

# **Beyond Basics**

## **Fundamental Photography Techniques**

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### Beyond basics: fundamental photography techniques

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Welcome to your lessons. Some lessons may have quizzes or assignments for additional learning. Don't forget to join your fellow classmates and instructor on the message board.

Lesson 1 

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### Welcome to the course

You don't have to be a professional photographer to take pictures like one. To achieve outstanding photos, you just need to know what professionals know! With recent technological advances in digital photography, taking more professional-looking photos is easier than ever. By identifying the time-honored techniques that pros use, you can produce engaging photographs with your own digital camera. Each lesson in this course will guide you through some essential photographic principles as you learn tips to improve your photography skills.

### Versatile and affordable cameras from HP



#### » Digital cameras

From point-and-shoot models to cameras designed for the photo enthusiast, HP innovation makes it easy to shoot and share digital pictures.



You'll begin by learning how to take better photos of people by controlling lighting, backgrounds, composition, and poses. Next, you'll discover the secrets of landscape and architecture photography as you explore principles such as framing, vantage point, and the rule of thirds. The principles of achieving dramatic black and white photography and extreme close-ups will be revealed as you learn how to shoot like a pro.

After each lesson, be sure to complete the assignments and quizzes. When you have completed those, visit the Message Board. It's the perfect place to discuss course topics and swap questions, comments, and tips with other students and your instructor.

### What you'll need for this class

- A digital camera (its user manual will be helpful)
- A computer
- Photo editing software such as [Photosmart Essential](#) (a

free download from HP)

If you can't locate the user manual for your camera, check the camera manufacturer's Web site. You can access manuals and other product information for HP cameras by going to the HP Home & Home Office [Customer Care](#) site and entering the model number of your camera.

### Photographing people

Perhaps more than any other type of photography, photos of people evoke emotion and create human interest. Portraits capture a moment in an ever-changing world, recording that memory for the future. When you're photographing a graduate, a newly engaged couple, a gathering of family members, or a newborn baby, you want to achieve the best photo possible.

Technology has made taking great photos easier than ever, but photography is still a creative art -- and every photographer has his or her own style of expression. So what makes some portraits more appealing than others? Professional photographers understand the fundamentals of selecting good locations, controlling lighting, and engaging the subjects, as well as composing a good shot, finding flattering camera angles, and avoiding red-eye. You can use those fundamentals to improve your own photos as well.

### Next up

Let's begin by learning to find a good location for your photographs.

#### Where in the world? Selecting a background

The piece of sound real estate advice you always hear -- "Location, location, location!" -- is critical in portrait photography as well. Cluttered, distracting backgrounds can ruin technically perfect photographs by drawing attention away from the most important element of your photo: the people. A busy background competes for attention, reducing the impact of your photo.

When selecting the background, professional photographers strive for simple scenes with a minimum of pattern, shape, and color variation. To achieve professional results, try looking for a location with the eyes of a pro.

#### Tips for selecting a good location

- If you can shoot outdoors, a spot with simple mid-tones such as foliage, a wall, or the beach is ideal. Try to find a shady spot if it's a sunny day. The location in Figure 1-1 works well because the leaves of the trees provide both shade and a wash of green color.

#### Include handy accessories



#### » Camera batteries, charges and adapters

Keep your camera's batteries charged and ready for the next photo opportunity.



Figure 1-1: Foliage provides a pleasing backdrop for outdoor portraits.

- When shooting indoors, pose your subjects against a blank wall, a curtained window, or a sheet or blanket hanging on the wall. This allows your subjects to take center stage. The neutral background in Figure 1-2 allows your eyes to be drawn to the mother and daughter.



Figure 1-2: A neutral wall provides a nice backdrop for indoor portraits.

- If your subjects have darker skin, select a background that is similar in tone. This helps you achieve correct exposure and keeps the focus on the subject.
- Shoot photos where the professionals do. Research photographers in your area to find out where they like to take photographs. Are the botanical gardens a popular spot? How about scheduling some time in a local park, historical home, or museum? Local magazines and Web sites are good sources for location cues.

### When busy backgrounds can't be avoided

Remind yourself to look for background elements that might merge with your photo, such as trees, lamp posts, and poles. Background elements like this might cause unfortunate results such as appearing to be growing out of a person's head when the photograph is viewed. When this type of element cannot be avoided, change the angle from which you are shooting so that the effect is eliminated or minimized.

For instance, look at Figure 1-3. The tree is coming almost directly out of the top of the young boy's head. If the photographer had shifted to the right, the tree would be on the right side of the frame instead.



Figure 1-3: Reposition the shot to eliminate distracting background details.

When a busy background cannot be avoided, you can correct the photograph by using your camera settings to blur the background. Select Portrait mode or use Aperture Priority mode with a low f-stop such as 4.0 to create a shallow depth of field, which keeps the subject in focus but blurs the surroundings.

To get more information about depth of field, read [these tips](#).

### Meaningful locations

One way to add significance to your photograph is to choose a location that is meaningful to your subject. If your subject is a handyman, try photographing him in his workshop. If your subject is a teacher, choosing her classroom for the photo shoot adds interest and relevance to the photo. If you live near a famous landmark, use the landmark as a backdrop. When you're taking a family picture, the family home might be the perfect location. Photographing people in their own environment gives character to the picture and relaxes the subjects so that a more flattering photograph can be captured. Figure 1-4 shows how photographing the gardener in her greenhouse produced a relaxed, natural expression.



Figure 1-4: Photographing people in a meaningful location relaxes them and adds meaning to the portrait.

Once you have selected a good location, the next step is to control the lighting in the environment. Up next: learn to solve lighting challenges both indoors and outdoors.

### Shedding light on portrait photography

Because all photos capture the effect of light on a subject, lighting is one of the most important factors in photography. Professional photographers understand the effect of light on the shadows, color, and quality of their photos. By learning what professionals know about light, you can make informed lighting choices when shooting your own portrait pictures.

#### Natural light

Most professional photographers feel that natural light is the most flattering lighting environment for portraits because natural light captures the full color range, visually warming the skin. Natural light can be used both outdoors and indoors.

#### Using natural light outdoors

When you are shooting photos outdoors during the day, using natural light makes sense. To use sunlight in your outdoor portrait shoot, a classic technique is to position yourself so that the sun is behind you and to one side. This allows sun to shine on the subject's face, but not directly in their eyes. The photographer in Figure 1-5 forgot to stand to the side, causing the children to squint at the camera.

### Print your favorite shots in vivid color



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In a hurry for your prints? Our Photosmart C6180 is the world's fastest photo All-in-One! It's also a pro at color faxing, it uses six separate ink cartridges that you only replace as needed. With built-in wireless networking, it's ready for connecting to all your home PCs. More time savers: the 50-sheet automatic document feeder and 4 x 6" automated tray for dedicated photo printing.



Figure 1-5: The kids in this photo are squinting at the sun behind the photographer.

Arrange your subject carefully, paying attention to the shadows that the light is casting. Make sure that the light is complimentary to your subject's features, not casting unflattering shadows. Try taking shots from several different points, then review the pictures on your camera's LCD screen to determine the most pleasing shooting arrangement.

On a bright day without cloud cover, position your subject in a shady area, then use the camera's on-board flash to fill in shadows and brighten your subject's face. A white poster board or car dashboard sun reflector can also be used to bounce sunlight. Arrange the reflector so that it catches the light, then fills the shadows in shady areas.

Be aware of backlit scenes. When a subject is illuminated from behind, the light causes a soft, glowing halo and a silhouetted figure. Backlit scenes can also cause your subject's facial features to be obscured by shadows. When your location is backlit to the point that your subject is silhouetted, use the fill flash or reflector to cast light on your subject's face. Figure 1-6 shows a great example of this kind of photo.



Figure 1-6: The fill flash was used to illuminate the subject's face in this backlit photo.

Overcast days are ideal for outdoor portrait photography because the soft light is diffused through the clouds, creating a pleasant, flattering light that's perfect for portrait photography.

### Time Matters

It's important to understand how the time of the day will affect natural light. Most professional photographers prefer to shoot portraits in the early morning or late afternoon. Here's why:

- Midday light is the brightest light of the day, producing the clearest, sharpest photos. At midday, the light casts a cool, blue cast which is so bright it can blow out the color in your photos. Direct sunlight is not ideal for portraits because it casts harsh shadows under the eyes and chin -- this accentuates wrinkles and exaggerates facial features. Midday light can also cause your subjects to squint.
- Professionals call late afternoon the "golden hour" because afternoon light is soft and gives a warm, golden glow with soft contrasts. The sun is shining from an angle at this time of day -- the angled light gives depth to photographic subjects, enhancing features.
- Early morning is also a great time to capture photos with natural light. Like the golden hour, sunrise light shines at an angle, accentuating your subject's features while casting a flattering glow.



Figure 1-7: Morning light casts a warm, golden glow.

It's usually easier to photograph a large group outside. It can be difficult to find a well-lit space inside a home or building that is large enough to accommodate a large group photograph. Also, moving a group outdoors makes finding a uniform background easier.

While natural light is most plentiful outdoors, it can also be used to shoot indoor portraits during bad weather, high winds, or temperature extremes that would prevent you from shooting outside.

### Using natural light indoors

You've learned that professional photographers consider natural lighting to be one of the most flattering ways to light a portrait. But what if you are shooting a portrait indoors? You can still use natural light by positioning your subject near a large window. Conventional wisdom dictates that north-facing windows with plenty of indirect sunlight are the best choice. But any window or sliding glass door that admits soft, diffused light through blinds or window coverings will allow you to capture the beauty of your subject without a flash. Photographers call this **ambient light** or **available light**. Like outdoor photography, the warm tones of sunrise and sunset light will light up your subject's face with a soft, flattering glow. Figure 1-8 illustrates the beautiful effect that can be achieved when natural light is used.

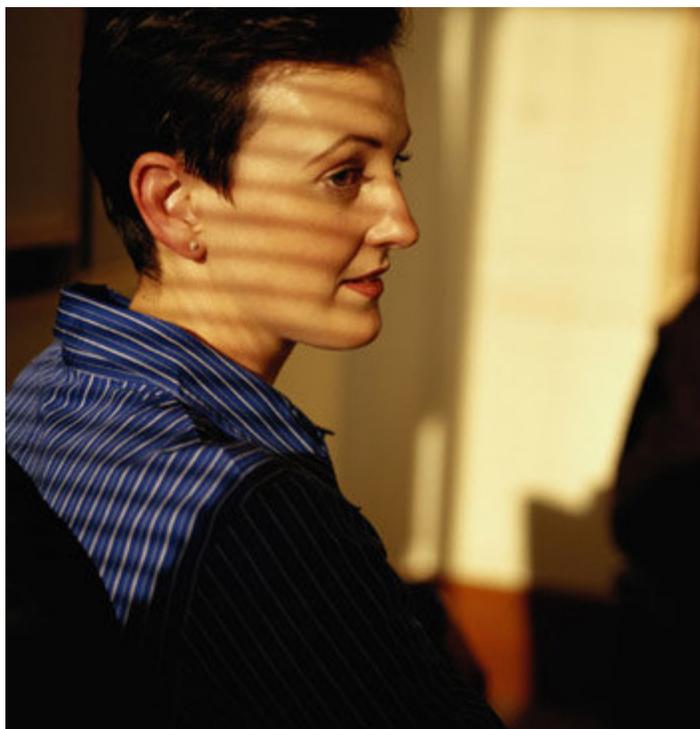


Figure 1-8: Ambient light illuminates a subject with a soft, flattering effect.

When using sunlight through a window, you can position your subject to achieve the effect you desire:

- **Front lighting:** Create front lighting by having your subject face the window so that the light source is illuminating the subject's features. The light source will be behind you while you take the photo. If more light is needed, ask the subject to hold a piece of white poster board in his or her lap, slightly curving the ends upward. This will bounce more soft, natural light onto your subject.
- **Side lighting:** Create side lighting by turning your subject to the side. Use the soft light to illuminate your subject from an angle for a pleasing effect. Use the reflective poster board to fill any harsh shadows with light. Because you rarely see anyone in real life who is illuminated from a light source directly in front of them, side lighting creates a more believable effect.



Figure 1-9: Side lighting gives a pleasing, believable effect.

When selecting a window for ambient lighting, remember to keep the fundamentals of choosing a location in mind. Living areas and dining areas with large windows and a minimum of background clutter are good choices for indoor portraits. Busy game rooms and kitchens might include too many distracting background elements.

### **Why shoot natural light portraits indoors?**

In extreme climates or bad weather, indoor natural lighting is a good choice. It allows you to capture beautiful portraits of people who would be uncomfortable outside, like the elderly or infants.

Indoor natural lighting is especially helpful when photographing babies who tend to squint when out of doors. Arrange a pile of blankets on the floor next to a large window. Position the baby on the blankets to take advantage of the light while the baby remains happy and comfortable, like the baby in Figure 1-10.



Figure 1-10: Indoor photography keeps subjects happy and comfortable.

On occasion, you will find yourself shooting portraits when the ambient lighting is too poor or doesn't exist at all. When this occurs, you will need to find other sources of light to illuminate the scene.

### Shooting with artificial light

Photos shot without enough light appear grainy, washed out, and dark. When circumstances call for shooting inside a poorly lit room, look for alternate sources of light. Although your first instinct may be to use your camera's on-board fill flash to light a darkly lit room, it's a good idea to search for additional light sources instead. Shooting in dark rooms where the main light source is your flash will not give you good quality exposures.

Straight-on flash photography often flattens facial features, producing a dull photo. Fill flashes usually produce a harsh, unflattering light. Manufactured to work within a short range, your subjects may be too far away for the fill flash to reach.

An on-board flash is designed for (and does a good job of) filling in dark shadows caused by other light sources, but isn't the best choice for creating flattering portrait lighting. Many professional photographers use expensive lighting equipment for shooting portraits indoors -- but with a little ingenuity, you can achieve bright and interesting effects with lights around your home.

### Do-it-yourself studio lighting

Instead of using the fill flash, gather floor lamps, table lamps, and spotlights from your home. Handyman types may have several hanging or clip-on lights you can use to direct light at pleasing angles. Arrange them so that they are outside of the range of your photo while illuminating the scene. Positioning the lights to the left and right of your subject allows the light to flood the area without interfering with the light metering of your camera. A light within the camera viewfinder will trick the camera into creating an underexposed photo.

Try bouncing light off of light-reflective surfaces such as walls and ceilings, keeping in mind that it is easiest to bounce light in small rooms and hallways. Bounced light produces more natural, pleasing effects because the light is diffused, adding depth and subtle shadows to the face of your subject.

To avoid unsightly shadows on the backdrop behind your subject, shine one light on the background behind your subject.

Get creative with alternate sources of light. Try using candles, holiday tree lights, a bonfire, strings of patio lights, fireworks, a fireplace, or other interesting light sources to achieve interesting effects. Figure 1-11 shows how candles can illuminate a subject's face with soft light.

### Value packs save time and money



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Figure 1-11: Find creative sources of lighting such as candles on a birthday cake.

When using these alternate light sources, be aware that using home lighting can give photos a color cast. Incandescent lighting (light bulbs) might cast a yellow or orange color, while florescent lighting can cast a blue or green tint. Learning how to use white balance settings will help you achieve color accuracy in your photos.

### White balance

Light sources emit light at different color temperatures causing a color cast. Digital cameras use white balance settings to compensate for this color shift and to achieve color accuracy. When using home lighting, set the proper white balance on your camera. Doing so programs the camera to take into account the color temperature of your light source. In Figure 1-12, the photo on the left is what the photo looked without white balance settings; the photo on the right shows how white balance settings read the light and adjusts colors accordingly.



Figure 1-12: Adjusting white balance corrects color casts.

[Enlarge image](#)

### Common digital camera white balance settings

You'll need to explore your camera's user manual to discover your camera's exact white balance settings. Here are some typical settings:

- **AWB or Auto:** The default setting.
- **Manual or Custom:** Lets you set the white balance yourself.
- **Tungsten:** Corrects the color cast of incandescent or halogen lighting. Choose this setting if you are using household lamps for your portrait shoot.

- **Fluorescent:** Corrects cool or warm fluorescent lighting situations. Choose this setting if your photo shoot is lit with fluorescent bulbs.
- **Sun or Daylight:** Use in full sun.
- **Cloudy or Shade:** Corrects photos taken at dusk or when your subject is positioned in the shade.
- **Flash:** This setting performs more satisfactorily than Auto White Balance when using the fill flash.

Selecting the appropriate preset on your digital camera helps you to achieve more accurate, professional-looking exposures.

You have learned several ways to photograph your subject without using the fill flash. On the occasions when fill flash is necessary to achieve exposure, there are several things you can do to optimize your photo, as you'll explore next.

### Tips for using your camera's built-in flash

Once you've made the decision to use the flash, the first thing you need to do is make sure that your subjects are within the flash range. Most flashes emit a burst of light that extends six to 12 feet. Your camera's user manual will contain this information.

If you're photographing a group of people, position the subjects so that they are all approximately the same distance from the camera so that no one remains in dark shadows. Figure 1-13 shows a good arrangement for flash photography.



Figure 1-13: A good arrangement where all subjects are within range of the flash.

Remove any reflective surfaces, such as glass, that will cause hot spots or flares in your photo. If your subject wears glasses, ask him to turn his head slightly. This creates an angle, preventing unwanted flash reflections. The angle of the subject's head in Figure 1-14 prevented a flare in his glasses.

### Features make the difference



#### » HP Photosmart R967 digital camera

You want heavy-duty megapixels? How about 10? Yes, HP's Photosmart R967 Digital Camera has them. . . and a whole lot more, starting with a spacious (3 inches across) display on the back, and a perfect, snug fit in your hand. This durable, compact, metal-bodied wonder also boasts 30x total zoom (3 x optical, 10x digital). Incredible photo quality and ease of use, all in one!



Figure 1-14: Avoid unwanted flash reflections by asking the subject to turn their head slightly.

Avoid deep shadows on the background behind your subjects by positioning them a good distance away from the backdrop. Taking a few test shots will help you determine the optimum distance.

Try turning your digital camera upside down before taking the photo so that the flash fills your subject's face with light from below instead of above. This change positions the flash below the lens, bouncing light at a more flattering angle.

Using a flash can have the added benefit of adding a spark or glint to your subject's eyes. Professionals call this highlight a "catch light" which draws attention to the eyes in the photograph. Pros feel that the eyes are the most important part of a portrait and work hard to make sure they are clear. The next section gives you tips for photographing your subject's eyes -- and avoiding red-eye.

### Avoiding red-eye

If your subject is facing the camera, it is a rule of portrait photography that the subject's eyes must be in focus. Even if other parts of the photo are out of focus, the eyes must remain clear.

Because eyes are so important, you want to take the time to ensure that you avoid the common red-eye phenomenon. When light from a flash hits your subject's retina, the camera captures the redness of the blood vessels found there, causing red-eye. In a compact camera, the flash unit is located close to the lens which makes photos taken with a flash very susceptible to this phenomenon.

Fortunately, there are several things you can do to avoid the red-eye phenomenon in your portraits.

### Dock it and download photos in a snap



#### » Camera docks

Want to make it easier to transfer photos and video clips to your PC from your camera, print them, and ...

- **Use in-camera red-eye removal:** This feature processes the red-eye after you have taken the photo. You can access this tool in many HP cameras within the Playback Menu. The software in your camera analyzes and corrects the photo, removing the red-eye for you. You can learn more about this amazing technology by taking the HP [Red-eye removal Technology Tour](#). Figure 1-15 shows before and after red-eye photos.

The HP Photosmart camera dock is the answer.

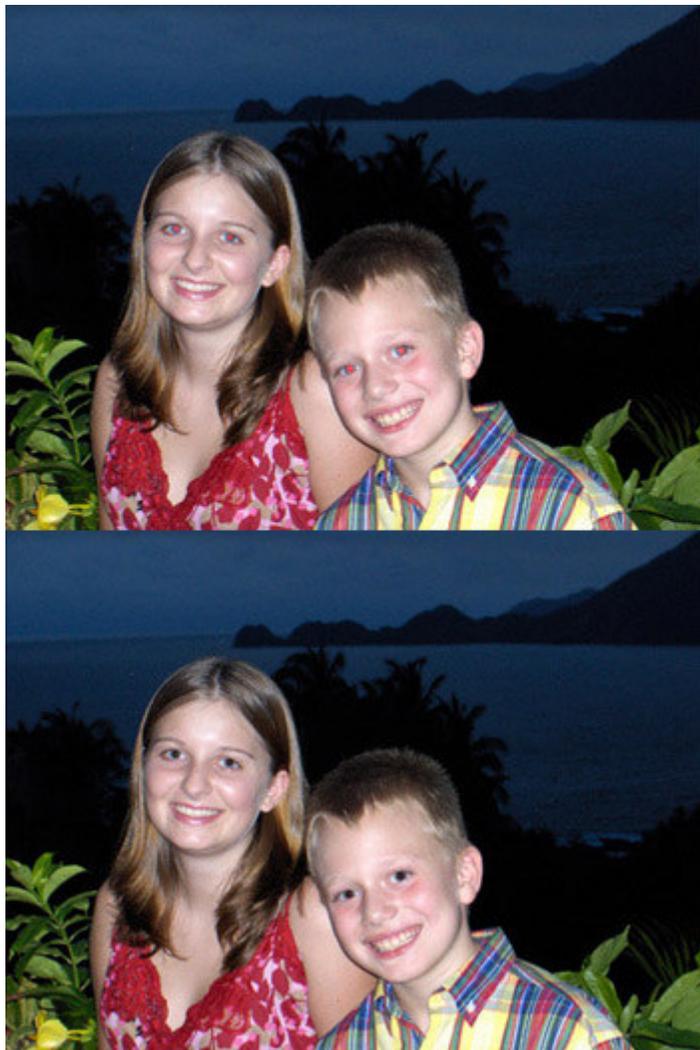


Figure 1-15: Remove red-eye with the red-eye reduction setting on HP cameras.

- **Find supplementary sources of light:** Because red-eye occurs in low-light situations, increasing the available light will help prevent red-eye from happening.
- **Scatter the light from the flash:** Diffusing the light from the flash with a thin, white cloth or tissue is a trick that photographers use to create a softer burst of light. This may be just enough to avoid red-eye in your portrait and create the soft, flattering lighting you want.
- **Change the camera angle:** Move closer to your subject or ask the subject to look slightly away from the lens, creating a different angle. Sometimes this subtle change eliminates the red-eye cycle.

It's a good idea to experiment with changing the camera angle for other reasons as well. Next, learn how altering your vantage point can produce a more interesting and flattering portrait.

### The right angle: selecting a vantage point

Don't hesitate to change your vantage point when shooting a portrait. With your digital camera in hand, you have very little to lose by experimenting. You can take as many photos as you like, deleting the unsuccessful ones.

Many traditional portraits are shot at **eye-level**. You may have to lie down on the floor to achieve eye-level with a baby, or stand on a ladder to achieve eye-level with your basketball-star nephew. Changing your vantage point using these same shooting positions can also help you eliminate distractions from the background and achieve a more flattering portrait.

Shooting from **above** alters the backdrop of the photo, causing what is below your subject to become the background -- like the sofa in Figure 1-16. Try this technique when photographing babies on blankets or your children in a field of flowers.



Figure 1-16: Shooting from above makes an interesting photo.

Shooting from **below** eliminates distracting elements on the ground, making the sky or ceiling the photo's neutral background, as shown in Figure 1-17.

### Printing photos has never been simpler



#### » HP Photosmart C6180 all-in-one

In a hurry for your prints? Our Photosmart C6180 is the world's fastest photo All-in-One! It's also a pro at color faxing, it uses six separate ink cartridges that you only replace as needed. With built-in wireless networking, it's ready for connecting to all your home PCs. More time savers: the 50-sheet automatic document feeder and 4 x 6" automated tray for dedicated photo printing.



Figure 1-17: This photo shot from below makes the sky the background.

Photographers choose extreme angles to add energy, interest, and the element of surprise, but they are careful to make sure that the shot is still complimentary to their subject.

Review your exposures to make sure that your angles are not distorting the features of your subject in an unflattering way.

As you are shooting, you may need to reposition your subject as you alter your camera angle in order to achieve the best portrait. Next, find out how professional photographers position their subjects to maximize attractiveness.

### Posing your subjects

You want your subjects to feel comfortable and look natural while you are photographing them, but you also want them to look attractive and interesting. Professional photographers know a few secrets to maximize attractiveness and maintain interest in the photo.

### Putting your subject at ease

If at all possible, set up your camera equipment and be ready to shoot before your subjects arrive to minimize the waiting time. If you are shooting portraits at an event or outing, get ready before you ask the subjects to begin posing. As they arrive and get in place, put them at ease by complimenting them, asking them questions about themselves, or reminding them of a silly event. Try to get your subjects to warm up, relax, and show their true character so their sincere personality shows in their face. Children can often be entertained with toys and jokes. Relaxed subjects will also work with you longer, which is an added benefit to putting them at ease.

### HP cameras put you in control



#### » HP Photosmart M537 digital camera

Get ready to shoot stunning photos. Our Photosmart M537 Digital Camera packs 6 megapixels plus 18x total zoom (3x optical, 6x digital) for eye-popping results. An array of convenient buttons and menus, an anti-shake feature, a bright, 2.5" display, in-camera red-eye

### Posing your subject

One of the ways you can get an individual to relax is to put her in a comfortable position. Photographing a subject with shoulders squared, fully-facing the camera makes a football player look bulkier and more menacing, but it is rarely flattering for a portrait of a woman. By slightly turning your subject's shoulders or asking them to lean in toward you, as in Figure 1-18, a more complimentary angle is achieved. This also keeps your subjects from appearing two-dimensional or flat.



Figure 1-18: Turn people so they don't look flat on film.

Another way to make your subject feel at ease is to let them pose with a prop that reflects their individuality, interest, or hobby. The photos will be more personal and interesting and your subject will feel less self-conscious. This not only relaxes your subject, it also gives them something to do with their hands. Does your subject quilt? Lay a quilt, pattern, and thread on her lap. Is your subject an avid reader? Suggest bringing a few favorite books. A child will feel comfortable with his or her favorite toy -- and the memory of that toy will last a lifetime when captured in a photograph. Ask questions about the prop to engage the subject in conversation about what they love. Their enthusiasm will reflect in their facial expression, resulting in a more sincere portrait, like the soccer player in Figure 1-19.

and the ability to take video clips and print stills round out this Windows Vista Ready model's offerings.



Figure 1-19: Props add interest and help put your subjects at ease.

### **Act naturally**

Remember that your subject doesn't always have to be looking at the camera. Take a few posed shots, but then observe them as you continue to engage them in conversation. Photos that reveal a person's character are more often captured when they aren't performing for the camera.

### **Posing a group**

Arranging a group in a visually pleasing way has its own challenges. By paying attention to height, position, relationships, and clothing, you will view the group like a pro and capture more engaging exposures.

### **The long and short of it: staggering height and position**

When photographing a large group of people, stagger their heights by arranging them in short, loose rows. A trick that photographers use is to look at the eyes of the subjects. If the eyes are in a straight line, rearrange the group. Find props such as stairs, chairs, or ladders that you can use to create variation in height and position. Make sure that everyone is comfortably posed. You don't want anyone struggling to be seen or awkwardly positioned.

If you are photographing a tall person and a short person together, ask the tall person to squat or sit so that the two heads are close in height, but not exactly level. You don't want a large separation of their heads.

Take a look at Figure 1-20. The photo at the top left shows eyes in a straight line which causes your eye to focus on the girl in the middle. By staggering the subjects as in the top-right photo, the eye travels through the photo, allowing the viewer to take time to view each girl individually.

The lower-left photo shows the unfortunate results of a large

separation of subjects. By reducing the distance as in the lower-right photo, a more pleasing and personal photo is achieved.



Figure 1-20: Varying positions affect the overall feel of a photo.

Like height, it is a good idea to vary the poses that group members assume. For example, you might have someone cross her arms, have another place his hands in his pockets, have some subjects seated while others stand. To keep the focus on the group, turn members on the left and right toward the center of the composition.

Keep in mind that when you add depth to the subjects, you will need to add depth of field. You don't want the people on the back row to be out of focus.

### **The rule of circles and triangles**

The human eye finds circles and triangles pleasing. Knowing this, portrait photographers often arrange groups so that their faces form triangles and circles in the picture. The advantage to this arrangement is that the viewer's eye will be drawn around the circle or triangle of faces, instead of stopping on only one subject in the photograph. In Figure 1-21, the photo on the left shows a group arranged in a triangle. The photo on the right illustrates a pleasing circle of subjects.



Figure 1-21: Arranging your subjects in a triangle or circle keeps your eyes from focusing on any one person.

### **We are family: honoring relationships**

When you photograph people together, pose them in ways that show the closeness. In extended family groupings, for example, try to position each smaller family grouping in close proximity. Couples can be photographed hugging while siblings might sit arm-in-arm. Try to position honored members of the family in a prominent spot, such as the front or center of the group.



Figure 1-22: Showing the relationship through the pose.

### **Include yourself**

Don't forget to include yourself in group shots. When you want to join the crowd, using a self-timer can help. Position the group, focus the lens and select the delayed-action timer. The delayed-action timer is often activated by pressing a self-timer button, then pressing the Shutter button. You will usually have at least 10 seconds to position yourself before the photo is snapped. Be sure

to safely anchor your camera when using this technique. Either use a tripod or balance the camera on a level surface to keep the shot steady and avoid an accident.

### **Fashion sense: paying attention to clothing**

When you have input ahead of time, ask your group to dress in clothes that are complementary to each other. Neutral colors, subtle patterns, or dressing exactly alike are clothing schemes that work well for group shots. Wearing matching outfits keeps the focus on the people and their faces. Figure 1-23 shows a well-coordinated range of clothing colors.



Figure 1-23: Keep clothing simple so it doesn't compete with the people.

### **Strength in numbers**

One of the best things about digital photography is that it is no more expensive to take hundreds of pictures than it is to take one! One of the first rules of photography is that it's better to take too many pictures than too few. By taking plenty of pictures, your chances of getting some satisfactory shots are greatly increased. This is especially true with group photography where someone might shut their eyes or have a silly expression.

### **Moving on**

In this lesson, you learned the secrets that professional photographers use to capture interesting, flattering portraits with personality. In Lesson 2, the fundamentals of photographing landscape and architecture will be revealed. Be sure to complete the assignment and take the quiz for this lesson, then stop by the Message Board -- an experienced instructor is standing by to answer your questions!

**Next steps >>**

### **Congratulations on completing the lesson! Don't forget the following:**

- » [Assignment: Portraits of people and groups](#)
- » [Quiz: Lesson 1, quiz 1](#)
- » [Return to the lessons list to get a quick overview of the entire class](#)

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# Taking portraits of people and groups assignment

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Assignments are designed to help you apply the information learned in the lessons.

## Portraits of people and groups

Based on what you learned in Lesson 1, complete two or more of these exercises. Then come to the Message Board to ask any questions and report your progress.

1. Select a good background for a photo.
2. Practice posing a subject. Using your selected background, take one photo of your subject with their body straight on. Take another shot with their body slightly turned and leaning. Which photo is more flattering? Did you make a good choice of background?
3. Practice using natural light. Seat your subject near an open window to capture a few shots.
4. Practice using the fill flash. Take a backlit photo (or ask your subject to wear a hat) so that your subject's face is in shadow. Take a photo using the fill flash to fill the shadows with light.

**Assignment Completed >>**

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## Lesson 1, quiz 1

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### Quiz: Lesson 1, quiz 1

Quizzes are designed to give you a chance to test your knowledge.

#### 1. True or False: White balance corrects the color cast caused by the temperature of different light sources.

- A.  True
- B.  False

#### 2. How do you prevent or eliminate red-eye in your photo? Select all that apply.

- A.  Change the angle from which you are shooting the photo.
- B.  Use red-eye removal.
- C.  Put the sun behind you when taking the picture.
- D.  Add an additional source of light.

#### 3. Which arrangement below will not produce a pleasing group shot?

- A.  With their eyes staggered on different levels
- B.  With their eyes in a straight line from left to right
- C.  With their heads grouped in a circle or triangle pattern
- D.  In a way that shows relationships

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## Lessons - Beyond basics: fundamental photography techniques

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### Beyond basics: fundamental photography techniques

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#### Lesson 2

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### Composing landscape and architecture photos

Landscape photos are a part of photographic history. In fact, the first photo ever recorded is a landscape called *View from the Window at Le Gras* by Joseph Nicéphore Niépce. Taken in 1826, it took approximately eight hours of light exposure to create the photograph.

Figure 2-1 is a 1952 reproduction of the original Niépce photo. Details of the original image are obscured because the photo was a heliograph done on a pewter plate.



Figure 2-1: Gelatin silver print with applied watercolor reproduction of Joseph Nicéphore Niépce's *View from the Window at Le Gras*. March 20-21, 1952 by Helmut Gernsheim & Kodak Research Laboratory.

Photography has progressed dramatically since 1826, but many of the fundamental principles still apply today. Niépce, with his very first and famous image, applied a rule of photography that we still use today: framing.

### Framing

Framing in photography is very similar to the concept of framing a piece of art to hang on your wall. When you frame artwork, you create a boundary around the art in order to draw attention to what is in the center. When photographers talk about the concept of framing, they are not referring to an external frame. Framing in photography means finding and using shapes such as columns, pillars, building edges, trees, tunnels or arches to use on the

### Frame your shot perfectly with a generous display



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edges of a composition so that the eye is drawn to the focal point. Figure 2-2 shows a good example of how framing subjects with architecture creates a pleasing effect and showcases the focal point of the photo -- the people.



Figure 2-2: Two people nicely framed using an arch.

A great photograph is rarely an easy one. Professional photographers explore many different angles and locations around a subject when shooting landscapes and architectural photos. To capture interesting, professional-looking photos, train yourself to look for framing opportunities. Use whatever is available to create a visual frame. Windows, doorways, bridges, and foliage can provide creative opportunities for enhancing your photography skills. Another technique for improving your composition is called the **rule of thirds**.

### **The rule of thirds**

The rule of thirds is an important and fundamental guideline of good composition. To understand this rule, mentally divide a photograph into thirds both horizontally and vertically, creating a grid of nine sections. When you place your subjects and horizon lines on the lines and intersections of the grid rather than the center, you create tension and energy in the photo. This tension keeps your eye actively involved and interested. Figure 2-3 shows a full viewfinder image, cut into thirds horizontally and vertically. The four lines and intersecting points are the most appealing places to position your subject within the photo.

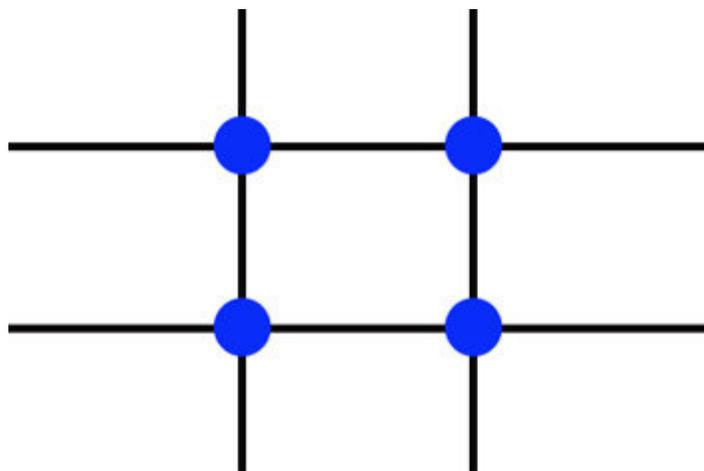


Figure 2-3: Using the rule of thirds, position your subjects on the imaginary lines and intersections.

Figure 2-4 shows an example of the rule of thirds in use. This photo is visually pleasing because the tree is placed at one of the imaginary intersections.



Figure 2-4: The tree is at an intersection point, making it the main focus of the photo.

Although photographers use the term "rule" to describe many fundamentals of photography, think of them as guidelines for better photography instead. There are always exceptions, wonderful photographs that do not follow "the rules." But by consistently applying these guidelines, you can improve your skills as a photographer.

### **A sense of scale**

When you look at a scene with your eyes, you can detect dimension. It's disappointing to take a photograph of a grand landscape, only to discover that the camera has flattened the image, making it look tiny and dull. Because the camera "sees" in two dimensions, it cannot portray how large or far away an object is. Professional photographers use a trick to overcome this obstacle. The pros know that placing an object in the foreground gives their majestic landscapes the proper scale. If you're photographing mountains, you can frame the shot with a tree. Because the human eye can approximate how large a tree is, it

can deduce how large the mountains are by comparison. In Figure 2-5, the zebras help give proper scale to the mountain in the distance.



Figure 2-5: Use a foreground object, such as a group of animals, to show scale of distant objects.

Figure 2-6 shows another helpful use for foreground objects -- they keep the photo looking three-dimensional. One thing appears in front of another. The hikers are in front of the grassy hill with mountains in the background. The depth of these objects gives dimension to the photo.



Figure 2-6: Use people as foreground objects to show depth in landscape photos.

If you've ever taken a picture of a kite against just blue sky, you may have been disappointed to discover the scale problem firsthand. Without a foreground object, there is no way of knowing how high the kite was flying. Placing something else in the photo - whether it is just a few clouds, an entire beach, or a person's face as shown in Figure 3-5 -- gives the viewer a frame of reference.



Figure 2-7: Aerial objects also need something in the frame to convey correct height.

Using photographers' rules of composition will help you create more pleasing photos that show off the majesty of a landscape with scale and interest. Next up, learn how to control the depth of field (DOF) to determine which areas of your photo will be in sharp focus.

### Using depth of field

Photographers use depth of field, or depth of focus (DOF), to determine which area of the photo appears to be in focus. With portraits, the subject may be the only thing in sharp focus. For landscapes and architecture photos, however, you may wish to keep both the foreground and background equally in focus.

If your subject and the background are equally in focus, you have a long depth of field. If the area just in front of and behind your subject are blurred, you have a shallow depth of field, as shown in Figure 2-8.



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Figure 2-8: Shallow depth of field keeps the subject in focus while blurring the background.

### Control depth of field with preset shooting modes

Your digital camera probably includes an array of preset shooting modes. One of these modes is the **Landscape mode**. This mode automatically creates a long depth of field, which is the ideal for creating landscape photos because it keeps both the foreground and the background in focus. If you were photographing your aunt in front of the Taj Mahal on a dream vacation, you would want to keep both your aunt and the palace in sharp focus. A shallow depth of field would have the unfortunate effect of blurring the Taj Mahal. You can use the preset Landscape mode or manually adjust the depth of field using **Aperture Priority mode**.

### Control depth of field with aperture stops

Many newer digital cameras offer an Aperture Priority mode, or even full manual control. With this mode, you have the ability to decide exactly what aperture to use. Understanding how aperture stops function will help you make the most of this feature. Slightly more complicated than selecting a preset program mode, this feature gives you more control over how your photos look. Although the concept of controlling depth of field using aperture stops can seem very complex, it is worth exploring. Don't let the terminology scare you! There's a little math involved to understand what your camera is doing, but once you grasp the concept, the rest is automated.

Read [Focusing basics: using depth of field](#) for an easy-to-understand explanation of what depth of field is and how you can use it to take better photos.

An **aperture** is simply the hole that opens in the shutter to allow light in. Think of it like the pupil of your eye. In low light, your pupil expands to bring in more light. In bright light, it contracts. This is the same principle you use to control how much light is allowed through the lens when you click the shutter to take your picture. You can choose to allow a lot of light in, or a tiny amount, depending on the diameter of the lens opening.

F-stop is the common name for an aperture stop.

The aperture stop is a number controlling the size of that diameter. Typical aperture stops, or f-stops, range from about 2.8 to 22. These numbers represent fractions, so f/22 actually represents 1/22nd of the lens opening, while f/2.8 represents about half of the lens opening. The key thing to remember is: the smaller the number, the larger the opening and vice versa. To create a long depth of field, we need to choose a smaller opening, or larger number such as f/16, f/22, or even f/32. Experiment with the settings and find the look you like. Figure 2-9 shows how a long depth of field reveals the details of both the foreground and the background.



Figure 2-9: Another example of how a long depth of field can create a wonderful landscape or architecture shot.

### **Steady, now**

Because you want all of the details to remain in focus, a steady hand is essential for shooting landscape pictures. When you select Landscape mode or set your aperture for a long depth of field, it lets less light into the camera, providing the sharpness. It's a good idea to find a steady surface to rest your camera on when shooting these types of photos. Use a tripod, table, fence, or other solid surface that will help you eliminate camera shake. If your camera has a self-timer, you can set up the shot, then back away from the camera as it takes the shot for you.

Newer HP cameras now come with a feature called Steady Photo that can reduce or eliminate the blur associated with camera shake. This [demo](#) shows you how it works.

Now let's take a look at how light and weather can affect your photos.

### **How light and weather affect nature and architecture photos**

In the first lesson, you learned how to use natural light to photograph portraits. Unlike people, landscapes and architecture cannot be taken indoors under less-than-ideal weather circumstances. When shooting nature, architecture, and landscapes, you are usually at the mercy of the weather.

**Increase the versatility of your camera**

### **Light effects**

Although most people think that a clear, bright, sunny day is ideal for photography, it's actually a mix of sun and clouds that makes for the best photographic conditions. Clouds cut the direct glare of the sun that could cause a flare in the lens of your camera. Clouds also diffuse the light that can otherwise trigger your camera to meter inappropriately, causing your subjects to appear in shadow.

If you have the luxury of waiting for the weather to cooperate, select a partially cloudy day to shoot your landscapes.

The time of day is just as important in landscape photography as it is with portrait photography. In the first lesson, you learned that early morning or late afternoon hours provide the best natural light conditions. This holds true for landscape and architecture photography as well. When the sun is lower in the sky, it is less harsh and provides pleasing shadows to work with. Given a choice, select either the early morning or the "golden hour" to photograph your favorite scene at the lake, your view of the mountains, or your own backyard garden. Figure 2-10 shows how pleasing a late-afternoon shot can be.



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Figure 2-10: Early morning or late afternoon is the best time for landscape photography.

### Weather effects

For better or worse, weather plays a role in nature and landscape photos. Although you would rarely choose to take pictures in the rain, you might want to take photos in the snow or at the beach. Snow and sand are both reflective surfaces. They reflect sunlight, fooling your in-camera sensor into thinking that there is more light in the picture than there really is. The results of this faulty metering are that the snow will appear blown out (totally white pixels, with little or no information) while your main subjects appear in shadow. To compensate for that, you can use automatic preset modes such as **Snow**, **Sunset**, and **Beach modes**, which are available on many HP cameras. These handy modes optimize the camera settings to compensate for the difficult lighting situations peculiar to each environment. You can also use something called **exposure compensation** to correct the camera's mistake.



Figure 2-11: Use automatic presets or exposure compensation to attain a correct exposure in snow.

### **Exposure compensation**

Your digital camera is a remarkable piece of equipment that performs well in most circumstances, but it is no substitute for human perception. There are times when you need to help your camera determine the correct exposure settings. Although your eyes have no problem distinguishing a white rabbit against a mound of snow, the camera may be fooled into underexposing such a bright scene. This will cause the snow to look gray in the photo. Similarly, your camera may not be able to properly expose a black dog perched on a dark blanket. It may average the brightness, reading the dog as gray in color. To override the average brightness level, use the EV (Exposure Value) Compensation feature. In difficult lighting situations where there is too much white or too much black, manually adjusting the EV Compensation setting will give you more satisfactory results.



Figure 2-12: Exposure compensation screen.

Increasing the EV Compensation allows the camera to restore the original brightness of white objects in an overly bright scene. Try increasing the steps to get a more natural appearance. Decreasing the EV Compensation will darken the scene, restoring the original black tones to black.

EV Compensation allows you to adjust the image brightness in difficult lighting conditions so that the photo is neither underexposed nor overexposed.

Typically located in the Shooting or Capture menu, Exposure Compensation is a feature that overrides the camera's automatic exposure settings. Choose this feature to make the images incrementally darker or lighter, based on your lighting situation. Use + (plus) exposure compensation when the photo is too dark and - (minus) exposure compensation when the photo is too bright. Track changes by previewing the results on the LCD screen.

### HP adaptive lighting makes it simple

Many newer HP cameras have a feature called **adaptive lighting** -- it's a contrast-balancing technology that makes your photo look more like what your eyes perceived when you took the picture. The best thing about adaptive lighting is that it's all automatic -- you just have to turn it on. It compensates for strong contrasts, uneven lighting, and overexposure from camera flash -- and it can even bracket exposures for you instantly.

Adaptive lighting can also make quick work of sunsets. When you use the adaptive lighting bracketing feature, there's no hurrying with your camera settings as you try to capture a rapidly disappearing sunset. Instead, automatic bracketing saves three pictures every time you shoot. To see this feature in action, take a look at HP's [adaptive lighting](#) demo.

Next up, learn how changing your vantage point can affect your architecture photos.

### Photographing architecture

In this lesson, you have learned photography secrets of composition and depth of field. You have learned how weather can affect your photos, and know how to compensate for difficult lighting situations. While all of these rules apply to photographing architecture, there are a few extra guidelines that will help you achieve more professional-looking results when photographing buildings.

When you are photographing architecture, you are usually on the

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street, looking up at the building. Unfortunately, this is one of the least pleasing vantage points. When you view a building at this angle, the lines at the edges of your photo become distorted, making the building appear to be leaning away from you. To compensate for this phenomenon, you will need to change your vantage point. This can be achieved by moving backward, away from the building, then zooming closer with your lens.

It can also be achieved by finding a perch above street level. Is there a balcony on an adjacent building you can use? Perhaps there is a bench or ladder you can stand on to raise your vantage point. Getting physically higher with your camera will help you achieve a better perspective, reducing the distortion of the building.

In Figure 2-13, the photographer is standing too close to the building. This causes the lines of the building to look distorted.

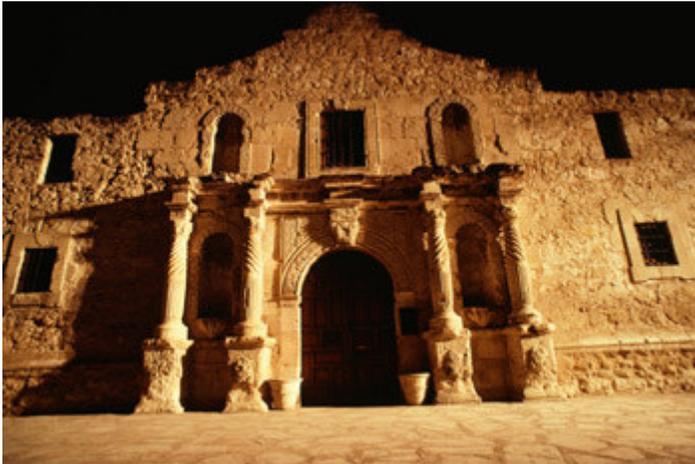


Figure 2-13: In this photo, the photographer is too close to the building.

On the other hand, by shooting the photo from a different vantage point, as shown in Figure 2-14, you get a better sense of the actual lines of the building.



Figure 2-14: In this photo, the photographer is farther away from the building, which reduces distortion.

Changing your vantage point can also mean moving the camera closer to the ground. When photographing indoor architectural

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lines, it is sometimes advantageous to move your camera's perspective closer to the horizontal center of the wall. Normal walls are eight to nine feet tall, so stooping to reduce your height will help you achieve straighter horizontal lines and fewer angles.

### Panoramic photos

When you're photographing sweeping, majestic scenes, there are times when the view cannot be captured in the frame of one photo. Many newer HP digital cameras have a feature that allow you to create a panoramic photo. Select the Panoramic Stitching and Preview function, which programs the camera to guide you through the process of joining your photos together to create one long, narrow photo. To see how this works, watch [this demo](#).



Figure 2-15: Use the in-camera panoramic photography tool to stitch several photos together.

#### [Enlarge image](#)

To achieve the best results, hold the camera level as you take a series of photos, overlapping each photo by between 30 percent and 50 percent. When you're finished, the camera seamlessly stitches the photos together to create a sweeping, panoramic photo.

For more tips and information, read this article on [panoramic photography](#).

### Moving on

You have worked through the fundamentals of landscape and architecture photography in this lesson. Remembering to keep these "rules" as guidelines when you photograph nature and buildings will greatly improve the photos you take on a regular basis. For now, be sure to complete the assignment and test your knowledge by taking the quiz. Don't forget to stop by the Message Board -- an experienced instructor is standing by to answer your questions!

**Next steps >>**

### Congratulations on completing the lesson! Don't forget the following:

- » [Assignment:Nature, landscape, and architecture photos](#)
- » [Quiz:Lesson 2, quiz 1](#)
- » [Return to the lessons list to get a quick overview of the entire class](#)

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## Taking nature, landscape, and architecture photos assignment

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Assignments are designed to help you apply the information learned in the lessons.

### **Nature, landscape, and architecture photos**

Based on what you learned in Lesson 2, complete two or more of these exercises. Then, come to the Message Board to ask any questions and report your progress.

1. Take a nature photo using the framing technique.
2. Take a landscape photo using the rule of thirds.
3. Standing at the bottom of a building, take a photo of the building. Move away from the building and take another shot. Find a way to increase your elevation so that you can take a third shot from a different vantage point. Which photo shows less distortion?
4. Check your camera's user manual to determine if your model is capable of exposure compensation.

**Assignment Completed >>**

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## Lesson 2, quiz 1

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### Quiz: Lesson 2, quiz 1

Quizzes are designed to give you a chance to test your knowledge.

#### 1. Which is not a fundamental rule of photography that was discussed in Lesson 2?

- A.  Framing
- B.  Silhouette
- C.  The rule of thirds
- D.  Vantage point

#### 2. What can you do to minimize distortion of architectural elements in your photos?

- A.  Make sure your flash is turned on.
- B.  Get a different vantage point by moving to a higher elevation.
- C.  Photograph the building vertically instead of horizontally.
- D.  Make sure the building has perfectly straight windows.

#### 3. Which times of the day are the best if you wish to avoid harsh shadows on your subject? Select all that apply.

- A.  Morning
- B.  Noon or midday
- C.  Late afternoon
- D.  Evening

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## Lessons - Beyond basics: fundamental photography techniques

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### Beyond basics: fundamental photography techniques

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#### Lesson 3

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### Creating dramatic black and white photos

Black and white photography is how it all began. In Lesson 2, you learned that the first photograph, shot in 1826, was a black and white exposure by Niépce. It wasn't until 1935 that modern color was introduced. The first color film was a three-layer emulsion film representing the full color spectrum of red, green, and blue.

Today, your digital camera gives you the option of shooting in full color, black and white, or other tones. HP digital cameras offer black and white or sepia tone enhancements so that you can even convert your color images to black and white using on-board camera settings. With today's technology, virtually any photograph can be converted to black and white. Traditional color photos, slides, and negatives can be scanned to get them into digital form so you can work with them. Once your photos are accessible on your computer, photo editing software such as HP [Photosmart Essential](#) (a free download from HP), makes easy work of converting them to black and white or sepia.

**Sepia** tone is a widely-used monochromatic photo style. Popular for many years, sepia gives photos a reddish-brown, aged look like the photo in Figure 3-1. Sepia tones evoke feelings of nostalgia.



Figure 3-1: Using a sepia tone gives new photos an old-fashioned feel.

### Why select black and white?

Now that photographers have the ability to shoot in vivid, lifelike colors, why is black and white photography still so popular? Perhaps it is because black and white photos have a classic,

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ageless feel. We take pictures to capture and preserve a moment in time. What better way to do this than with a photo that has a timeless feel, in black and white?



Figure 3-2: Black and white photos look classic and timeless.

Black and white photography is also popular because it allows you to focus on elements of a photo other than color. Without color, you are able to highlight other aspects of the photo, such as composition, texture, and contrast. There are many reasons you might opt to convert a full-color photo to a black and white photo. Professional photographers might convert a color photo to black and white in order to:

- **Eliminate distractions:** You might opt to convert a color photo to black and white if there are distracting colors that draw your eye from the main subject of the composition. Eliminating the color removes the distractions, allowing your subject to take center stage.
- **Add drama:** Because of its very nature, black and white photography relies heavily on contrast and shadow. Heavily shadowed portraits take on a moody, emotional feel, evocative of old Hollywood portraiture.
- **Focus on the minute details:** Far from boring, black and white photos are a mix of black, white, and all the shades of gray in between. The subtle tones allow the eye to focus on the details of the photo instead of color only. Pattern, texture, and shapes become more pronounced when a monochromatic scheme is used. Without the distracting colors, the viewer is able to focus on the unique qualities and individuality of the subject. Notice how the texture of the stones, aging wall, and spiky plant are emphasized in Figure 3-3.



Figure 3-3: Black and white photos emphasize fine details like texture and shape.

- **Save an otherwise dull photo:** When a photo is shot on a dreary, overcast day, the colors can appear muted and dull. Such a photo can be dramatically improved by converting it to black and white. Figure 3-4 shows how changing a photo to black and white can take it from ho-hum to breathtaking.



Figure 3-4: Transform dull photos by changing them to black and white.

- **Add romance:** Because black and white photos are classic and timeless, they are well-suited for romantic images, such as of brides and couples. Many brides today are requesting black and white photos to document their special day. Figure 3-5 shows an example.



Figure 3-5: Black and white photos look classic and timeless.

- **Add style:** Black and white photos are considered elegant. Simply put, they have style. The uncluttered, classic feel is distinctively upscale. When you are going for a look of refined simplicity, black and white is an excellent choice.
- **Change the emotional feel of the photo:** Making a photo black and white can sometimes deemphasize an element, changing the way you perceive the emotions between subjects. In Figure 3-6, you can see how changing a color photo to black and white affects how you perceive the relationship in the photo. In the color photo, you sense the woman's appreciation for the flowers. But, in the black and white portrait you detect the man's feelings for the woman.



Figure 3-6: The black and white rendition gives the photo a different emotional feel.

- **Increase versatility:** Whether you are shooting landscapes, architecture, portraits, or urban settings, you can achieve stunning results by selecting black and white as your medium. Where color photography is often limited by the amount of available light, black and white photography can be successful in lower lighting. Shooting in low light settings can even give your photos a moody feel.
- **Combine light sources:** In the first lesson you learned that different light sources emit light at different temperatures, which can cast color on your subject. When you are combining different types of lights such as daylight, fluorescent, and incandescent as additional lighting, you can achieve color balance by converting the photo to black and white
- **Focus on the artistic process:** With black and white photography, you can choose to create extreme contrasts or soft, subtle contrasts. This puts the creative choice in your hands, like any satisfying artistic medium. Figure 3-7 shows how a not-so-great photo can become a work of art when converted to black and white.



Figure 3-7: Black and white photography is an artistic medium.

- **Avoid unpleasant clothing color:** Sometimes you take a wonderful photo only to realize that your subjects' clothes are clashing colors. When Mary is wearing purple and John is wearing orange, the effect is visually unappealing. Fortunately, the photo can be saved by converting it to black and white. In Figure 3-8, the original combination of black, blue, and yellow lacked visual appeal. Changing the photo to black and white eliminated the clash, creating a striking photo.



Figure 3-8: Clashing colors can be corrected by converting photos to black and white.

- **Even out skin tones:** Using a monochromatic color scheme mellows skin tones and uneven shading of the skin. The human eye is less capable of detecting these imperfections in black and white.
- **Save a photo with blown-out sectors:** When the fill flash causes hot spots or "blows out" a section of your photo, it's sometimes possible to salvage the photo by converting it to a black and white.
- **Turn a backlit photo into a silhouette:** Perhaps you have taken a picture where your subject is strongly backlit, causing your subject to be in shadow. Rather than deleting the photo, try creating an artistic silhouette with it instead. By turning the photo to black and white and increasing the contrast, you can sometimes create a pleasing effect.

In this section, you have learned how choosing to make certain photos black and white can actually improve the photo. But how can you look at a scene you are photographing and know that it would make a great black and white shot to begin with? In the next section, you will learn to recognize what makes a good black and white photo.

### What makes a good black and white photo?

Throughout the course, you have been learning rules and guidelines that create pleasing photographs. These tips apply to black and white photography as well. The main difference in shooting for black and white pictures is that you can't rely on color to help the composition. This means that shapes, contrast, textures, lines, and patterns become the dominant elements instead of the colors. Without the qualities of color to distract the eye, the viewer can concentrate on graphic elements and overall expression.

Although almost any scene can make a good black and white composition, there are some fundamentals that help you achieve more exciting and interesting black and white photos. As you practice, you can train your eye to look for good black and white photo opportunities.

### Color versus tone

Whereas you normally think in color, black and white photographers think in intensity instead. Look at the scene in terms of a bright to dark scale instead of an array of colors. Remember that as you convert the scene to black and white, neutral tones become gray. Colors of equal tones like red and green will look almost identical in black and white, and some colors that are eye-catching can get washed out. With experience, you will know how the scene will look in black and white without actually shooting the picture. Select a subject that does not rely on color for its beauty. A subject that looks interesting or dramatic will make a good black and white photo. This is the most difficult part of black and white photography, so don't be discouraged if it takes some time to acquire the ability to "see" in black and white.

As you view a scene, ask yourself what you would like to emphasize. If your emphasis is dependent on the colors, by all means, shoot the scene in color. Say you are viewing a landscape that includes a red barn against a green hillside. If you want to emphasize the barn in Figure 3-9, use color to do so. If you want to minimize the barn, shoot in black and white.

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Figure 3-9: Shooting in black and white helped the photographer deemphasize the barn.

### Contrast and key

Just as you train your eye to look for color value, you can also train your eye to look for contrast. In general, black and whites need good contrast between the subject and its surroundings. This helps draw the viewer's eye to the focal point. Without a high level of contrast, the eye is not immediately drawn to one subject. If however, you wish to convey a feeling of serenity and peacefulness, a low contrast setting will help you capture that mood. Figure 3-10 shows the importance of contrast and highlights in black and white photography.



Figure 3-10: Strong contrast is the basis of black and white photography.

Ideally, a black and white photo should have enough contrast so that the blacks are black, the highlights are white, but there is still detail in the highlights and shadows. The exception to this rule is called **high key** photography.

You may have heard the term high key in fashion and art photography. This term refers to a photo with predominately light tones. A high key photo artistically emphasizes shapes, curves and outlines while fine details are generally obscured by light. Low key, conversely, refers to a photo with predominately dark tones.

### Lines, shapes, and patterns

Objects, shadows, and contrasts create lines and shapes in a photo. Pros know that geometric shapes and repeating patterns can be used to direct the viewer's eye through a photo. Because the eye can easily recognize geometric shapes, they are visually pleasing. Lines, shapes, and patterns are especially important in black and white photography because the lack of color emphasizes them.

### Lines

Using lines in a photo can give a composition perspective and dimension. Just like an artist draws perspective with lines, you can use strong lines in your black and white photography. Seek out lines in your scene, then try photographing them from different angles to keep them from looking flat. Straight lines in a black and white photo can give the photo a modern and architectural style. Figure 3-11 uses the line of the bridge to show the scale and distance.



Figure 3-11: Use lines to convey depth.

### Curves

Who says the lines in your composition need to be straight? Curved lines are just as helpful in drawing the eye through the photo as straight ones. Use curves to create dimension and perspective. Curves and crooked lines create visual interest, especially in black and white. In Figure 3-12, the curve of the assembly line creates a very strong composition.



Figure 3-12: Curves guide your eye through the photo.

### Shapes

The human brain is "wired" to look for familiar objects. Simple shapes such as triangles and circles create a composition that is very appealing to the human eye. You've learned that positioning a group in a circle or triangle is a fundamental rule of good composition. This applies to black and white photography as well. Because a black and white photo lacks color, it relies even more heavily on these simple shapes to provide interest and appeal. The repetition of the steps in Figure 3-13 gives the photo a very strong level of interest and guides your eye to the focal point.



Figure 3-13: Use repeating shapes in your photos.

### Patterns and repetition

Just as your brain seeks out familiar shapes, it also seeks out recognizable patterns. You can use this knowledge to create unity and strong composition in your black and white photography. By filling your photo with repeated patterns, you create good composition that is interesting, with or without color.



Figure 3-14: Repeating patterns create a unified photo.

Although patterns and repetition are important for the overall composition of your photo, bold stripes and busily patterned clothing can be distracting and unflattering. Loud patterns draw the attention away from the subject's face, particularly in black and white photography. Ask your subjects to wear solid colors instead.

### Texture

Like lines, shapes, and patterns, texture is an important element of black and white photography. Shape filled with texture gives an object its form. A bale of hay has more visual impact than a slab of marble because it has visual texture. When you are taking a black and white photo, seek out texture to create visual interest and contrast. Figure 3-15 is a good example of how texture creates a visually compelling effect. The texture of the brick wall, door, and cart are emphasized by removing color from the photo.



Figure 3-15: Texture adds visual interest to your photos.

### Lighting

Without color, light takes on a more important role in a black and white photograph. Train your eye to look for shadows and highlights in your subject. The way a picket fence casts a shadow on the ground, the way trees cast shadows on a building, and the way light falls across a basket of fruit will be emphasized in black and white photography. Remember what you have learned about how the time of day affects natural light in order to achieve the shot you desire. Shooting on an overcast day will result in a low-contrast, calm photo. Shooting in the late afternoon will create dramatic shadows and mood.

### Next up

Learn how to capture a black and white photo on your camera or convert a photo to black and white using camera tools and computer software.

### How to capture or create a black and white photo

The easiest way to capture a black and white photo is to set your digital camera to shoot in black and white. Most recent digital cameras give you this option. Check your camera's user manual to select this method. Shooting in black and white allows you to view the photo on your camera's LCD screen so you can see exactly what you're capturing in black and white.

Like most things, though, the easiest way isn't always the best way. When you shoot in black and white you are severely restricting your options. If you decide later that you would like to print this photo in color, you can't. Generally, it's better to shoot in color, then change the photo to black and white later.

While you're learning to "see" a scene in black and white, it might be helpful to shoot a few exposures in black and white mode so you can see how the colors are displayed on your LCD screen. If you're satisfied with the picture, take the rest of the shots in color.

### Color modification within the camera

Another way to achieve black and white photos is to convert color photos to black and white on your camera. Many HP cameras

### Compare features and find your camera



#### » Digital cameras

From point-and-shoot models to cameras designed for the photo enthusiast, HP innovation makes it easy to shoot and share digital pictures.

allow you to modify colors and select color schemes in the Design Gallery menu. Select **Modify Color**, then **Black and white**. When you use this method, the camera creates a copy of the existing photo so you will have a color copy and a black and white copy on your memory card. Many newer HP cameras also include handy, on-board settings for sepia, color tints, and black and white tints for interesting monochromatic photos.

Although these methods work well, you might find that you want even more control over the resulting photo by using computer software to convert color exposures to black and white.

### Computer software

HP offers photo editing software called [Photosmart Essential](#), which you can download free. Other popular photo-editing applications include Jasc Paint Shop Pro, Adobe Photoshop, and Adobe Photoshop Elements, which are available for purchase.

Nearly every photo editing application available has a way to convert color photos into black and white -- and it's usually quite easy! Typically found in the main menu of the graphics editing program, this feature can be called **Change to grayscale**, **Monotone**, **Remove color information**, or **Change to black and white**. On some programs, this feature can be found under a special effects menu.

To make this conversion in Photosmart Essential, follow these steps:

1. Open the color photo in the program.
2. On the menu at the left, click **Special Effects > Black and White**.
3. Save a copy of the image by clicking the third icon on the lower-left part of the window, as shown in Figure 3-16.

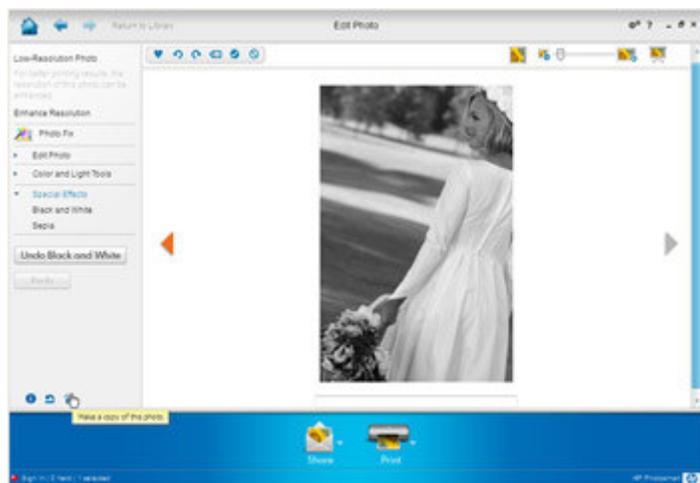


Figure 3-16: Saving an image changed to black and white in Photosmart Essential.

### [Enlarge image](#)

Using this conversion method is very easy, but you may feel that the results seem flat. This happens because the software drops the color information from the photo, resulting in low contrast between the high and low tones of the photo. To compensate for this effect, adjust the contrast before saving the black and white image. Most photo software programs have ways to adjust the

**contrast** directly, while others include a tool called **Levels**. The Levels tool, found in Photoshop and other photo software programs, gives you direct and easy control of the contrast using the highlights, mid-tones, and shadows in your photo.

Many photographers prefer to convert their digital photos to black and white using **color channels**, commonly referred to as RGB (red, green, blue) channels. Although it is simple to do, this method gives the photographer more control. To modify a photo using color channels, open the photo in a software program such as Photoshop. (Photosmart Essential does not support color channels.) Select the tool that allows you to either separate the colors into RGB or adjust the color channels.

If you have Adobe Photoshop, follow these steps:

1. Open the photo in the program.
2. On the menu at the top, click **Image > Adjust > Channel Mixer**. The Channel Mixer tool appears.
3. Click the **Monochrome** box at the bottom of the Channel Mixer tool and make sure the Red channel slider is at 100%, and you have the Preview box checked so you can see the changes as you make them.

Now you have a black and white photo made with the Red channel of RGB. When you have the Channel Mixer up you can adjust the other sliders of Blue and Green to manipulate the results to your liking. Finally, save the photo in its black and white form.

### Moving forward

In this lesson, you learned why black and white is still a popular medium for photographers. You discovered how photographers see a scene in terms of color and black and white. Finally, you learned several ways to achieve visually pleasing black and white photographs. Be sure to complete the assignment, take the quiz, and continue visiting the Message Board. In Lesson 4, we'll be discussing macro photography and how to take a picture of the wonderful little things in our world.

[Next steps >>](#)

### Congratulations on completing the lesson! Don't forget the following:

- » [Assignment: Dramatic black and white photos](#)
- » [Quiz: Lesson 3, quiz 1](#)
- » [Return to the lessons list to get a quick overview of the entire class](#)

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## Creating dramatic black and white photos assignment

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Assignments are designed to help you apply the information learned in the lessons.

### **Dramatic black and white photos**

1. Review the ways to change a color photo to black and white using your camera and your computer.
2. Look through the color pictures you have saved on your computer. Select a few photos to change to black and white. As you are making selections, ask yourself:
  - Will the photo have a different feel in black and white?
  - Will the photo be enhanced by converting it to black and white? Are there distracting colors or clashing colors that can be corrected by the conversion?
  - Does the photo have strong texture? Lines? Shapes? Will these aspects be more noticeable in a monotone?
  - Could the photo take on a different emotional appeal if it were black and white?
3. Shoot a photo in color, then take the same photo in black and white. Convert the color photo to black and white on your camera, then again on your computer. Compare the photos side by side to determine your favorite method for achieving black and white photos.

**Assignment Completed >>**

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## Lesson 3, quiz 1

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### Quiz: Lesson 3, quiz 1

Quizzes are designed to give you a chance to test your knowledge.

**1. Which of the following are good reasons why you might convert a color photo to black and white? Select all that apply.**

- A.  Your photo has distracting colors, but good contrast.
- B.  You want the viewer to focus on the details of the photo.
- C.  Your subject has a really interesting texture, but not exciting colors.
- D.  Your photo has a blown-out section.

**2. True or False: Shooting in black and white gives a photo an ageless feel.**

- A.  True
- B.  False

**3. Which of the following is not a component of good black and white photos?**

- A.  Contrast
- B.  Geometric shapes
- C.  Texture
- D.  Colors of equal tones

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## Lessons - Beyond basics: fundamental photography techniques

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### Beyond basics: fundamental photography techniques

- » [Lessons](#)
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- » [Class materials](#)

Welcome to your lessons. Some lessons may have quizzes or assignments for additional learning. Don't forget to join your fellow classmates and instructor on the message board.

Lesson 4 

» [View single page](#)

### Understanding macro photography

Children have a wonderful way of exploring the world around them. Whether it's because they are closer to the ground or just have an innate sense of curiosity and wonder, they see things that escape the attention of most adults. Children are amazed at the details of their world. The technique of macro, or close-up, photography helps you recapture that sense of awe and wonder by focusing on very small details and textures. Taking close-ups allows you to focus on even the smallest details that are difficult to see with the human eye -- almost like a personal microscope. Macro photography even freezes action, allowing you to see the world in ways the human eye doesn't allow. You can freeze the wings of a hummingbird in flight or gaze into the eyes of a fly. You can see minute details in flowers and leaves. Macro photography is a wonderful way of viewing everyday objects with a fresh perspective.

### Why macros?

Macro photography opens up a world of creative possibilities by allowing you to see the world with a different point of view. Focusing on small details can make a big impact in your photography. Let's take a look at an example. The photograph at the top of Figure 4-1 shows a perfectly nice photo of a large piece of driftwood on a beach. Though technically fine, it is a mundane photograph. The photo at the bottom of Figure 4-1 has much more visual impact. By getting closer to the driftwood, the photographer allows you to see the wood with a new, more interesting perspective.

### You can shoot like a pro



#### » **HP Photosmart M537 digital camera**

Get ready to shoot stunning photos. Our Photosmart M537 Digital Camera packs 6 megapixels plus 18x total zoom (3x optical, 6x digital) for eye-popping results. An array of convenient buttons and menus, an anti-shake feature, a bright, 2.5" display, in-camera red-eye removal<sup>1</sup>, a Design Gallery, and the ability to take video clips and print stills round out this Windows Vista Ready model's offerings.



Figure 4-1: The close-up of the driftwood has much more texture and is a more exciting photo.

Macro photography is also a useful tool when you want to avoid photographing distracting elements around an object. With macro photography, you have the ability to focus tightly on your subject and blur the distracting surroundings.

### **Selecting a good macro subject**

Most people like to take close-ups of flowers, leaves, and butterflies. These make terrific macro shots because of their interesting shapes and bright colors. But a great close-up can come from any object that will catch the eye when photographed. Any subject with fine detail and contrast can make an unusual and interesting macro shot. Everyday objects, people, and botanicals can all be sources for macro photography. Look for objects that would ordinarily be an element in a larger photograph, but when viewed closer would make a fascinating picture itself. Figure 4-2 shows the scalloped roofline of a building. Alone, a photo of a building may not be that interesting, but when you break it down into its smaller parts, it becomes a great subject for photography.



Figure 4-2: The building might not be exciting, but the texture and detail in the roofline make a much more exciting photo.

The world around us provides an abundance of subjects for macro photography. Butterfly wings, the petals of a flower, and details in leaves like the ones shown in Figure 4-3, are all subjects that get more interesting the closer you get.

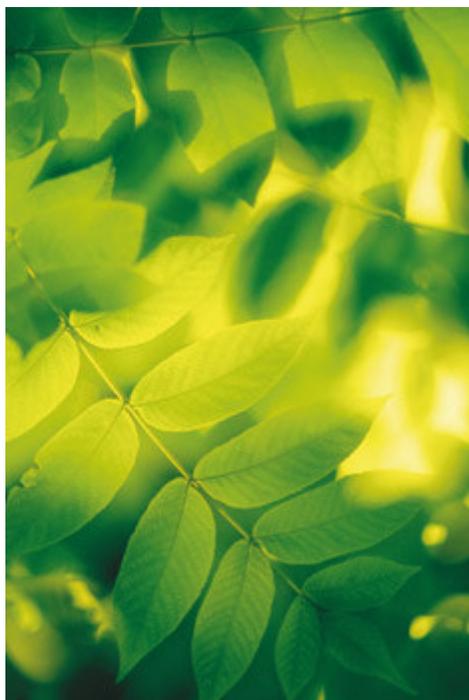


Figure 4-3: Instead of photographing a tree or shrub, zero in on the shapes of the leaves and the textures within them.

### **How to create close-ups**

Once you find an interesting subject, there are four ways to achieve stunning macro shots.

#### **Move closer to your subject**

The most obvious way to take a close-up shot is to position yourself close to your subject. Most cameras will focus between 12 and 18 inches from the lens. That means you have to be at least 12 to 18 inches away from your subject to get an in-focus photo. Check your camera's user manual to determine the closest

focusing point on the model you own.

Get close to the subject, filling the viewfinder with your object, then press the shutter button **halfway**, allowing the camera to focus on the subject. All digital cameras have a way to let you know if your subject is in focus. Focus indicators are typically green squares or a steady green light in the viewfinder. Some cameras even have a short beep when it catches a good focus. If the camera focuses at this distance, move closer and press the shutter button halfway down again. If the camera achieves focus, keep moving closer. When you reach a distance that is too close for the camera to focus, move back, away from the subject, until your camera achieves focus. This will show you the closest point your camera will focus on a subject. Once your camera indicates that it is in focus, press the shutter button all the way to capture the photo.

Most cameras will alert you when your subject is **out** of focus. An out-of-focus warning is typically a blinking box in the center of the viewfinder or a red indicator bar or light in the viewfinder.

### Zoom in

Once you are physically close to your subject, you can also use your camera's zoom function to get the composition you want. Use the zoom to get even closer to your subject. The closest focusing point may vary depending on the zoom setting, so be sure to position yourself so that your camera can still achieve focus before capturing your close-up. A nice result of using the zoom feature is that a more shallow depth of field is often achieved, blurring the background of your composition, like in Figure 4-4. This allows the viewer's eye to focus on the details of the subject. We will explore this concept further when we learn more about controlling depth of field in macro photography.



Figure 4-4: A close-up shot with shallow depth of field results in a blurred background.

### Use your macro or close-up shooting mode

Most digital cameras have a macro or close-up mode. The icon for this shooting mode is most often a flower. The macro mode allows you to get very close to your subject. Depending on your camera, this may be anywhere from six to 18 inches away from your subject. If your camera has this capability, you will be able to achieve super close-ups with shallow depth of field. Your incredibly detailed photos may even look like they were shot through a magnifying lens.

## Cropping

Another great way to get a close-up is to crop a high-resolution picture you have already taken. To do this with your digital photos, shoot at the highest resolution your camera can handle. If the photo is low resolution, cropping it will result in a blurry or pixelated print. Cropping was used to achieve a close-up in Figure 4-5. The top picture of the butterfly was cropped to reveal greater detail.

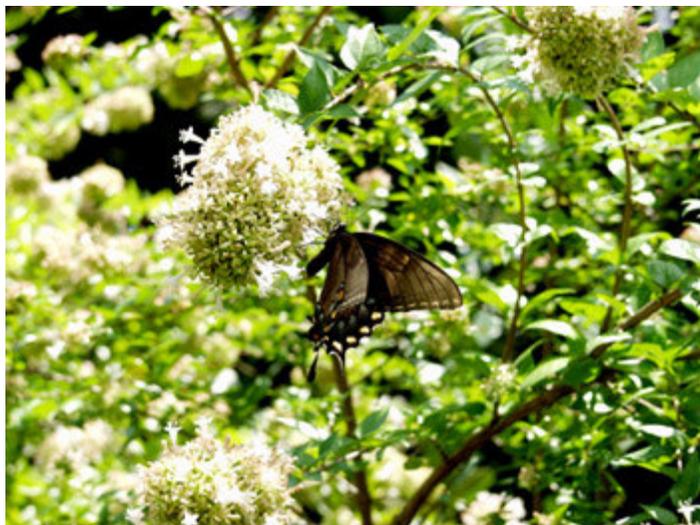


Figure 4-5: This butterfly photo was cropped to show more detail.

Figure 4-6 shows the same photo cropped in even closer for an artsy, abstract photographic effect. Cropping this closely allows the viewer to enjoy the texture and color of the butterfly wing. Note that as you get closer, you can see more of the pixels in the photo. Shooting at the highest resolution possible will allow you more creative freedom when cropping photos.

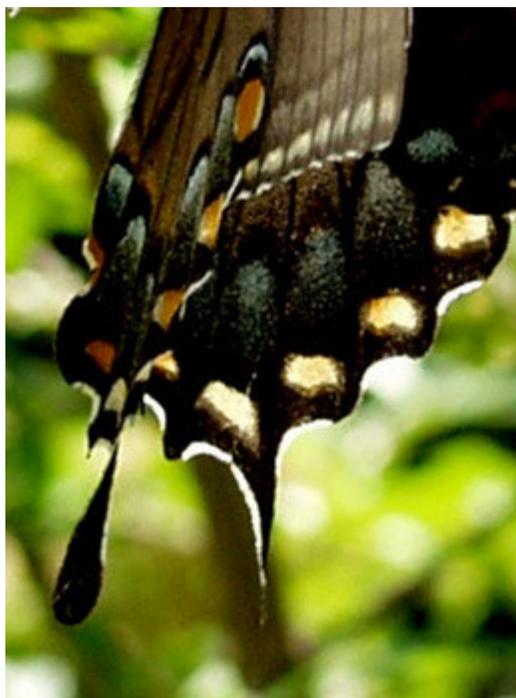


Figure 4-6: Extreme cropping produces an abstract photo, highlighting the texture and color of the butterfly wing.

Cropping is also a useful technique for removing distracting elements from otherwise beautiful photos. When you accidentally capture distracting elements, consider cropping them out of the photo so that your viewer is not distracted. Many HP digital cameras allow you to crop your photos with an in-camera Crop tool. Located in the Design Gallery menu, you can crop your photos without opening computer software! If your camera does not have this function, use your computer and software such as [Photosmart Essential](#) to create the close-up photo you want.

Next, learn more about how you can use depth of field to enhance your close-up shots.

### Using aperture to control depth of field in macro photography

In Lesson 2, you learned how the aperture controls the depth of field. Depth of field (DOF) is one of the most important fundamental elements of a photo because DOF determines what is in focus.

Many digital cameras have an **Aperture Priority setting** on them, sometimes called an **AV setting**. This setting allows you to adjust the aperture opening of the camera. When you set the aperture, the camera will automatically select an appropriate shutter speed which determines the amount of light needed to take the picture. This is a great mode to photograph in because it lets you control the depth of field while the camera does the difficult math.

Using your camera's zoom function also controls depth of field. When you use the zoom feature, a larger aperture opening is needed. Figure 4-8 shows this principle in action. The top photo illustrates a wide depth of field. Both the woman and the background are in sharp focus. The zoom feature was used to shoot the photo at the bottom of Figure 4-7. When the zoom was applied, the camera needed a larger aperture opening. The larger aperture created a shallow depth of field, blurring the background

### The perfect accessories for your camera



» **Digital camera memory**  
Digital camera memory cards allow you to store more photos on your digital camera, as well as saving you battery power and time.

of the photo.



Figure 4-7: Zooming and aperture affect the primary subject of the photo.

When you are shooting close-ups, keep in mind that the **smaller** the aperture opening (which is the larger number on your camera's aperture like 11, 16, or 22) the **more detail** there will be in both the background and foreground of your photograph. The **larger** the aperture opening (which is the smaller number on your camera's aperture setting like 2.8, 3.5, 4.5, or 5.6) the **less detail** will be in the background. So for portraits and macros you would usually select a larger aperture to blur the background. But for landscape photos, use a smaller aperture opening to get more detail in both the closest objects and background.

Figure 4-8 shows what can happen when you use a large aperture setting. The flowers actually make the grand cathedral in the background less imposing.



Figure 4-8: The flowers in the foreground are the focus of the photo, while the cathedral behind is blurred.

In comparison, although there are flowers in the foreground of the photo, the temple in the back is still the main subject of the photo. Using a small aperture setting ensures that everything is clearly in focus.



Figure 4-9: Using a smaller aperture setting, the temple is still the main subject of the photo despite the flowers in the foreground.

Next up, we'll see how lighting affects your close-up photos.

### **Having enough light to take a close-up picture**

Now that you understand how the aperture and zoom will help you take your close-up pictures to a new level, you are ready to learn how professional photographers control lighting for macro shots.

**Powerful features put you in control**



Figure 4-10: Lighting can be an issue when you're shooting very close close-ups like this one.



#### » HP Photosmart R837 digital camera

Check out our Photosmart R837—a thin, elegant camera packing 7.2 megapixels, 24x total zoom, a giant (3") color display for easy viewing, HP's anti-shake and slimming technology, and pet-eye fix, among its many innovative features. It's Windows Vista ready and ready to capture what's going on in your life, from ordinary moments to extraordinary events, vacations, and milestones.

#### Turn off your flash

When taking macro shots, be sure to turn off your fill flash. Using a fill flash at a short distance will "blow out" the photo, causing the pixels to become completely white with no usable information. If you find yourself in a low-light situation, do not be tempted to use the flash. Do what professionals do instead: adjust the ISO setting.

**ISO** stands for International Standards Organization, which was created to keep the emulsion standards for film consistent around the world. (It used to be called ASA: American Standards Organization.) The ISO is the numbering --100, 200, 400, etc. -- of film speeds that determines the film's sensitivity to light. In today's digital camera, ISO is still important because it's a measure of a camera's sensitivity to light. For general picture-taking, you want your ISO set at its lowest setting. This is 100 for most cameras. That setting gives you the best quality of picture if you have enough light. As you raise the ISO on the camera, your camera's sensor will be more sensitive to light. An unfortunate side-effect of higher ISO speeds is a slight degradation of the quality of the photo.

Photo quality degrades at higher ISO settings because the camera sensor is forced to be more sensitive to the light, allowing you to see the pixels of the sensor on the darker areas of your photograph. What you see in the background of the photo when you raise the ISO is called **noise**. This is a similar phenomenon as underexposure in film photography. Even with the possibility of noise or grain, raising the ISO is still a better option than shooting with a flash.

Be sure to reset your ISO speed after you have finished a low-light photo shoot. Forgetting to do so may result in grainy photos during your next photo shoot!

#### Reduce camera shake

Macro photography requires a steady hand. Steady your camera by using a tripod or other steady surface. Rest the camera on a table, fence, chair, or anything handy in order to achieve the best results. When all else fails, lean your body against a solid surface, such as a wall, to help reduce camera shake.



Figure 4-11: Use a tripod to steady the camera during extreme close-up shots.

Now that you understand how to achieve good results with close-ups, you're ready to explore your environment with a brand-new perspective. Enjoy yourself as you rediscover the wonders of the world that surrounds you.

As we mentioned in Lesson 2, newer HP cameras now come with a feature called Steady Photo that can reduce or eliminate the blur associated with camera shake. HP Steady Photo helps you to take sharp, clear pictures under lower light without motion blur due to either camera shake or subject motion. This is a great help for macro photography because it means you can keep your camera much steadier during the longer exposures required for close-up photography.

HP Steady Photo works by making the camera operate with shorter exposure times. This helps freeze motion, either camera or subject, in the photo. To learn more, watch this [demo](#).

Looking for a new HP camera? Read this [buying guide](#) for more information on what features to look for and how to choose the perfect camera.

### Moving on

Throughout this course, you have learned the techniques and tricks that professional photographers use to take stunningly beautiful and interesting photographs. You're ready to shoot portraits and landscapes with the eyes of a pro! Now you can make choices about using color or black and white to enhance your photos. You've also explored the wonderful world of close-up photography. With an understanding of the fundamentals, you are ready now to go beyond the basics and take your photography to a new level.

As you continue to improve your photography skills, come back often to the [HP Digital Photography Center](#) -- it's full of tips, tutorials, and resources for:

- Taking better photos
- Printing better photos
- Editing and enhancing photos
- Organizing and archiving photos
- Scanning your photos

- Using your photos as the basis for all kinds of creative projects

For now, be sure to practice your knowledge by completing the assignment and taking the last quiz. And be sure to come discuss your new-found knowledge with the instructor and your fellow classmates by visiting the Message Board.

**Next steps >>**

**Congratulations on completing the lesson! Don't forget the following:**

- » Assignment: Macro photography
- » Quiz: Lesson 4, quiz 1
- » Return to the lessons list to get a quick overview of the entire class

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## Understanding macro photography assignment

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Assignments are designed to help you apply the information learned in the lessons.

### Macro photography

Complete at least three of these exercises, then report back to the Message Board to let everyone know how you did!

1. Practice focusing on close-up subjects by selecting a subject and getting as close as possible. Press the shutter button only halfway to lock in the focus. Move back and forth near the object to determine your camera's closest focus point.
2. Find an everyday object to photograph. Take a macro shot of the item that allows you to view object with a new perspective.
3. Practice cropping several pictures you have already taken.
4. Learn how to adjust the aperture settings on your camera to control the depth of field in an image. By learning how to adjust this, you will expand your creative options in photography.
5. Learn how to change the ISO settings on your camera. Don't forget to change it back to the default setting. Even professionals occasionally forget to return the ISO settings to the original level, reducing the quality of subsequent photos.

**Assignment Completed >>**

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## Lesson 4, quiz 1

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### Quiz: Lesson 4, quiz 1

Quizzes are designed to give you a chance to test your knowledge.

#### 1. What are the three ways to get a good macro photograph? Select all that apply.

- A.  Zooming in closer with your lens
- B.  Focusing as close as you can to the subject
- C.  Using a fill flash
- D.  Cropping a photo

#### 2. How do you focus an autofocus digital camera?

- A.  Change the aperture on the camera.
- B.  Press the shutter button halfway down.
- C.  Use the zoom of the lens.
- D.  Tell your camera how far away your subject is.

#### 3. What is depth of field?

- A.  How big the field of flowers is
- B.  How big your lens is
- C.  Focusing close on a subject
- D.  The parts of an image that are in focus

#### 4. True or False: The ISO setting on your camera is how sensitive your camera's sensor setting is to light.

- A.  True
- B.  False

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[HP Digital Photography](#) > [Take better photos](#)



## Focusing basics: using depth of field

[» Return to original page](#)

Learn how to use aperture and depth of field to create dramatic, professional-looking photos with your digital camera.

- » What is depth of field?
- » How does depth of field work?
- » What are f-numbers?
- » How does aperture affect depth of field?
- » When to use the landscape shooting mode
- » When to use the portrait shooting mode
- » How and why you would adjust aperture manually
- » Recommended products



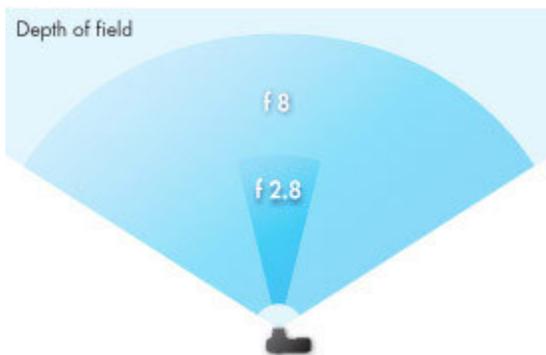
### What is depth of field?



You'll notice in some photos that objects up close are in focus, but everything in the distance is blurry. This is a classic technique known as adjusting depth of field. It's the perfect trick for beautiful portraits and close-ups of all kinds.

[» Back to top](#)

### How does depth of field work?



The size of the opening in your camera's lens, known as the aperture, determines what stays in focus and what is out of focus in your photos.

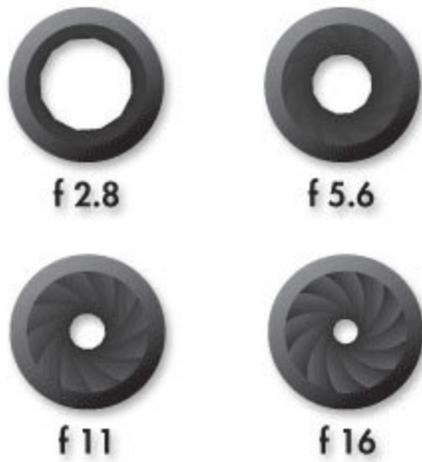
The space between the nearest and farthest point of focus is called the depth of field. In other words, your depth of field is the portion of your photo that is sharp and in focus.

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The areas in blue show what will be in focus based on different aperture settings.

### What are f-numbers?

These different aperture sizes are called f-numbers. Aperture size actually grows in diameter the lower the f-number. For example, f2.8 is a very big opening, whereas f16 is a very small opening.



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Aperture is measured in terms of f-numbers (the "f" stands for focal ratio). The aperture grows wider as the f-number gets lower.

### How does aperture affect depth of field?



A small aperture (high f-number) leaves everything in focus.

The smaller the aperture, the greater your depth of field will be. In other words, objects near and far will be in focus.

The opposite is also true. The bigger the aperture size, the more restricted your depth of field becomes. Only objects close to you will be in focus.



A wide aperture only focuses on close objects.

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### When to use landscape mode



In landscape mode, objects near and far are in focus.

Almost all digital cameras are built with two standard default depth of field settings—landscape and portrait. In landscape mode, the goal is to keep far away objects in focus, such as mountains or cityscapes. The aperture for landscape is set to a very small opening to bring as much of the scene into focus as possible.

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### When to use portrait mode



In portrait mode, only objects close to the camera will be in focus.

In portrait mode, the goal is to keep closer objects within several feet in focus, while leaving background details out of focus. In this case, the aperture is automatically opened larger.

If your subject is less than 20 inches or so away, use your camera's macro shooting mode. This mode allows you to focus even when you're extremely close to your subject. Check your user's manual to make sure your camera has this feature.

Learn more about [close-up photography](#).

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### How and why you would adjust aperture manually

There are many more aperture settings than just landscape and portrait. Those are just the two that manufacturers believe people use most. If your camera allows you to adjust aperture manually, you may have ten or more choices available.

The aperture priority (Av) shooting mode allows you to adjust aperture while your camera automatically chooses a corresponding shutter speed (the time it takes your camera to collect enough light for a photo). Or, you can go fully manual and choose a custom aperture and shutter speed.

Experiment with different f-numbers. Each one will subtly change your depth of field.

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### Recommended products

All [HP cameras](#) feature landscape and portrait shooting modes. The [HP Photosmart R967](#) lets you manually adjust aperture using either the Aperture priority (Av) or the Manual (M) shooting modes.

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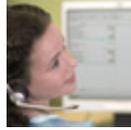
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## Panoramic photography

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Use your HP digital camera to bring multiple photos together into one breathtaking image.

- » Benefits of panoramic photography
- » How it works
- » In-camera panorama stitching and preview
- » Tips for taking panoramas
- » Printing panoramic photos
- » Recommended products



### Introduction

A panorama is a photo that is much wider (or taller) than a normal photograph. Whether you want to capture mountain vistas, lofty monuments, or a picture of the whole family, HP cameras make it easy to take breathtaking panoramic photos. Add an HP photo printer and HP panorama-sized photo paper to the mix, and you'll have professional-looking panoramic prints in minutes.

### Benefits of panoramic photography



Remember cutting half of your family from the last reunion photo because they just didn't fit into the frame? Or maybe you have been forced to decide between the mountains on the right and the sunset on the left because including both wasn't an option.

Here are some photo opportunities that are ideal for panoramas:

- **Nature and landscapes:** from mountain ranges to redwood trees
- **Cityscapes and architecture:** from city skylines to skyscrapers
- **Group portraits and events:** from stadium sports and festivals to reunions and weddings. (Pair your HP camera with a portable HP photo printer, and you can print your pictures on the spot!)

Find more inspiration for taking panoramic pictures. [Learn about travel photography](#) and [outdoor photography](#).

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### How it works

Panoramic photography works by stitching a series of regular-size images together. If you've already taken some pictures that you'd like to make into a panorama, you can do it with image-editing software such as [HP Photosmart Premier](#).

But HP digital cameras offer an easier solution: in-camera panorama preview and stitching.



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### In-camera panorama stitching and preview



Several new HP digital cameras are the first to offer in-camera panorama stitching—a feature that fuses up to five single shots together to create one seamless image—right in your camera. You don't need software to stitch your image together. You just connect your camera or memory card directly to a printer—no PC needed!

The following HP cameras have this revolutionary feature: [HP Photosmart R837](#), [R847](#), [R927](#), [R937](#) and the [R967](#) digital cameras.

[Take a tour](#) to see how in-camera panorama stitching and preview works.

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### Tips for taking panoramas



It's easy to capture panoramas with your HP camera. The in-camera guide leads you through the process of fusing individual photos onto one. Transparent photo overlays ensure that the pictures line up perfectly.

Here are some general tips to help you get the best results possible:

- Make sure your camera is as level as possible.
- Stand in the same position for all the shots you take.

Overlap your images by 30-50% horizontally. (The HP camera will guide you through this process.)

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### Printing panoramic photos

Panoramas are impressive images—even when viewed on your camera's LCD screen. But panoramic prints are even more impressive. The format is wonderful for displaying and sharing.

HP offers many printers with panorama capability.

- **Portable photo printers** print in a variety of sizes such as 4" x 6", 5" x 7", and 4" x 12" panoramas.

[See all HP portable printers.](#)



- **HP Photosmart all-in-ones** not only produce high-quality photos at home, but they can also copy and scan documents. Some models also feature faxing capabilities.

[See all HP Photosmart all-in-ones.](#)

- **HP photo printers** are easy to use, and they produce lab-quality prints at home-fast. They feature large LCD displays for previewing your pictures and memory card slots for PC-free printing.

[See all HP Photosmart printers.](#)

[Learn more](#) about the features of HP photo printers and compare models.

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## Recommended products



Use HP's best all-around photo paper, [HP Premium Plus 4" x 12" photo paper](#) to print beautiful borderless pictures, edge to edge. The high-gloss finish maximizes the intensity of the colors. And when printed on an HP printer, your pictures will rival professional photos and retain their brightness and beauty for generations.

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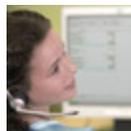
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## Black-and-white photography basics

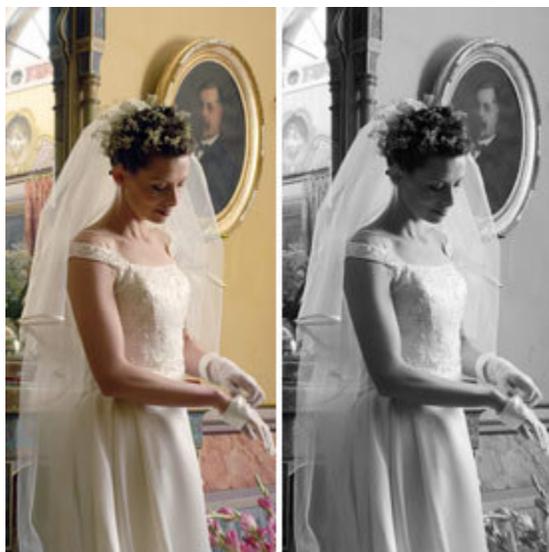
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Digital Photography techniques for black-and-white photography including camera settings and creative ideas for shots.

- » Why shoot in black and white?
- » Camera settings for black-and-white photos
- » Explore contrast
- » Add drama and emotion to portraits
- » Black and white shot ideas
- » Add artistic effects
- » Creative uses for your black-and-white prints
- » Recommended products



### Why shoot in black and white?

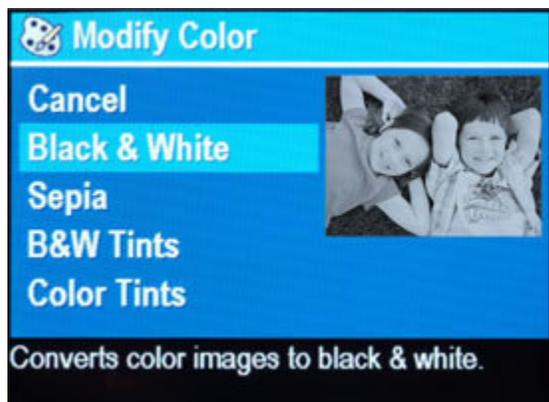


Black-and-white photography lends your photos a timeless look.

Think of Ansel Adams' majestic black-and-white landscapes, and you can appreciate the power that's possible when you leave color behind. Use black-and-white (or monochrome, as it's also called) techniques to heighten drama and emotion in your photos, and for giving pictures a timeless quality.

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### Camera settings for black-and-white photos



With digital cameras, you have three choices for getting black-and-white shots:

- **Shoot in black-and-white:** Check your camera's manual to see if you can shoot directly in monochrome. This lets you view the photo on your camera's LCD screen in black and white, so you can see exactly what you're shooting.
- **Convert color photos** into black and white in your camera: For many HP cameras, you can do this in the Design Gallery menu. Select "Modify Color," then "black and white." This creates a copy of an existing photo, so you'll have both versions.
- **Print in black and white:** You can print black and white photos from those taken in color by using the Grayscale setting, available in your printer preferences menu.

All of these methods work well. However, if your

goal is to create larger black-and-white prints, shooting in black and white will yield the best results.

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## Explore contrast



This photo uses high contrast to create interesting tension.

Contrast—the difference between the light and dark areas in a photo—is an essential part of black-and-white photography. There are three levels of contrast that you can experiment with when you shoot:

- **High contrast** means striking white and black tones, with minimal gray. It can heighten tension or add drama to photos.
  - Look for bright light and shadows (as in the image above) to shoot in high contrast.
- **Normal contrast** provides the most "realistic" presentation of an image, where some things in the photo are light or white, some are dark or black, and some are in-between, or gray.
  - Contrasts that are strong in color, such as red against green, look about equal in black and white, making for normal contrast.
- **Low contrast** keeps tones mostly in the mid-range, so there are lots of grays.
  - Atmospheric weather, such as fog, is perfect for shooting low contrast black-and-white photos.

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## Add drama and emotion to portraits



Removing color from this picture lets you focus on the emotion—not the red on her shoulder.

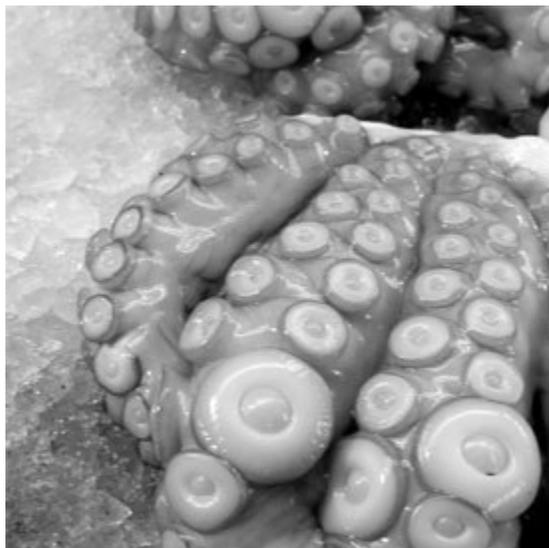
Emotional occasions, such as weddings, are ideal opportunities to shoot black and white. And don't forget group shots—black and white shots mean that clashing clothing isn't a problem.

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## Black and white shot ideas

Black and white lends itself to a variety of subjects:

- **Texture and patterns:** Try shooting interesting textures and lines, or patterns in nature. Details that are barely noticeable in color become more prominent and poetic.



Black-and-white lets you focus on other elements of a photo, such as texture.

- **Portraits:** Baby pictures, wedding photos, family portraits—candid or posed—gain a classic quality when shot in black and white.
- **Landscapes:** From the mountains to your backyard, outdoor shots look magnificent in black and white.

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### Add artistic effects



Many HP cameras have an innovative feature that allows you to add stunning effects to your photos. [HP Design Gallery](#) is easy to use, and you can do it right in the camera. Here are some examples of what you can do:

- Apply special effects, such as Antique and Watercolor.
- Add simple and artistic photo borders.
- Change color tints of your photos.

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### Creative uses for your black-and-white prints

Black-and-white pictures are ideal for sharing and displaying, especially with a few creative embellishments.

- To showcase your favorite shots, try these [family photo frames](#).

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### Recommended products

Check out HP's [full line of digital cameras](#)—there's one for every budget and interest level.

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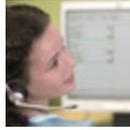
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## Close-up photography

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Digital Photography techniques for capturing the detail of every close shot.

- » Capture intimacy with a close-up
- » Use macro mode
- » Use your camera's zoom
- » Know when to use manual settings
- » Keep your subject centered
- » Turn off your flash and use other light sources
- » Get creative close-ups
- » Recommended products



### Capture intimacy with a close-up

A close-up brings the viewer in and captures all the hidden details you might not ever see otherwise. It also helps to frame your subject, away from busy, distracting backgrounds.

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### Use macro mode



Set your camera to close-up or "macro" mode. Check your user manual for exactly how to do this, or look for the shooting mode with an icon depicting a flower. In this mode, your camera will take sharp pictures within inches of your subject.

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### Use your camera's zoom

Without a macro shooting mode, your camera will have a hard time focusing really close to your subject, but you can use your camera's zoom function.

To get close to your subject using your zoom, you actually have to stand farther away and zoom in. You can catch roughly the same shot as with a macro function. Still, there's no substitute for a true macro shooting mode for getting in really close and sharp.

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### Know when to use manual settings



See how the subject is sharp, but background is soft.

For shots farther away than 12 inches or so, it's best to switch to portrait shooting mode. This is a factory preset that reduces your **depth of field** and makes objects within a few feet of you sharp, while blurring anything in the distance.

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### Keep your subject centered



When using a shallow depth of field, you don't have much room to play with. When your subject is really close up, position it right in the middle of the frame to make sure it comes out sharp.

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### Turn off your flash and use other light sources



Your camera's flash will sometimes wash out color in a close-up photo or cause it to look overexposed due to too much light. In these cases, turn your flash off and supplement with available natural light from windows or lamps.

The daylight hours are the easiest time of day for your camera to focus automatically. To help you get the shots you want at night or in low-light conditions, use a tripod or you may get some blur if you don't hold the camera steady.

Learn more about [night and low-light photography](#).

» [Back to top](#)

### Get creative close-ups

The opportunities for beautiful close-ups are almost limitless. Here are just a few ideas to get you started experimenting.

- **Found objects in nature**  
Photograph autumn leaves, the bark of a tree, or interesting insects.



- **Abstract portraits**

Instead of a traditional portrait, capture close-ups of parts of a person, such as their eyes or hands.

- **Interesting textures**

When you get really close to objects, you can discover hidden beauty.

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### Recommended products

Use our [digital camera buying guide](#) to compare models and discover the HP digital camera that's right for you. All the information you need is here, so you can make an informed, confident decision.

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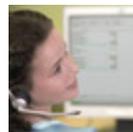
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## Take better photos: fireworks

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Whether for the Fourth or New Years, learn techniques to help you capture all the magic and majesty in your fireworks photos.

- » How to prepare
- » Stake out a good position
- » Turn off your flash
- » Shooting at dusk
- » Capturing multiple bursts
- » Panoramas that pop
- » Photos in succession
- » Photographing people
- » Tips and tricks
- » Recommended products



### Introduction

The Fourth of July immediately brings to mind beautiful bursts of light and color booming and cascading from the sky. Naturally, it's an ideal opportunity for taking fantastic photos. We'll show you a few creative ideas for photographing fireworks with your digital camera and simple techniques for capturing unforgettable images.

### How to prepare

Before you head off to the show, you're going to need a few things:

- **Bring memory for the memories.** Remember to keep extra memory cards handy, and leave yourself enough memory for the big finale (you'll be clicking away like crazy). And don't forget a backup set of batteries, just in case.
- **Shed some light.** When taking photos at night (or under any dark conditions) it's wise to carry a small flashlight (to find those fresh batteries, for example).
- **Bring a tripod.** For fireworks photos, it's a good idea to use a tripod to keep your camera steady. If a full-sized tripod is too big for you, consider the *Gorillapod* by Joby. It's the perfect way to steady your camera on almost any object. (Check out alternatives to using a tripod in the Tips and tricks section).

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### Stake out a good position

Make sure you arrive early. You don't want to be running around trying to find that choice spot once everyone is already there. Avoid setting up near power lines, tree branches, and other obstructions that can ruin your fireworks shot. Also, while bridges are one of the greatest places for watching fireworks, they're far from ideal for taking slow exposures. Passing vehicles can cause enough vibration to blur your photos.

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### Turn off your flash

Before you begin shooting, there's just one more thing to know: Don't use your flash when photographing fireworks. A flash freezes the moment, but you want your shots to take a little longer (to capture all those dramatic cascading light trails). The Night Scenery shooting mode on your HP camera is designed just for these kinds of low-light, no-flash situations. For cameras with manual controls, here a couple more options

- Adjust shutter speed  
If you have a tripod, set your shutter speed to several seconds (3 to 5). This is long enough for a beautiful fireworks shot.
- Adjust ISO

If you don't have a tripod, increasing your ISO (your camera's sensitivity to light) allows for shorter exposures without blur. The trade off is that you add more grain or "noise" to your photos.

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### Shooting at dusk



All right, let's get snapping. Sometimes a fireworks display will start before it's completely dark outside. This is the perfect opportunity to catch the vibrant colors of sunset, along with shots of the colorful bursts of light from the fireworks. With the lingering twilight, you're also likely to catch a lot of things that you wouldn't normally see in a night shot (like the capitol building or boats on the river). Most cameras (including your HP camera) have a Sunset shooting mode that will help.

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### Capturing multiple bursts



It's spectacular when you can get more than one or two bursting fireworks into a single picture. If using the Night Scenery shooting mode or lowering the ISO doesn't give you enough time for the shot you want, wait for the show's finale. There will be more light and more simultaneous bursts. As long as you keep your camera still, either by setting it on a stationary object or using a tripod, you can achieve great results.

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### Panoramas that pop



A panorama is a series of photos digitally stitched together to form one wide image. You can use this wide format and include surrounding scenery, even without a flash. The bright lights from a fireworks display will illuminate a cityscape, a body of water, or other scenic landscape nicely.

It will take some patience to get this shot right. Photograph one burst and wait for those fireworks to dissipate. Move your frame and capture the next explosion, and so on. In the end you'll have a photo that appears to have several bursts happening at once—in all their panoramic glory!

Several new HP digital cameras offer in-camera panorama stitching—a feature that fuses up to five single shots together to create one seamless image—right in your camera. No software needed!

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### Photos in succession

Multiple photos over time show the progression of fireworks being launched and then exploding. Avoid shutter lag (the time between pressing the



trigger and the camera taking the picture) by pressing the trigger halfway down. When the right moment comes, press all the way down to instantly capture the desired image. You can also set your HP camera to the Landscape shooting mode. This fixes the focus for distant objects so your camera won't have to focus each time.

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### Photographing people

Since you won't be using your flash, turn around during a fireworks display to catch people's reaction. Later, you can print your photos and display them next to other fireworks photos for a unique perspective on the night. You can even print one large photo of the burst and include two or three smaller pictures of people's reactions below.

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### Tips and tricks

Try these techniques to consistently take outstanding Fourth of July photos.

- **Hold still.** Any camera motion will blur a long exposure, and it's almost impossible to hold your camera steady enough in your hands. Instead, brace your camera against a railing or other stationary object, or use a tripod. Tripods come in many different sizes-some are even small enough to fit into a purse or camera bag. The [Gorillapod](#) is a flexible tripod that can wrap around almost an object. Your camera doesn't even need to be upright.
- **Use a timer.** Even when your camera is steady, the pressure of your finger on the trigger can cause enough movement to blur your photo. If this becomes a problem for you, consider using your camera's timer. That way, you don't even have to touch the camera while it photographs an image.

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### Recommended products

Use the [HP Digital Camera Buying Guide](#) to compare, consider and choose the HP digital camera that's right for you. You'll find all the information you need so you'll be ready to make a decision when you visit your local HP retailer or purchase online at the [HP Home & Home Office Store](#).

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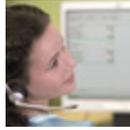
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## Take better photos: Halloween

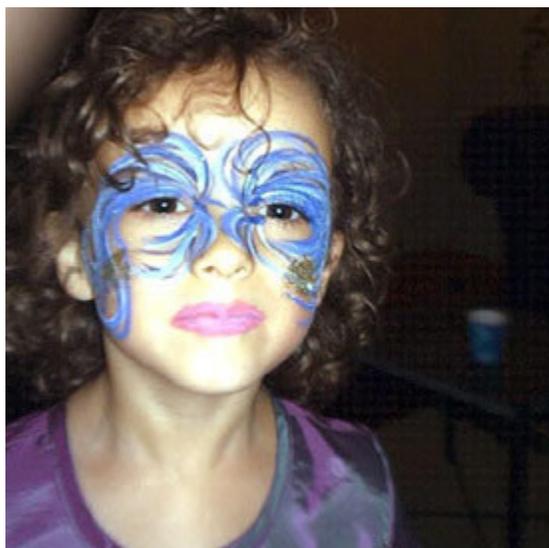
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Scare up terrific Halloween photos with our tips for lighting, shots, and more.

- » Get uncluttered shots
- » Add extra light inside pumpkins
- » Take photos at twilight
- » Terrific trick-or-treat shots
- » Halloween photo party favors
- » Product recommendations



### Get uncluttered shots



Get in close and focus on one aspect of a costume—in this case, the makeup.

- Whether photographing costumes, decorations, parties or Halloween parades, pick the most important facet and zero in on it by moving in close. By doing this, you'll avoid a common photography error: cluttered pictures with no discernable subject or not enough detail.
- You can also narrow the focus of your photos with color. Try snapping a field of orange pumpkins, for example.

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### Add extra light inside pumpkins



To take pumpkin pictures that really shine, you need to let the light through—and add extra wattage. Try these tips:

- Cut extra-large openings for eyes and big, jagged smiles.
- Use two or three candles inside the pumpkin. Or, place a flashlight in the pumpkin.

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### Take photos at twilight



Use available light at dusk for dramatic effects.

Plan to take pictures in the hour leading up to sundown. This time of day is ideal because there's still some light in the sky, which means you can take pictures without a flash. Ideally, use a tripod during twilight hours.

Other ways to deal with low-light conditions include:

- **Turn off auto-flash:** Your camera's automatic flash will come on at night, but for better results, turn it off and use a flashlight to illuminate spooky subjects from the side or below.
- Use the **Night Portrait** setting on your HP camera, which uses flash and a long exposure to avoid blurry results. Set your camera on a tripod for best results.

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### Terrific trick or treat shots



If you're welcoming children to your door, work with a partner: Have one person open the door and greet the kids while the other snaps away. When taking your kids trick-or-treating, position yourself so that you can photograph them as they receive treats.

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### Halloween photo party favors



Photos make excellent party favors. Whether you're hosting the Halloween party or attending one, have your digital camera and a portable photo printer on hand. Get people to pose in costume or with props, and send them home with instant photo memories of all the fun.

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### Product recommendations

Get a digital camera that has a night shooting mode and manual overrides. [See HP's selection of digital cameras.](#)

A compact photo printer is perfect for Halloween parties. [See all HP compact photo printers.](#)

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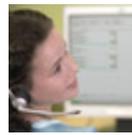
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[HP Digital Photography](#) > [Take better photos](#)



## Lighting basics for better photos

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Improve your photos by controlling your camera's flash and taking advantage of available light in all conditions.

- » Bright conditions indoors
- » Bright conditions outdoors
- » Tools for outdoor conditions
- » Low-light conditions indoors
- » Low-light conditions outdoors
- » Recommended products



### Bright conditions indoors



Bright light from a window can make your subject too dark.

You can greatly improve your daylight photos indoors by keeping the following things in mind.

- **Let in all the light you can**  
Provide as much natural light as possible by opening curtains and blinds. This way you can keep from using your camera's flash, which generally washes out color and casts harsh shadows.
- **Avoid standing in front of windows**  
Placing your subject in front of a bright window will leave them silhouetted against the bright light shining in. The light will often appear too bright, and your subject too dark.

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### Bright conditions outdoors



Photos taken at dusk or dawn produce softer shadows.

There is such a thing as too much light when photographing outdoors. Use these tricks to preserve color and detail.

- **Avoid harsh midday sunlight**  
The same way your camera's flash can wash out color, the intense midday sun can mute colors and cast deep shadows, reducing warmth and detail.

The best time of day for photos is either early morning or early evening. Colors are warmer and shadows are softer.



Intense sun mutes colors and casts deep shadows.

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### Tools for outdoor conditions



HP adaptive lighting balances brightness and detail in sun and shade.

- **Use HP adaptive lighting**

For outdoor scenes with a mixture of sun and shade, some HP cameras have adaptive lighting technology. In areas that are too dark, adaptive lighting adds just the right amount of light. It also brings detail out in areas that are too bright.

Select HP R-Series digital cameras include adaptive lighting bracketing which can be turned on to automatically to create three separate photos at once: normal, adaptive lighting low, and adaptive lighting high. This almost guarantees one of the three will have just the right balance of light and detail.

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### Low-light conditions indoors



- **Disable your flash**

Using your flash should be a last resort in most situations. It mutes color and casts stark, deep shadows (especially unflattering for portraits).

Press the flash button on your HP camera and select **Flash off**.

Take advantage of indirect, ambient light from lamps, overhead lights, or candles instead. Set your camera to the Auto shooting mode. It will slow its shutter speed (the time needed to capture enough light) when the flash is off. To avoid blurring, use a tripod or stable surface to keep your camera steady.

There are other tools you can use to improve your indoor shots.



Photo taken with flash on.



Photo taken without flash. Colors are more realistic.



Photo taken without white balance adjustment, and one with white balance set to Tungsten.

- **Adjust white balance**

Artificial light can produce unnatural tinting in your photos. Many cameras will compensate for this automatically. As accurate as automatic white balance is most of the time, it's not always perfect. For more control, set your camera to Tungsten (normal incandescent bulbs), or Fluorescent to fix color.

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### Low-light conditions outdoors



A long exposure can produce breathtaking night shots.

The same rules for low-light conditions indoors apply to the outdoors as well. Avoid the flash and use a tripod to steady your camera. Holding perfectly still is especially important outdoors. You will often have even less light than when you're indoors. This means longer exposure time (sometimes as long as a few seconds).

Learn more about [night and low-light photography](#).

Here are a couple additional options to improve outdoor photos.

- **Adjust ISO for light sensitivity**  
If your camera allows you to adjust ISO, set it low (somewhere around 50 or 100) for rich detail in low-light.
- **Use Night Portrait shooting mode**



For low-light photos with moving subjects like people set your HP digital camera to the **Night Portrait** shooting mode. This uses the flash very briefly at the beginning of a long exposure to capture detail. It still helps for you to keep your camera as steady as possible, but it's not absolutely necessary in this mode.

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### Recommended products

All [HP digital cameras](#) allow you to adjust ISO. To find the right camera for your needs, check out the [HP digital camera buying guide](#).

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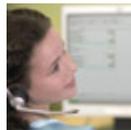
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## Night and low-light photography

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Use your digital camera's built-in features to capture dramatic photos in dark or low-light conditions.

- » Three keys to successful night shots
- » Adjust your camera settings
- » Experiment in different conditions
- » Photo ideas and suggested exposure times
- » Combine your skills
- » Product recommendations



### Three keys to successful night shots



Before you start shooting night photos, here are the three most important things to remember:

- **Disable your flash**  
Bring out breathtaking detail in low-light conditions by using a long exposure (the time your camera takes to collect light).  
  
Select **Flash** from the capture menu, then select **Flash off**. Press **Menu/Ok**.
- **Use a tripod**  
Long exposures require you to hold your camera perfectly still to avoid blurring. A tripod really helps. If you can't get your hands on one, you can try bracing yourself against a stationary object like a tree, or a wall.
- **Use your timer**  
Even when a camera is on a tripod, your finger pressing the trigger can cause enough movement to blur a photo. You can avoid touching the camera altogether by using the timer.  
  
Select **Timer** from the capture menu and press **Menu/Ok**.

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### Adjust your camera settings

The key to getting a successful night shot like this is wide aperture, low ISO, and a slow shutter speed.

- **Aperture**  
If your camera has manual settings, you can widen the aperture to allow more light to come through the camera lens (see above), which is vital at night when there isn't much light to begin with.  
  
Select either the **Av** (Aperture priority) or **M** (Manual) shooting mode on your camera to adjust aperture. The widest opening for most lenses is f2.8.  
  
Learn more about aperture, [lighting](#), and [flash](#).

- **ISO**



A camera's ISO number dictates its sensitivity to light. A higher ISO (a "fast" ISO) will make your camera more light-sensitive, but will add more grain (or "noise") to your photo. If your camera allows you to adjust ISO, set it low (somewhere around 50 or 100) for sharp detail in low-light. This setting will increase exposure time slightly, but will produce a much richer photo.

- **Shutter speed**

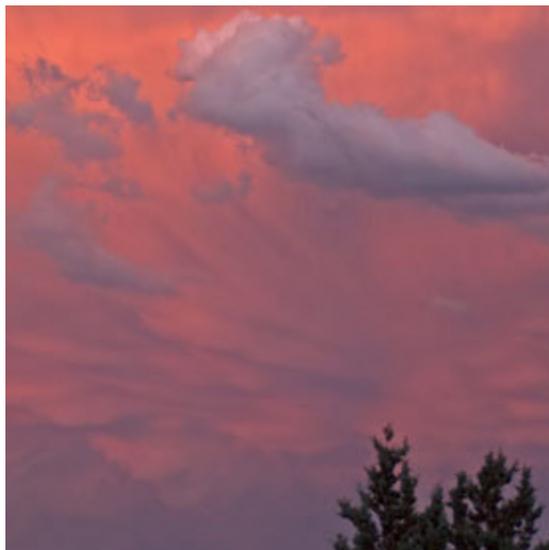
Because you're not using your flash, your shutter speed has to be a lot slower to get enough light. The shutter speed in this shot was at least a few seconds-pretty slow in camera terms.

Select either the **Tv** (Shutter priority) or **M** (Manual) shooting mode on your camera to adjust shutter speed. The slowest shutter speeds on most cameras range from a few seconds to a "bulb" setting (shutter remains open as long as you want).

Several HP digital cameras feature a **Night Scenery** shooting mode. This automatically disables the flash and uses a long exposure time.

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### Experiment in different conditions



Experiment with your camera settings and shoot a lot of photos. Soon, you'll get a feel for which settings are best for each low-light situation. Here are some quick guidelines for how each of these conditions will affect your picture taking.

- **Dusk and dawn**

The early evening and morning hours are a perfect time to catch a nighttime glow from the city skyline, or the bright moon. And because there is some light in the sky, shutter speed can be set a little higher, lowering the chance of blur.

- **Evening**

Darker is better when you want to get strong contrast in your photos. But the darker it is, the longer the exposure will have to be. The result is more breathtaking shots.

- **City streets**

Significant amounts of light can be emitted in bustling public places, reducing the need for really slow shutter speeds. Use this to your advantage when taking night photos.

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### Photo ideas and suggested exposure times

Here are some suggested exposure times for different types of subjects:

- **Christmas lights:** 1/4 to 3 seconds (pictured) of exposure.
- **Cityscapes:** 2 to 30 seconds of exposure.



- **Moving water or fountains:** 2 to 5 seconds of exposure.
- **Portraits:** 3 seconds with flash. With some HP cameras you can use the **Night Portrait** shooting mode, which automatically adjusts your shutter speed for night shots and adds a quick flash at the end of the exposure to capture your subject in detail.

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### Combine your skills

As you become more adept at night photography, explore using low-light techniques in other ways.

- **Fireworks**

Get helpful tips for taking breathtaking [photos of fireworks displays](#).

- **Halloween**

Take [hauntingly beautiful pictures](#) this autumn.

- **Black and white**

The combination of [black-and-white photography](#) with low-light conditions can be spectacular.

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### Product recommendations

Many [HP digital cameras](#) allow you to adjust ISO. The [HP Photosmart R927](#) and [R967](#) let you manually adjust aperture and shutter speed (up to 30 seconds).

These models are also equipped with two especially helpful features. Shutter priority shooting mode allows you to choose a custom shutter speed, while the camera selects a corresponding aperture to fit. Aperture priority lets you choose a custom aperture, leaving the camera to decide the best shutter speed. If you want complete control, you can switch to Manual mode as well.

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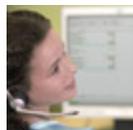
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