonable Expectation of Privacy

SPLC
(Student Press Law Center)

UAV
(Unmanned Aerial Vehicles)

YOU DECIDE: ANSWERS

1. **It is against the law** to use someone's likeness (a photo of them) in an ad without their written permission. You may, of course, use it along with a feature story or review about the restaurant, or if you get permission.
2. Because they are in a public place, you do not have to have their permission to take their photo. The couple would not likely win a law suit because they were in a public place, as were you, the photographer, so they did not have a reasonable expectation of privacy. While lawfully you could sell your photo to *The NY Times*, ethically, you should consider the reason for the couple's objections.
3. By law, you are allowed to take photos of an accident scene as long as you're on public property and aren't interfering with the police, EMS personnel or fire fighters as they work. The law also states you may not take photos of the inside of an ambulance once the doors are closed. You will have to decide ethically how to handle the request of the police officer under that specific circumstance.
4. Your publication should have a policy on publishing potentially "provocative" images. These might include boys with no shirts at athletic events, students kissing, etc. You should weigh the importance of each photo with any embarrassment the subjects might suffer. **Cropping might be an option as well.**
5. The moment you push the shutter release, the image is yours, regardless of whose equipment you are using (unless you have a contract with the publications adviser that says otherwise). You decide what you want to do with it regarding the administration. As far as running it in a publication, it definitely has news value and it happened in plain view of people at the school, so there should be no reason you can't lawfully publish it. You will have to decide ethically whether to run it. For free and specific information on your rights and responsibilities as a student journalist, **consult the Student Press Law Center.**
6. **You cannot copy and publish any photo you like from the internet.** One solution is to use something in the public domain. Another is to use one from Creative Commons, which has specific rules depending on the type. You can also contact the owner of the image to receive permission to use it. In some cases, you might have to actually purchase the image.

PHOTO TIPS FOR COMMON SCENARIOS

ICONS AND ABBREVIATIONS:
EVERYTHING YOU NEED AT A GLANCE

Scan this section for meanings of common camera abbreviations and icons. These may vary by manufacturer. Consult your manual for the specifics of your camera.

METERING

Sports, action. Sets a fast shutter speed to freeze action.

Landscapes, groups, deep depth of field.

Macro/Close-up. Close-up shots of small subjects.

Portraits, shallow depth of field.

Nighttime shots. Combines flash with slower shutter speed.

Flash attached or popped up.

Fully automatic. (A or AUTO on some cameras. Might have a box around the A or be a different color).

Camera makes all selections: aperture, shutter, flash, white balance, etc. This mode is not recommended unless an inexperienced student is using the camera.

Manual. Both aperture and shutter must be adjusted with aid from camera's light meter.

Program. Camera will determine aperture and shutter speed. The photographer will not be able to adjust aperture and shutter speed, but other camera variables may be adjusted.

Aperture Value (aperture priority). Photographer selects an aperture; camera determines corresponding shutter speeds.

Timed Value (shutter priority). Photographer selects shutter speed; camera provides corresponding aperture.

RESOLUTION

Large size file (recommended). Some cameras may use F or Fine.

Low compression (recommended).

NOTE: Cameras vary widely on designations for resolution and compression. Check your manual.

FOCUS

Autofocus. Lens determines distance to subject and sets focus.

Manual focus. Photographer must rotate lens barrel to find focus.

WHITE BALANCE

Auto White Balance. The camera program selects the optimum white balance.

Fluorescent lighting

Tungsten lighting

Daylight, bright sunlight

Shade

Overcast

Flash

NOTE: Your camera may also offer other white balance options or the ability to create a custom white balance. Check your manual.

OUTDOOR SPORTS: DAYLIGHT

These recommendations apply when photographing baseball, softball, football, soccer, track and field, cross country, tennis, golf, field hockey, lacrosse, rugby, beach volleyball and outdoor swimming.

CAMERA MODE

BASIC: Sports Icon or P (program).

INTERMEDIATE: Tv, S for shutter priority or Av, A for aperture priority.

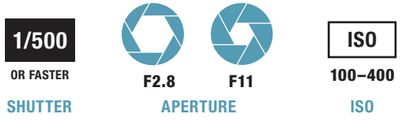
ADVANCED: M for manual.

SETTINGS

SHUTTER SPEED: 1/500 or faster.

APERTURE: Use f/2.8 for a shallow depth of field, or use a smaller aperture (f/11 or higher) for greater depth of field.

ISO: 100, 200 or 400. If you find because of overcast skies or less-intense light that your shutter speeds are too slow with the ISO at 100, switch to 200 or 400.



LENSES

Because of abundant light, your lens choices are unlimited. Telephoto zoom lenses like the 70–300 mm help magnify the action. The larger the lens, however, the faster your shutter speeds will need to be to avoid blurring.

For example, a 200 mm lens will blur the image at speeds slower than 1/200 second. The formula for determining the slowest shutter speed is: 1/(size of lens).

For sideline coverage, use a wide to medium lens, such as a 17–35 mm or 18–135 mm.

RESOLUTION AND COMPRESSION

L — Highest resolution **(L)**, lowest compression.

FOCUS

AF — Autofocus in most situations.

WHITE BALANCE

AWB — Auto white balance.

If your photos have a cold, blue cast, try switching to the daylight setting.

If you are shooting in shaded areas, try the shade setting.

If the skies are overcast, switch to the overcast, cloudy setting.

FLASH

Unnecessary in most situations. When you are close to the subject and there are harsh shadows, you might want to use the flash for fill.

NOTES

- Choosing the shutter priority mode **(Tv or S)** allows you to control blur.
- Choose fast shutter speeds to stop the action (1/500, 1/1000) and slow shutter speeds to create a motion blur (1/30, 1/60). Slower speeds can be used with the camera mounted on a tripod. Panning with the subject at slow shutter speeds will blur the background.
- Don't be afraid to experiment.
- If the light is particularly bright, you may need a lens hood to avoid lens flare. A polarizing lens filter will also help you reduce glare, especially with outdoor swimming events. When possible, keep the sun to your back or side.
- Check to see that there is a newly formatted card in the camera and you have extra batteries.

OUTDOOR SPORTS: UNDER STADIUM LIGHTS

These recommendations apply when photographing night time football, soccer, softball, baseball, lacrosse or rugby games.

CAMERA MODE

BASIC: Sports Icon or P (program).

INTERMEDIATE: Tv, S for shutter priority or Av, A for aperture priority.

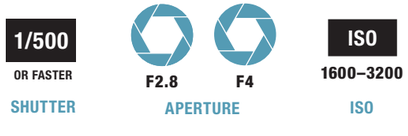
ADVANCED: M for manual.

SETTINGS

SHUTTER SPEED: 1/500 or faster.

APERTURE: Widest available, like f/2.8 or f/4. Then keep raising the ISO until you can obtain at least a 1/500 shutter speed or faster to stop action.

ISO: 1600–3200 (be aware that extremely high ISOs, such as 25,600, will cause the photo to look noisy).



LENSES

Long telephoto zoom lenses such as the 70–200 mm f/2.8 work for action on the field. The longer the lens, the faster your ISO must be to get faster shutter speeds.

For sideline coverage, use a wide to medium lens, such as a 17–35 mm or 18–135 mm.

RESOLUTION AND COMPRESSION

L — Highest resolution **(L)**, lowest compression.

FOCUS

AF — Autofocus in most situations.

MF — Switch to manual focus if poor lighting creates problems.

WHITE BALANCE

AWB — Auto white balance.

You may want to experiment with tungsten or fluorescent under some stadium lights.

FLASH

A flash may be used under certain circumstances (such as sideline crowd shots), but remember that most built-in flashes reach 20 to 30 feet at most. On a football field, that equals 10 yards or less. A dedicated flash may increase the distance to as far as 60 feet.

NOTES

- Consider using a monopod when shooting long games with heavy equipment. It will not eliminate blurring because of fast action, but it will help offset your fatigue.
- Position yourself so the action moves toward you to capture faces and have a better chance at stopping action.
- Check to see that there is a newly formatted card in the camera and you have extra batteries.

INDOOR SPORTS: COURTS OR ARENAS

These recommendations apply when photographing basketball, wrestling, volleyball, indoor swimming, gymnastics, ice skating or hockey.

CAMERA MODE

BASIC: Sports Icon or P (program).

INTERMEDIATE: Tv, S for shutter priority or Av, A for aperture priority.

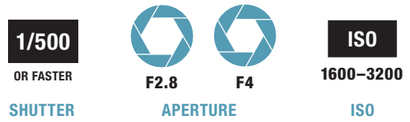
ADVANCED: M for manual.

SETTINGS

SHUTTER SPEED: 1/500 or faster.

APERTURE: Widest available, like f/2.8 or f/4. Then keep raising the ISO until you can obtain at least a 1/500 shutter speed or faster to stop action.

ISO: 1600–3200 (be aware that extremely high ISOs, such as 25,600, will cause the photo to look noisy).



LENSES

A long telephoto zoom lens such as the 70–200 mm f/2.8 works for action on the court/mat/ring to magnify the subjects.

Medium zoom lenses with wide apertures work as well.

Other options include prime 50 mm or 85 mm f/1.8 or f/2 lenses.

RESOLUTION AND COMPRESSION

Highest resolution **(L)**, lowest compression.

FOCUS

AF Autofocus in most situations.

MF Switch to manual focus if poor lighting creates problems.

WHITE BALANCE

AWB Auto white balance.

Many gymnasiums will have yellow floors and lighting that may cause color casting, usually yellow or green. **Test your images.**

Experiment with other settings to see if one works, such as fluorescent or tungsten.

If these do not work, you may have to create a custom white balance. Your camera manual is a good source for learning how to do this.

FLASH

A flash can be effective since you are closer to the action; however, it can also cause the scene to look flat, creating harsh shadows. Red eye can also be a problem. Often coaches and referees will not allow flash photography, especially in volleyball and basketball games.

If a flash is allowed, use common sense; your camera's flash could distract a player who is shooting a free throw. Flash photography in swimming can create additional problems because of the reflection from the water.

NOTES

- Position yourself where the action moves toward you to capture faces and increase your chance of stopping action.
- Check to see that there is a newly formatted card in camera and you have extra batteries.

INDOOR LOCATIONS: CAMPUS AND BEYOND

These recommendations apply when photographing people in classrooms, labs, hallways, offices, library, cafeteria, indoor field trips and museum visits.

CAMERA MODE

BASIC: Sports or Portrait Icon or P (program).

INTERMEDIATE: Tv, S for shutter priority or Av, A for aperture priority.

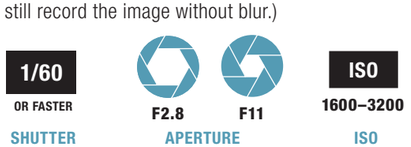
ADVANCED: M for manual.

SETTINGS

SHUTTER SPEED: 1/60 or faster.

APERTURE: Widest available, like f/2.8 or f/4. Then keep raising the ISO until you can obtain at least a 1/60 shutter speed or faster to stop action.

ISO: 1600 or higher. (The higher the ISO, the more "noise" the photo will have. Use the lowest possible to still record the image without blur.)



LENSES

Because of the tighter space and low light in most classrooms, you will need a normal or wide-angle lens, such as an 18–55 mm or 50 mm prime.

RESOLUTION AND COMPRESSION

Highest resolution **(L)**, lowest compression.

FOCUS

AF Autofocus in most situations.

When a subject is not in the center of the viewfinder, you may find the AF locking in on the background. If this happens, place subject in the center, press the shutter release button half way down until the focus locks in; keep focus locked as you reposition your subject in the viewfinder; press shutter.

MF Or switch to manual focus.

WHITE BALANCE

AWB Auto white balance.

Because classrooms are usually lit by fluorescent or tungsten lights, you may need to adjust the camera's white balance. This will balance the light so that yellow, green and red cast will be eliminated. Experiment with different white balance settings when shooting under artificial lighting.

FLASH

Since many of the situations in a classroom do not involve fast action, you can probably get the picture without using flash. If you do need one, it is best to mount a flash with a tilting head. This allows you to bounce the flash off of a ceiling or wall. Be aware that flashes bounced off colored walls will also color the image. Consider using a bounce card attachment or a diffusing filter over your flash lens. (See chapter 2 on flash.)

NOTES

- Choosing the aperture priority **(Av, A mode)** in low light situations allows you to better control the depth of field. If you want the background to fall out of focus, choose a wide aperture (such as f/2.8 or f/4).
- Check to see that there is a newly formatted card in camera and you have extra batteries.
- Don't be afraid to experiment with the settings.

OUTDOOR LOCATIONS: NON-SPORTS

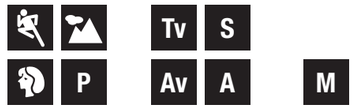
These recommendations apply when photographing people or scenes in courtyards, parks, streets, parking lots or outdoor field trips.

CAMERA MODE

BASIC: Sports, Landscape or Portrait Icon or P (program).

INTERMEDIATE: Tv, S for shutter priority or Av, A for aperture priority.

ADVANCED: M for manual.

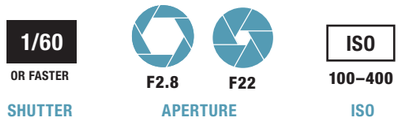


SETTINGS

SHUTTER SPEED: 1/60 minimum if the subject isn't moving. Adjust to a faster speed according to how fast the subject is moving.

APERTURE: Use f/2.8 for a shallow depth of field, or use a smaller aperture (f/11 or higher) for greater depth of field.

ISO: 100, 200 or 400. If you find because of overcast skies or less-intense light that your shutter speeds are too slow with the ISO at 100, switch to 200 or 400.



LENSES

Because of abundant light, your lens choices are unlimited. Medium zoom lenses like the 28–135 mm help magnify the subject. For additional storytelling coverage, use a wide lens, such as a 17–35 mm, or ultra-wide, such as a 10–17 mm.

RESOLUTION AND COMPRESSION

L — Highest resolution **(L)**, lowest compression.

FOCUS

AF — Autofocus in most situations.

When a subject is not in the center of the viewfinder, you may find the AF locking in on the background. If this happens, place subject in the center, press the shutter release button half way down until the focus locks in; keep focus locked as you reposition your subject in the viewfinder; press shutter.

MF — Or switch to manual focus.

WHITE BALANCE

AWB — Auto white balance.

If your photos have a cold, blue cast, try switching to the daylight setting.

If you are shooting in shaded areas, try the shade setting.

If the skies are overcast, try the cloudy setting.

FLASH

Unnecessary in most situations. When you are close to the subject and there are harsh shadows, you may want to use the flash for fill.

NOTES

- Choosing the shutter priority mode **(Tv or S)** in bright-light situations allows you to better control the motion/action.
- Choosing the aperture priority mode **(Av or A)** allows you to control the depth of field.
- If you want the subject to be sharp and the background to fall out of focus, choose a wide aperture (such as f/2.8, f/4).
- Choose a smaller aperture (f/16, f/22) to increase the depth of field so that more of the scene is in focus.
- Check to see that there is a newly formatted card in camera and you have extra batteries.

STAGE PERFORMANCES

Use these recommendations when photographing plays, musicals, concerts, talent shows and fashion shows.

CAMERA MODE

BASIC: Sports Icon or P (program).

INTERMEDIATE: Tv, S for shutter priority or Av, A for aperture priority.

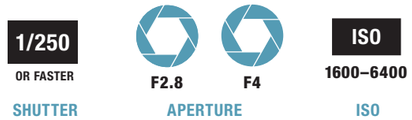
ADVANCED: M for manual.

SETTINGS

SHUTTER SPEED: 1/250 or faster.

APERTURE: Widest available, like f/2.8 or f/4. Then keep raising the ISO until you can obtain at least a 1/250 shutter speed or faster to stop action.

ISO: 1600, 3200, 6400. (Choose the lowest ISO that allows you to take photos without blurring. Be aware that extremely high ISOs, such as 25,600, will cause the photo to look noisy.)



LENSES

Long telephoto zoom lens such as the 70–200 mm f/2.8 work for musicals or dance recitals where action is a major consideration. It also magnifies the subjects so you can stand off stage.

Medium zoom lenses with wide apertures and prime 85 mm f/1.8 or f/2 lenses work well.

Many directors will allow photographers to stand on the stage during dress rehearsals. Take advantage of this if you can. The angles are much better and you can use shorter lenses.

RESOLUTION AND COMPRESSION

L — Highest resolution **(L)**, lowest compression.

FOCUS

AF — Autofocus in most situations.

MF — Switch to manual focus if poor lighting creates problems.

WHITE BALANCE

AWB — Auto white balance.

Flash if using flash.

Because many productions use harsh spotlights, you may want to experiment with white balance. You might want to adjust it to the daylight setting.

FLASH

There is rarely a time when you want to use flash for an event on a stage. Flashes are distracting for performers and audience members, and they interfere with the dramatic spotlighting. If you are shooting at a dress rehearsal, use flash only when all else fails. Sometimes a flash will also help fill in harsh shadows created by spotlights.

NOTES

- It's a good idea to get a copy of the program. This will be useful for writing captions, but do not rely entirely on this source. Be sure to check in advance with the director or sponsor in terms of access to certain areas of stage.
- Consult the director about copyright limitations. Many publishers prohibit photos taken during actual performances, limiting you to dress rehearsals.
- Check to see that there is a newly formatted card in camera and you have extra batteries.

SCHOOL EVENTS: LOW LIGHT

Use these recommendations when photographing dances, indoor homecoming activities, dimly lit ceremonies and initiations.

CAMERA MODE

BASIC: Sports Icon or P (program).

INTERMEDIATE: Tv, S for shutter priority or Av, A for aperture priority.

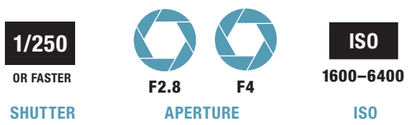
ADVANCED: M for manual.

SETTINGS

SHUTTER SPEED: 1/125 or faster. For fast action, use at least 1/500 to stop motion.

APERTURE: Widest available, like f/2.8 or f/4. Then keep raising the ISO until you can obtain at least a 1/500 shutter speed or faster to stop action.

ISO: 1600, 3200, 6400. **Hint:** Look for areas where spotlights illuminate your subjects to capture images.



LENSES

You will get best results with a medium zoom, wide angle zoom or prime lens. **Choose one with a low f-number,** such as f/2.8, so that it will let in the most light possible.

If the subject is too far away and you can't get close enough, use a telephoto zoom lens such as a 70–200 mm f/2.8.

RESOLUTION AND COMPRESSION

L — Highest resolution **(L)**, lowest compression.

FOCUS

MF — Manual focus. Since the light is dim, the autofocus function may not work.

AF — You may want to try autofocus in areas where light is better.

WHITE BALANCE

AWB — Auto white balance or use the correct corresponding mode for the lighting situation.

You may want to switch to flash if using flash.

FLASH

If you have to use a flash, avoid using the built-in flash because of its limitations. A mounted, dedicated flash with a tilting head is best. This allows you to bounce the flash off ceilings and walls when it is possible to do so. Consider using a bounce card attached to your flash to disperse the light and avoid harsh shadows. If you have a synch cord or off-camera shoe cord, you may also remove the flash and hold it higher above the camera to force the shadows lower behind the subjects. You may also want to use the red eye reduction feature of your camera if it is available.

NOTES

- Check to see that there is a newly formatted card in camera and you have extra batteries.

GROUP PHOTOS

Use these recommendations when photographing formal and informal groups.

CAMERA MODE

BASIC: Landscape Icon or P (program).

INTERMEDIATE: Tv, S for shutter priority or Av, A for aperture priority.

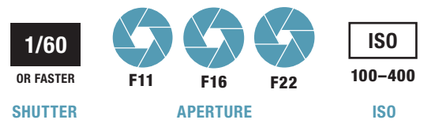
ADVANCED: M for manual.

SETTINGS

SHUTTER SPEED: 1/60 or faster.

APERTURE: f/11 to f/22 to ensure that every row is sharp.

ISO: 100, 200 or 400



LENSES

A wide-angle lens, such as a 17–35 mm or 18–50 mm is preferred for several reasons.

- First, it allows you to get the entire group without backing up too far.
- Second, you will be able to choose more narrow apertures (such as f/16 or f/22) to increase your depth of field, ensuring that all rows are in focus.

If the group is very large, try an even wider lens, such as a 10–20 mm. Do not use a fisheye lens as it will distort your image.

RESOLUTION AND COMPRESSION

L — Highest resolution **(L)**, lowest compression.

FOCUS

MF — Manual focus. If more than two rows, focus on a face in a middle row.

WHITE BALANCE

AWB — Auto white balance or use the correct corresponding mode for the lighting situation.

You may want to switch to flash if using flash.

FLASH

Unless the lighting situation is excellent, illuminating all faces, you will want to use a flash. You might want to use a diffusing filter on the flash to soften the light.

Avoid using your built-in flash as it will likely light your subjects unevenly.

NOTES

- It is important that you use an aperture that will ensure all faces in the group are sharp. This is likely f/11, f/16 or f/22. **You may want to use a tripod.**
- Be sure that your groups are arranged in orderly rows with all faces clearly showing. Avoid groups of more than 35–40 people. A band, for example, can be broken into sections: percussion, reeds and brass. Larger clubs can be divided into grade levels. Often the group's adviser can suggest a logical method for breaking the group into smaller units.
- Check to see that there is a newly formatted card in camera and you have extra batteries.

PORTRAITS

Use these recommendations when photographing formal portraits, informal portraits, environmental portraits and headshots.

CAMERA MODE

BASIC: Portrait Icon or P (program).

INTERMEDIATE: Tv, S for shutter priority or Av, A for aperture priority.

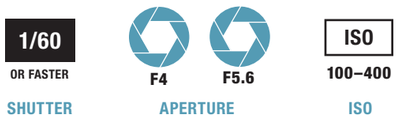
ADVANCED: M for manual.

SETTINGS

SHUTTER SPEED: 1/60 or faster.

APERTURE: f/4, f/5.6 (depending upon the range of focus desired).

ISO: 100, 200 or 400



LENSES

A medium telephoto lens (80–135 mm) will produce the best results. These lenses make it easier to drop the background out of focus. Avoid wide-angle lenses, as they will distort the face as you get in closer.

RESOLUTION AND COMPRESSION

Highest resolution **(L)**, lowest compression.

FOCUS

Autofocus.

WHITE BALANCE

Auto white balance for most cases.

The mode will depend on your light source. Do some reconnaissance prior to the shoot and find a place where the light enhances the image.

If you must shoot under artificial light, use a fluorescent or tungsten setting.

FLASH

If a flash is necessary because of poor existing light, use an attached bounce card or a diffusing filter over the flash lens. Portraits taken in the harsh sunlight can be improved by using fill flash. Although the result is not as natural, it will eliminate the deep shadows around the eyes and nose.

NOTES

- Choosing the **Av metering mode** is particularly important to control depth of field. A combination of a wide aperture (such as f/2.8, f/4) and a medium-to-long telephoto lens (such as 85 mm to 135 mm) will allow you to achieve a shallow depth of field which will blur the background.
- A tripod is also a good idea if you are shooting formal indoor portraits.
- Check to see that there is a newly formatted card in camera and you have extra batteries.

GLOSSARY/INDEX

A

ACADEMICS p.132
Curriculum-related experiences; excludes extra-curricular organizations and events.

ACTION SHOT p.56, 57, 76
A candid or "non-posed" photograph that is taken at a moment of peak motion during the course of an event or activity.

ADDITIVE COLOR p.91
Property of light by which all colors are created by some combination of red, blue, and green light. With additive color, combining all colors of light equally produces white light.

AMBIENT LIGHT p.22, 80, 103
Any natural or artificial light that is already present in a scene; refers to room lighting, sunlight, streetlights, or any combination thereof.

ANGLE OF VIEW (AOV)
The width of a scene that can be captured by any given lens; "wide" lenses have a wide AOV, while "telephoto" lenses have a narrow AOV.

ANGLE (1) p.29, 133, 148
A specific and narrowly defined perspective on a broad topic that a journalist must find in order to capture a compelling story.

ANGLE (2) p.13, 20, 138, 139
The perspective a photographer takes when composing a photo. Unique angles include bird's-eye view and worm's-eye view.

APERTURE PRIORITY (AV OR A)
p.81, 98, 110, 180
An exposure mode in which the photographer sets the f-stop manually and the camera automatically adjusts shutter speed for a correct exposure.

APERTURE (F-STOP) p.72, 74, 83, 180
The size of the opening (sometimes called an "iris" or "diaphragm") in a lens that allows light to enter; measured in f-stops.

ARTIFACT
An unintentional error or "glitch" in an image, usually the result of too much JPEG compression or a write error between the camera and SD card.

ARTIFICIAL LIGHT p.185, 190
Light from sources other than the sun, such as incandescent bulbs, fluorescent lights or a flash unit; not to be confused with ambient light, which may or may not include artificial light sources.

ASSIGNMENT SHEETS p.131-133
Sheets written by page editors that detail a photographer's assignment. Content may include: topic, event, angle, and a list of specific shots needed.

AUTO EXPOSURE BRACKETING (AEB) p.88
Camera function that takes three or more images in rapid succession at different exposure levels. Useful in blending exposures during post-processing.

AUTOFOCUS p.89, 90
A system inside cameras and lenses that adjusts focus automatically. Cameras can be set for single autofocus (when half-pressing the shutter button, the lens focuses and holds on a single point); or continuous autofocus (the lens refocuses constantly as the photographer reframes the image while half-pressing the shutter button).

B

BACKGROUND p.10, 15, 17
The area behind the main subject or center of interest in an image or scene. To keep a cluttered background from becoming distracting, a photographer can use a wide aperture or telephoto lens to reduce depth of field, or change the camera angle.

BACKLIGHTING p.71
When the main light source comes from behind the subject and shines in the direction of the camera. Backlighting is used to produce silhouettes, but can also produce incorrect exposures when photographer fails to compensate for it.

BEAT p.111, 132
A method of story-gathering where a journalist maintains a continuous relationship with a person, office, club, academic department, committee or team, and makes regular inquiries; a journalist will generally "cover their beat" two times a week.

BIRD'S-EYE VIEW p.13
An elevated perspective that looks down on a scene from a higher angle. Can make the subject appear smaller or less important, literally "looked down on."

BLEED p.147
Extending an image beyond the outside edge of a page, or across the gutter into both pages, with the intent of having no white space outside the image on the page when printed.

BLENDED COVERAGE
An approach in which spreads are built around topics with coverage coming from all traditional content areas: student life, academics, sports and clubs.

BLUR p.16
A characteristic of a background or subject that is deliberately out of focus achieved by using a slow shutter speed or shallow depth of field.

BOUNCE CARD p.100, 102
A small white plastic or paper card, either attached to the flash head of an electronic flash unit or built in as a flip-out panel, used to redirect light.

BOUNCE FLASH p.100, 101
Indirect lighting that results when the main source of illumination is reflected off a surface, such as a ceiling or a wall, instead of being aimed directly at the subject.

BRACKETING p.88
Making a series of images of the same scene at different exposure settings. Typically used to ensure at least one usable exposure in the set, as well as for exposure blending in post processing, such as creating an HDR image.

BRIGHTNESS p.85
The general intensity of light in a scene.

BUFFER p.44, 82
A camera's temporary memory unit where image data is stored before it can be written to an SD card.

BULB MODE p.75
The camera's shutter stays open, allowing light to flood the sensor, for as long as the shutter button is depressed. Used for long-exposure or "time lapse" photography.

BURNING p.145, 168
A technique used to darken areas of an image with editing software.

C

CAMERA SHAKE p.78
Unintentional camera movement that causes blurring in an image. Camera shake occurs when the shutter speed is too slow.

CANDID p.126
A non-posed photograph, usually made when a subject is unaware a photograph is being taken.

CAPTION p.140, 169
Text blocks accompanying photographs that add editorial information about the image or group of images. Captions answer readers' questions (who, what, when, where, why and how) about the people, the action and/or reaction in a photograph.

CARD READER p.64, 152
A device capable of reading photo-storage cards (SD or CF) and transferring image data to a computer.

CENTER OF VISUAL INTEREST (CVI) p.10
The point in a photograph where the viewer's eye is drawn. Photographers must ensure that the CVI is the intended subject of the photograph.

CHRONOLOGICAL COVERAGE p.131
A coverage approach that involves using a time element to organize content. Within the time-based section, traditional content areas such as student life, academics, sports and clubs are covered over the course of multiple seasons and semesters.

CLIPPED HIGHLIGHTS
Areas of an image that are over-exposed beyond the dynamic range of the sensor, shown as pure white with no detail.

CLOSE-UP PHOTOGRAPH p.53, 138, 180
(sometimes called a macro image)
Taken at close range and shows the details of the subject.

CLUBS p.117, 119
The activities of school groups, emphasizing the value of membership and experiences.

CMYK p.91
A method of defining all possible printed colors as percentages of cyan, magenta, yellow and key/black. CMYK is commonly used for process color printing.

COLOR BALANCE p.91
The ability to reproduce colors as the photographer sees them. The correct balance of red, blue and green that makes up the color of the photo so it looks true-to-life when reproduced.

COLOR TEMPERATURE p.91, 95
A measurement of the dominant color of a light source. Color temperature is measured in degrees Kelvin (K), and commonly ranges from 3,000K (warm-colored candle flame), to 5,200K (white daylight), to 6,000K (cool light bulbs).

COMPACT FLASH (CF) p.44
A flash memory, mass storage device used mainly in portable electronic devices (see memory cards).

COMPOSITION p.10
The careful arrangement of the elements in a photograph, used to emphasize certain subjects over others and control the Center of Visual Interest.

COMPRESSION p.50
The appearance that the subject and background are much closer together; sometimes called "depth compression" or "lens compression." This is achieved using telephoto lenses and is desired when making most portraits.

CONSTANT (FIXED) APERTURE LENSES
p.52, 116
Zoom lenses that have the same maximum aperture throughout the entire range of available focal lengths. Fixed aperture lenses are heavier and more expensive than variable aperture lenses, but are more desirable because they perform better in low light settings.

CONTACT SHEET p.142–143
Thumbnail printouts of images saved on the computer for reference while styling or editing a publication.

CONTRAST p.168
The range of different tones between the light and dark areas of an image.

COPYRIGHT p.162–163, 174–175
The legal rights to alter, reproduce, publish, broadcast and sell original literary, dramatic, musical or artistic works, including photographs.

COVERAGE p.25, 108, 121
The complete, balanced, relevant and dynamic verbal and visual content used to tell a story.

CROP FACTOR p.39
The dimensions of a camera's imaging area compared to 35 mm film negative or full frame digital sensor. Most crop sensors (APS-C or DX) carry a 1.5x crop factor as compared to a full frame sensor. Crop factors are used to calculate effective focal lengths of lenses on different sensor types. For example, an APS-C sensor carries a 1.5x crop factor, so a 35 mm lens on a full frame sensor will behave closer to a 50 mm lens on a crop sensor (35 mm x 1.5 = 52.5 mm).

CROPPING p.144-145
To eliminate part of an image while composing in the viewfinder or during post-production for the purpose of improving composition.

CURVES p.12
Shapes and lines that occur naturally in a scene that can be used as compositional elements.

CUTOUT BACKGROUND (COB) p.168
A photo treatment in which the background has been cut away or erased from the subject.

D

DEPTH OF FIELD p.74, 81
The area in front of and behind the subject that is in acceptable focus. Depth of field is controlled by the lens aperture, lens focal length and distance of the camera from the subject.

DIFFUSER p.97, 99, 102
A white plastic or fabric cover in front of a flash unit that softens the light.

DIGITAL SINGLE LENS REFLEX (DSLR) CAMERA p.38
A camera that enables the photographer to see the subject in the viewfinder through the same lens that presents the image to the film or sensor. This is achieved through the use of a prism that directs light to the sensor and viewfinder simultaneously.

DIGITAL ZOOM p.37
The process that allows digital cameras to zoom in on a subject without a zoom lens. Digital zooming captures less data and produces a grainy image that is inferior to an optical zoom image.

DIOPTER CORRECTION CONTROL p.40
A tiny knob on the viewfinder of some cameras that adjusts the focus of the eyepiece to compensate for near or far-sightedness of the photographer.

DIOPTER p.40
An optical term used to indicate the strength or magnifying power of a close-up lens.

DISTORTION p.50, 53
Warping or aberrations in an image caused by the lens itself, usually from wide-angle or fisheye lenses.

DOCK
A device that links a camera or camera component to a computer or printer.

DODGING p.145, 168
A technique used to lighten shadow areas of an image with editing software.

DOMINANT p.130, 146
The largest photo in a collection of images that acts as a focal point. The principle of dominance in design maintains that an image two to three times larger than any other creates a strong visual impact. The picture's storytelling content and technical quality should justify its use as a dominant image.

DRONE p.165–167
An unmanned aerial vehicle (UAV) controlled by a human operator on the ground. Drones are often fitted with a camera to record still photos or video from the air. The Federal Aviation Administration regulates the use of drones, and schools may also have their own rules for their use on campus.

DYNAMIC RANGE
The full range of tonal information the camera is able to capture, measured in stops. A sensor with a higher dynamic range can capture more highlight and shadow detail between pure black and pure white.

E

ENVIRONMENTAL PORTRAIT p.121
Portrait of a subject in their work or life environment, including details that give the viewer extra information about the subject.

ELECTRONIC FILE SYSTEM p.142
An organizational system for photos. An electronic file system, with folders for all spread topics, clubs, teams, academic areas and edited pictures, is the most efficient way to organize photos.

EQUIVALENT EXPOSURES p.85
Different combinations of camera settings (ISO, f-stop and shutter speed) that all equate to the same exposure value.

EVENT p.108
A planned activity that might be photographed and reported in the publication. Interesting stories result when event coverage focuses on the people organizing and experiencing the event.

EXPOSURE COMPENSATION p.82, 98
A way to force the camera to make your photos darker or brighter to the degree that the photographer specifies. Exposure Compensation allows you to adjust the camera's auto exposure brighter or darker in 1/3-stop increments, up to two full stops.

EXPOSURE VALUE (EV) p.85
A number that represents a combination of a camera's shutter speed, f-stop and ISO; all combinations that yield the same exposure have the same EV.

EXPOSURE p.72, 79–85
The amount of light reaching the film or sensor for a selected time. The camera's shutter speed, ISO and f-stop settings control the final exposure value.

F

F-STOP (APERTURE) p.74
A number that indicates the size of the opening (iris) of a lens. The smaller the f-stop or f-number, the larger the aperture.

FAIR USE p.163, 175
A legal doctrine that grants users limited and reasonable use of an image or other work that doesn't interfere with the owner's rights. An example of fair use is when a high school publication reviews a book, movie or piece of technology and uses the cover of the book or a movie poster from the internet as part of the review.

FAST LENS p.51
A lens with a wide aperture, such as f/2.8, that remains fixed or constant at any focal length to accommodate most low light situations. Commonly used fast lenses include the 50 mm f/1.8 and the 70–200 mm f/2.8.

FILL THE FRAME p.14
A well-cropped image that leaves no "wasted space."

FILL FLASH p.100
Light from a flash unit used to fill in shadows created by natural or available light. Fill flash is commonly used to fill in shadows created by noon-day sun conditions.

FILTER p.54
A lens fitting that changes the color or intensity of the light passing through it.

FISHEYE LENS p.53
An ultra wide-angle lens that produces visual distortion intended to create an extremely wide angle of view. The typical fisheye focal length range is from 10 mm to 17 mm.

FIXED FOCAL LENGTH LENS p.51
A lens that does not zoom (see prime lens).

FLASH EXPOSURE COMPENSATION p.98
Setting that adjusts a camera's automatic flash power, resulting in a different exposure.

FLASH p.98–103
A bright and brief source of artificial light, typically coming from an electronic flash unit, used to illuminate a scene or subject.

FLUORESCENT p.92
One type of artificial light created with gas-filled fluorescent tubes. A special filter or white balance settings must be used to compensate for fluorescent color shifts.

FOCAL LENGTH p.48, 50
The distance between the optical center of a lens to the sensor (or imaging plane), measured in millimeters.

FOCUS p.89–90
The area of an image where the subject is sharply defined. The plane of acceptable focus is defined by the lens' depth of field.

FOREGROUND p.17, 23, 139
The area in front of the main subject or center of interest.

FORMAT (1) p.11
The horizontal or vertical orientation of a photograph. A variety in format creates interest in a page layout.

FORMAT (2) p.46–47
A set of standard characteristics for digital image and video files. Formats differ in file size, image quality, and readability by different programs.

FORMAT (3) p.44–45
To reset a memory card for use with a specific camera make and model. Images can be recovered from formatted memory cards with special software.

FRAMING p.15
A composition technique where the foreground or background objects in the picture form a natural frame around the main subject.

FRONT LIGHT p.70, 102
The main source of light, often called "fill light," that is placed in front of a subject near the camera.

G

GEOMETRIC SHAPES p.12
Basic geometric patterns like lines, circles, squares, curves and triangles to add structure or organization and convey the energy and feeling of an image.

GOLDEN HOUR p.70
The time before sunset and after sunrise in which the sun emits warm-toned, directional light.

GRAIN p.72, 144
A pebble-like texture, particularly visible in dark areas of prints. Grain tends to be greater with faster ISO speeds (3200 or greater). Grain on digital sensors is referred to as "noise."

GRAY CARD p.94
A card with a standardized 18-percent reflectance of skin tones. Used with a light meter as a way to produce consistent image exposure and/or color.

H

HARD LIGHT p.69, 96
Light that casts strong, well-defined shadows. Produced by relatively small light sources.

HIGHLIGHTS p.69, 84, 145
The brightest parts of an image.

HISTOGRAM p.84
A chart appearing in a camera display or in image editing software that shows the relationship and relative intensity of tones in an image. A histogram typically looks like a curved graph with one or more dominant peaks.

HORIZONTAL p.26
Parallel to the horizon; at right angles to the vertical.

HOT SHOE p.38
Standard mount on a camera for shoe-mount flash units. The hot shoe makes an electrical connection between the flash and the camera's shutter release systems.

I

IMAGE STABILIZATION p.61
A system built into some lenses that shifts the lens elements to compensate for small camera movements.

INTERPOLATION
The insertion of pixels into a digital image, based on existing data, to resize a photograph to give an apparent increase in resolution.

INTERVIEW p.126, 140
An in-person meeting of two or more people, wherein the interviewer asks a series of pre-prepared questions.

ISO p.72
A system of numbers determined by the International Organization for Standardization that indicates the relative sensitivity of an optical sensor to light.

J

JPEG [JOINT PHOTOGRAPHIC EXPERTS GROUP] p.46
A data-compression technique that reduces image file sizes by discarding information. On many digital cameras, the photographer can choose between Standard, Fine, Super Fine, and other quality settings.

K

KEY LIGHT
The main light used to illuminate a subject, particularly in portraiture.

L

LAYERS p.17
The foreground, middle ground and background of an image.

LCD MONITOR p.38, 90
A viewing screen on a digital camera or computer monitor utilizing liquid crystal display technology to display images and information.

LEADING LINES p.12
A composition technique using natural lines to direct attention to the center of visual interest in a photograph.

LENS COLLAR p.57
A lens accessory that allows the lens to be mounted to a tripod.

LENS FLARE p.55
A phenomenon wherein light is visibly scattered across a lens element, often in response to a bright, direct light. Lens flares are often used stylistically, but can produce an undesirable effect if not controlled with a lens hood.

LENS HOOD p.55
A metal or plastic shade used to block extraneous light coming from outside the intended picture area.

LENS p.48–57
An optical piece of glass designed to focus rays of light to produce an image on film, photographic paper, sensor or screen. Adjustable lenses feature focusing and f-stop controls. Arrays of multiple lens elements are also collectively referred to as "a lens."

LIGHT METER p.83, 86-88
A device that reads the intensity of light falling on or reflected by a subject. A light meter can be a hand-held device or built into a camera.

LIGHTING p.91–95
The illumination that is present in a scene and impacts composition and exposure.

LONG SHOT p.139
Usually captured with a telephoto lens, this type of image zeros in on individuals, details and subtle expressions from far away. Long shots are usually used to capture candid moments.

LOSSLESS COMPRESSION p.46–47
An image compression method where no data is discarded when creating a file, and no data is lost when saving the file.

LOSSY COMPRESSION p.46–47
Each time an image is edited and saved, some of the information and quality is lost.

M

MACRO LENS p.53
A specialized lens designed to focus closer than standard lenses, creating large and detailed close-up images of small subjects. Telephoto macro lenses work great for portraits as well.

MANUAL EXPOSURE p.88–85
An exposure (f-stop, shutter speed and ISO) set manually by the photographer. Also refers to exposure mode setting (M).

MATRIX METERING p.86
An elaborate exposure calculation system used in digital cameras that looks at many different segments of an image to determine the brightest and darkest portions.

MAXIMUM SYNC SPEED p.102
The fastest shutter speed that will trigger and correctly expose the entire sensor to a flash.

MEDIUM SHOT p.139
A camera angle composed from a medium distance. Also known as a waist-up shot, this image shows things in appropriate settings with environment as context.

MEGAPIXEL p.38
A measurement of the resolution of a digital camera's sensor and the resulting image. One megapixel equates to one million total pixels.

MEMORY CARD p.44–45
A small, reusable device that is inserted into a digital camera to electronically record and temporarily store digital images.

METADATA p.143
The technical data of an image stored inside the image file itself, or alongside it, typically as an .xmp file. Metadata contains a record of camera settings and copyright information.

MIDTONES
The tones between the shadows and highlights of an image.

MIRRORLESS CAMERAS p.40
Cameras designed without a mirror, pentaprism, or optical viewfinder. Mirrorless camera bodies are smaller and lighter, and use an electronic viewfinder to simulate the image the sensor will capture.

MONOPOD p.57
An adjustable length pole that attaches to a camera or lens to provide stability and support, especially when using long lenses.

MOTION BLUR p.75, 82
The apparent streaking of rapidly moving objects in a still image or a sequence of images. This results due to rapid movement of the subject or slow shutter speed.

MOTOR DRIVE
A mechanism built into the camera that activates the shutter. Motor drive settings can be configured to trigger a set number of shots per second when the shutter button or release is continually pressed.

N

NATURAL LIGHT
Existing light, usually sunlight, not supplemented with artificial light.

NOISE p.72, 144
Undesirable patterns or grain created electronically in dark areas of a digital photograph. Noise is usually created when a long exposure is used or when the digital camera's ISO is set to a high number (3200 or greater).

O

OPTICAL ZOOM
Adjusting the focal length by turning the zoom ring on the lens barrel. Optical zoom is superior to digital zoom, which involves magnifying the digital image and cropping the outer edges of the scene and can reduce image quality greatly.

OVER-EXPOSURE p.84
Excessive exposure caused by too much light reaching the sensor, resulting in a bright image with clipped (washed out) highlights.

P

PAN p.16, 76
Moving the camera slightly to follow a subject traveling across the plane of vision. The moving object remains in the same relative position in the viewfinder. Panning can be used to blur the background while the moving subject remains sharply focused.

PEAK ACTION
The moment of maximum expression, emotion, interaction, or impact of a certain action or activity.

PEOPLE
A content section that records school populations by providing portraits of students, faculty and staff. Features are often provided on portrait panel pages to expand coverage.

PHOTO DEADLINE CHECKLIST p.152–153
A checklist for a photographer to know when specific photos are due for certain spreads or pages.

PHOTO ILLUSTRATION p.169
An image that is edited to combine multiple images, add or remove objects, or distort the reality of the original image for artistic purposes. Images edited in this way should be clearly labeled as a photo illustration.

PHOTOJOURNALISM p.25, 168
The art of telling a visual story with photographs. Photojournalists capture life as it happens, with an emphasis on emotion and motion. Photojournalistic images are usually not staged or posed, except in the case of environmental portraits.

PHOTO STORY p.26–27, 29
A series of images that tell a coherent story; a photo essay.

PIXEL p.37, 84, 150
"Picture element;" the smallest visible unit of a digital image, represented by one block of solid color.

PIXELATED p.150
The appearance of a digital image whose individual pixels are visible; usually the result of low resolution.

POINT-AND-SHOOT CAMERA p.35
An automatic, compact camera designed primarily for simple operation. Most use focus-free lenses or autofocus, automatic exposure options, and built-in flash units.

PPI (PIXELS PER INCH)
The number of pixels that can be displayed in a line that is one-inch long. Frequently used to indicate print image resolution. Print images should be 300ppi.

PREFOCUS
The act of focusing on a specific place so the photographer can quickly fire when the subject or action reaches that place; e.g., focusing on home plate in anticipation of a runner sliding in.

PRIME LENS p.51
A lens with a fixed focal length that does not zoom, such as the 50 mm "nifty 50." Prime lenses are easier to manufacture with a larger maximum aperture, which improves performance in low light. Prime lenses also contain fewer lens elements, which improves image quality and sharpness.

PUBLIC SPACE p.160
Any place photographers can freely take photos without restriction, such as public parks, streets, sidewalks.

R

RAW FORMAT p.46
A digital image file format that does not compress or alter image data captured by the camera's image sensor. RAW images are very large and must be processed by a special software program.

REACTION SHOT p.25, 148
A photograph that captures the subject's reaction to an action or event. One example would be football players celebrating on the sidelines following a critical touchdown.

RECONNAISSANCE p.126
A mission to observe and obtain information about the activities and resources of a subject or an event.

RED EYE p.184, 188
An effect from on-camera flashes that makes a person's eyes appear red; caused by the direct reflection of the flash off of the retina back into the camera.

REFLECTORS p.96
Reflectors are simply flat reflective surfaces designed to bounce light onto a subject where it does not naturally fall.

REPETITION OF FORM p.12
Two or more subjects or elements repeating in a scene. An example is dancers on stage all performing the same move.

REPORTER'S NOTEBOOK p.140
A small notebook to jot down vital information for captions or the photographer's own records.

RESOLUTION p.38, 144, 150
The number of total pixels in an image.

RGB p.91
A color reproduction method that uses combinations of red, green and blue pixels to recreate virtually all of the colors in the visible spectrum.

RULE OF THIRDS p.11
A composition technique that places the main subject off-center in a photograph. The photographer mentally divides the scene into thirds, both horizontally and vertically, and then places the main subject along one of the imaginary lines or where two of the lines intersect.

S

SATURATION p.37
A measure of the purity of color; the lower the saturation, the more diluted the color is with white or gray.

SECURE DIGITAL (SD) p.44
A non-volatile memory card used in portable devices.

SELECTIVE FOCUS p.16
Using a shallow depth of field to creatively place parts of an image out of focus.

SHADOWS p.16, 69, 97
The dark areas of a scene or image where little detail exists.

SHUTTER LAG p.38
The delay between when the shutter is triggered and when the photograph is actually recorded. This is rare when using DSLRs, but might be an issue with point-and-shoot cameras or cell phone cameras.

SHUTTER PRIORITY (Tv) p.82, 180
An exposure mode in which the photographer sets the shutter speed and the camera automatically determines the f-stop.

SHUTTER RELEASE p.11, 162
A button or trigger on the camera that opens the shutter and records the image.

SHUTTER SPEED p.75–78
Indicates the length of time that the sensor is exposed to light through the gap in the moving shutter curtains. Usually measured in fractions of a second.

SHUTTER p.75
A device built into the lens or camera that regulates the length of time that light can reach the film or sensor.

SIDE LIGHTING p.70, 100
When the main source of light is placed to the side of the subject, perpendicular to the camera, producing shadows and highlights that show contours and detail.

SILHOUETTE p.71
An image that results when an exposure reading is made of the backlighting and the subject is under-exposed. The subject is dark with few or no details and defined by its outline or profile.

SIMPLICITY p.17
Omitting unnecessary elements in an image to avoid distraction from the center of visual interest.

SOFT LIGHT p.69
Light that tends to wrap around objects, resulting in diffused shadows with soft edges. Produced by relatively larger light sources.

SPECULAR HIGHLIGHT
Small, bright spots in an image caused by reflection of harsh light sources.

SPORTS p.112–114, 182–184
Covers interscholastic competition (teams and individual sports) and personal athletic activities in which students are involved.

STAIR-STEPPING
A jagged reproduction of a line or similar boundary that is, in reality, smooth.

STOP p.72
A unit of measuring changes in exposure. Adjusting a setting by one stop means doubling (or halving) the amount of light in the exposure. ISO, aperture, and shutter speed are all adjusted in one stop increments.

For example, f/8 is one stop wider than f/11, and will double the amount of light entering the camera. 1/200 second is one stop faster than 1/100 second, and will halve the amount of light entering the camera.

STOP ACTION p.110
Using a fast shutter speed to freeze a subject's movement without blur.

STUDENT LIFE
Covers activities and lifestyles in and out of school that directly affects the personal lives of students.

STUDENT PRESS LAW CENTER (SPLC)
p.163, 166
The Student Press Law Center is an advocate for student First Amendment rights, for freedom of online speech, and for open government on campus. The nonprofit, nonpartisan SPLC provides information, training and legal assistance at no charge to student journalists and the educators who work with them. Splc.org

SYNC CORD p.102
A cable used to precisely trigger an off-camera flash.

T

TELEPHOTO LENS p.48–50, 54
A lens that has a greater focal length and narrower angle of view than a normal or wide-angle lens. Telephoto and zoom lenses make far-away subjects appear closer and are useful for capturing action at sporting events.

TEMPLATE p.134, 156
A preset format for a document or file, used so that the format does not have to be recreated each time it is used.

TINT p. 91–92
A shade or variety of color, usually varying between green and magenta in editing software.

TOPIC p.111, 133
The general scope of the content covered in photos and copy. A topic is often too general to guide photographers and reporters. Specific angles facilitate meaningful storytelling within a given topic.

TOP LIGHT p.70
A variation on side lighting, top light can be used intentionally for a dramatic portrait.

TRADITIONAL SECTIONS
An approach to organizing yearbook content in five common sections: student life, academics, sports, clubs and people.

TRIPOD p.57
A three-legged support used to steady the camera, especially at slow shutter speeds.

TTL (THROUGH THE LENS) p.100
The general system used by the camera to automatically determine focus and exposure, especially when using flashes.

U

UNDER-EXPOSURE p.84
A condition when not enough light reaches the sensor, producing a dark image.

UNMANNED AERIAL VEHICLES (UAV)
p.165–167
See Drones.

UNSHARP MASK p.145
A technique used to increase the sharpness of an image by increasing the contrast between adjacent pixels. This is achieved by using image-editing software.

V

VARIABLE APERTURE LENS p.52
If a lens has a range of numbers written after the focal length, for example 1:f/3.5–f/5.6, it is a variable aperture lens. This means the widest aperture (lowest f- number) is different at different focal lengths. So an 18–55 mm lens with a f/3.5–f/5.6 range means if you zoom in to 55 mm, the lowest f-stop you can access is f/5.6.

These lenses are often lighter, smaller and less expensive than their constant or fixed aperture counterparts. Zoom lenses reduce the maximum aperture as the lens is zoomed in.

For example, the standard 18–55 mm kit lens has a variable maximum aperture of f/3.5 to f/5.6 (written as 1:3.5–5.6). At 18 mm, the maximum aperture is f/3.5, but as the lens is zoomed in to 55 mm, the maximum aperture is forced down to f/5.6, reducing performance in low light.

VERTICAL p.11, 26
Perpendicular to a horizontal plane; refers to portrait orientation, where the image is taller than it is wide.

VIEWFINDER p.38
The device in a camera through which the photographer looks to focus and frame the image.

VISUAL VARIETY p.26–27
A collection of images covering the before, during and after of an event, with vertical and horizontal images that include single subject, two-three subjects and groups of subjects in wide, medium and close-up shots.

W

WASHED OUT p.100
A portion of an image where facial features or other details are lost when too much light floods the sensor; often referred to as “over-exposed” or “clipped” highlights.

WHITE BALANCE p.91–95, 181
The calibration of a digital camera to the color temperature of the dominant light source. Can be set to automatic or manual control for sunlight/daylight, cloudy/overcast, flash, incandescent or fluorescent light.

WIDE-ANGLE LENS p.48, 54
A lens that has a shorter focal length and wider angle of view than a normal or telephoto lens. Usually in the 15 mm to 24 mm focal length range. A wide-angle lens will produce a smaller subject image than a normal or telephoto lens.

WIDE-ANGLE SHOT p.139
A shot with a greater horizontal view of a scene and often a greater depth of field.

WORM’S-EYE VIEW p.13
A camera angle used where the photographer is below the subject shooting upward. A perspective from a low point-of-view looking up toward the subject. Has the effect of making the subject look powerful or larger-than-life.

Z

ZOOM BLUR p.16, 77
A stylistic blur effect achieved by quickly zooming the lens in or out while pressing the shutter at a slow shutter speed. Creates a sense of movement, even with a stationary subject.

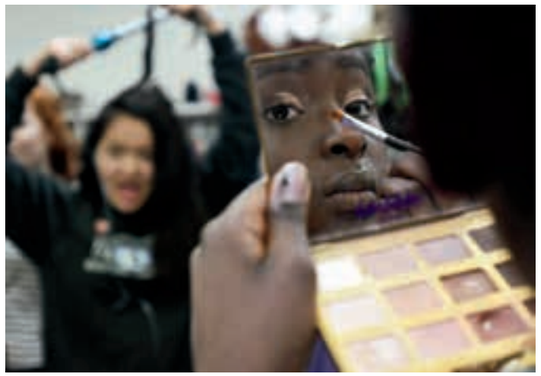
ZOOM LENS p.51
A lens that can be adjusted to various focal lengths to change the relative scale of a subject or scene.


Qi Ting Lei: KIPP King Collegiate High School, CA


Lindsay Mitchell: Coronado High School, NV


Haley Bondurant: Pace High School, FL


Jordan Richard: Kennesaw Mountain High School, GA


Faith Roth: Coronado High School, CO


Alex Melton: Bryant High School, AR

Olivia Howgill: Shawnee Mission East High School, KS

Anna Kate Jordan: Texas High School, TX

Liza King: Richland R-1 High School, MO

Emily Huddleston: Jasper High School, IN

Lauren Gajdica: Midlothian Heritage High School, TX

Taylor Welch: Stockton R-1 Middle School, MO

Shumesa Mohsin: Toaky High School, CA

Eakin Howard: Asheville High School, NC

Alina Peret: Bryant High School, AR

Chad Byrd: Richardson High School, TX

Paige Henrick: Seven Lakes Junior High School, TX

Eakin Howard: Asheville High School, NC

Kayleigh Moreland: Texas High School, TX

Laura Lane: Taylor High School, AR

Josie Pringle: Bryant High School, AR

Emily Hall, Bryant High School, AR

Josie Pringle: Bryant High School, AR

Becca Cook: Corsicana High School, TX


“IF YOUR PICTURES AREN’T GOOD ENOUGH, YOU AREN’T CLOSE ENOUGH.”
— ROBERT CAPA
Erin Elizabeth Dempsey: Coppell High School, TX