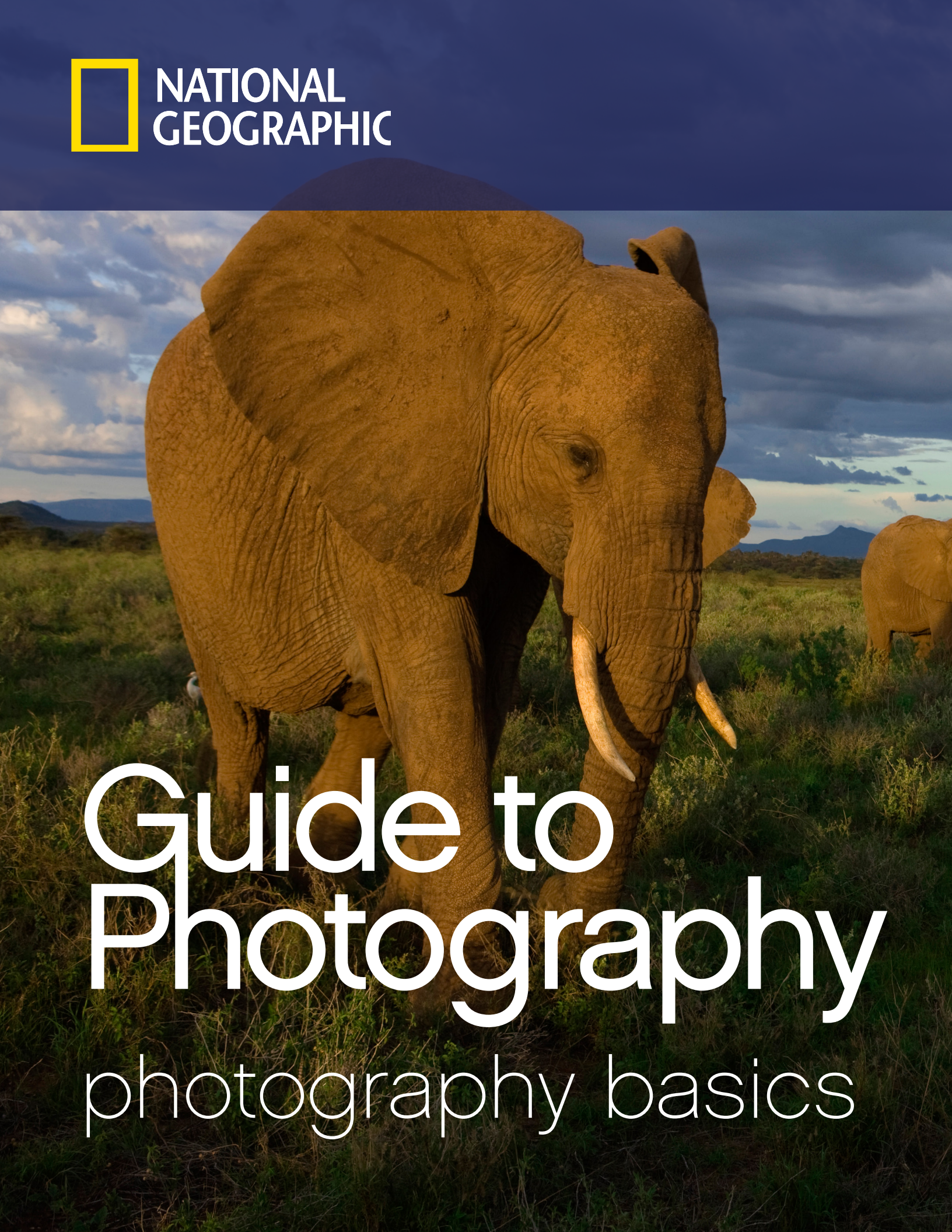
NATIONAL GEOGRAPHIC



Guide to Photography

photography basics

Taking a Picture

CREATING A PHOTOGRAPH requires only the single act of pushing the button that triggers the shutter, which is a moving curtain that lets light fall on the digital sensor for a set length of time. Everything else is preparation and internal mechanics. Photography, in other words, can be 99 percent anticipation and 1 percent action. The parallel between a photographer and a hunter, in which the trigger pull is analogous to the push of the shutter button, is obvious. Both shoot. But a hunter sends out a missile; a photographer draws in reflected light. He or she must make an artistic calculation beyond simple aim. Modern digital SLRs, increasingly user-friendly, allow photographers to concentrate more on that aesthetic than on mechanics.

1. Framing the Picture

- Light enters the lens.
- Light bounces off reflex mirror and through pentaprism to viewfinder.
- Photographer sees what the camera sees through the viewfinder.

2. Taking the Picture

- Photographer depresses button.
- Reflex mirror rises.
- Shutter opens at designated shutter speed.
- Aperture opens to designated measure.
- Light travels straight to sensors.

IT MAY BE THE MECHANICS of the camera that capture an image, but it is the anticipation of the photographer that captures a moment. **Marc Ewell/National Geographic My Shot** China

The Art of Photography

PROFESSIONALS often say they "make," rather than take, pictures—a distinction that implies creative collusion between machine and operator, rather than a simple confluence of light and space.

In every carefully considered photographic accomplishment, four elements are vital: subject, composition, light, and exposure. In this book, we will use the shorthand of the icons below to highlight the choices that make a successful photograph.

Rita Mantarro/NG My Shot Puglia, Italy

SUBJECT

Most photographers document only family history—birthdays, weddings, graduations, or holidays. Others expand to nature or sporting events. A few make art. And some make art of all their pictures, no matter the subject. Shoot what's important to you.

COMPOSITION

Good composition usually means unity and balance in shapes, colors, and textures. But mood, emotion, and actions are often enhanced by flouting conventional photographic rules; if it works, it works.

LIGHT

Landscape photographers will say they're "waiting for the light." Photojournalists must often use ambient light. A studio photographer creates his or her own, with lamps. But all know that light—low, soft, harsh, warm, or diffuse—is critical.

EXPOSURE

The amount of light that falls on the sensor must be calibrated by the size of the aperture opening and the speed of the shutter. Proper exposure is considered to be a full range of tones, from deep shadows to bright highlights, all with good detail.

Focal Point

EVERY PHOTOGRAPH has a point of interest—and that point should be clear to the viewer. We look at photographs in much the same way we read text—from left to right and top to bottom in Western culture. The viewer's eyes should not roam aimlessly around the frame. They should be guided to the point of interest. But that point should not always be in the center of the frame. Such shots can seem static, and thus boring. An off-balance composition can be very entertaining to the eye.

A focal point placed just to the left of center, for example, guides the eye to explore the remainder of the frame, where secondary information such as weather and environment can be used to round out the mood and fullness of the shot.

CLOSER, CLOSER

"Get closer" has become one of photography's mantras, and it usually holds up. Make the object of your shot stand out. If you can't move closer physically, use a longer lens.

Always think about what you are trying to say with an image. If you are making a photograph of an isolated farmhouse on the prairie, it must be large enough so that people can see what it is, but it shouldn't fill so much of the frame that the viewer loses the sense of its environment.

THE BALTIMORE ORIOLE investigating an orange in the foreground—clearly this photo's focal point—creates an energetic counterweight to the bird out of focus behind. **Mark Lewer/NG My Shot**

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Framing

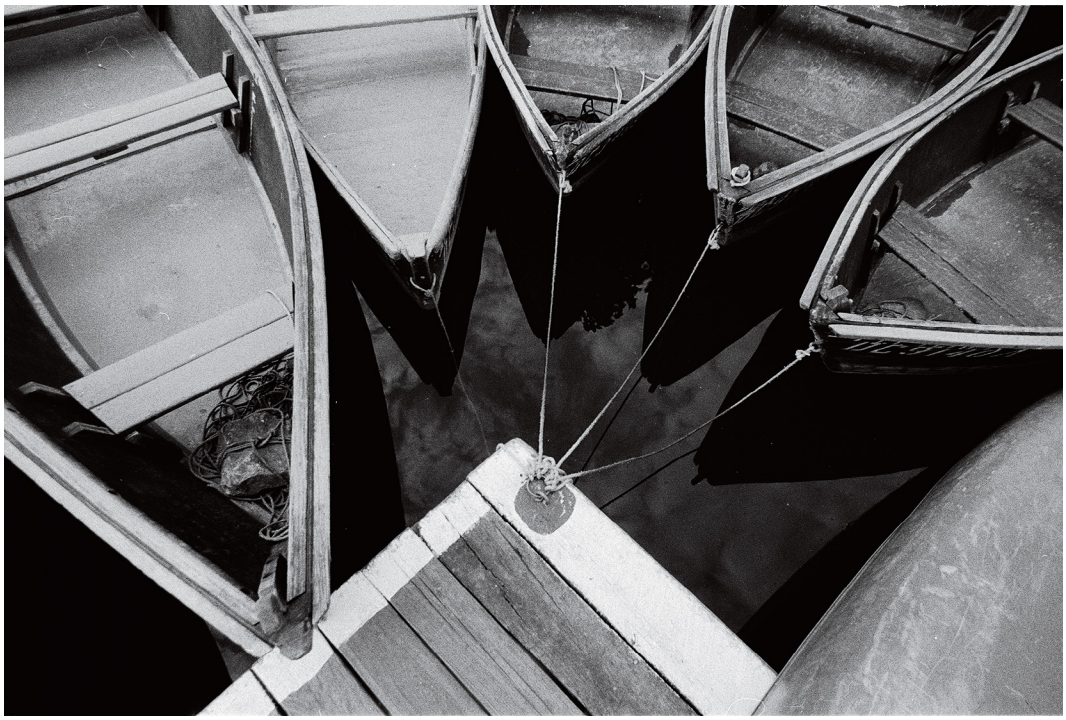
BECAUSE MOST OF US hang pictures on the wall and peer through windows, we have a well-developed sense of frames. But just as a hanging frame enhances a photograph, a frame element within the picture itself can enhance or emphasize the point of interest. A "frame" in these terms is an object in the foreground that lends depth to the picture. It might be a branch with leaves, the mouth of a cave, a window, a bridge or column, or a colorful doorway.

FRAMES SHOULD SUIT SUBJECT

Framing objects should be part of the environment, have aesthetic value, and be appropriate to the subject. Just as a Rembrandt painting is unlikely to benefit from being displayed in a thin aluminum frame, a centuries-old mosque should not be framed by new concrete covered with graffiti.

The interior frame should not draw the viewer's eye away from the center of interest. If it is much darker than the subject, or in deep shade, it may be rendered as a silhouette. The frame should be either in sharp focus or completely blurred. For architecture, it's best to keep it sharp. For horizontal landscapes, a foreground of flowers or bushes can frame the background while hiding irrelevant clutter or space.

▶▶ Don't use the camera rectangle to frame all your pictures. Look for other framing possibilities within the scene, such as an arch or the shaded walls of a canyon.



AJ Wilhelm/National Geographic My Shot Washington, D.C., U.S.

▶ The Rule of Thirds

IF THE CENTER OF ANY PICTURE is not a satisfying resting place for the eye, where is the best resting place? Artists, designers, and photographers have learned to follow the helpful concept known as the "rule of thirds." Imagine that the camera's viewing screen is etched with four grid lines (as in the photo below), resembling a tic-tac-toe game. As you look through the viewfinder at a scene, place the subject at one of the imaginary grid intersection points, often called a "sweet spot." This gives the image an overall dynamic balance. You can also place a center of interest and a counterpoint at opposing intersections.

Balance the composition so that both sides are pleasing but not of equal size, shape, or color. A small area of vivid color in one part of the picture will balance a larger area of less intense hue. A small animal will balance a large inanimate object. It will usually be clear which intersection is best, because whatever else is in the frame will either strengthen or detract from the image.

▶▶ **To get an idea of how effective off-center composition is, glance at some magazine covers. You'll notice that the subject's head is usually in the upper right of the frame so that our eyes travel first to the face and then left and down.**

IMAGINE YOUR PHOTO divided by lines into nine parts. Composition works best when the focal point occurs near one of the "sweet spots" where lines meet. **Yves Schiepek/National Geographic My Shot** Vietnam

Leading Lines

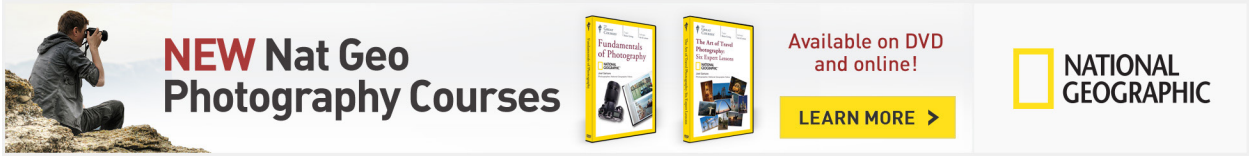
LEADING LINES ARE LINEAR ELEMENTS in a composition that can carry the viewer's eye to the point of interest. They also create a three-dimensional quality on a two-dimensional image, through perspective. The painted center stripe on a highway, for example, seems to get smaller as it recedes, both as you're driving and as seen in a photograph. Conversely, a strong line badly positioned will tend to take the eye off to the edge of the picture and shatter the composition.

Landscapes and cityscapes are full of linear elements—roadways, train tracks, fencerows, ridgelines, tree branches, rivers and streams, boulevards, and rows of lights. Perhaps there is a driveway snaking its way to a farmhouse, or a fence slicing through the wheat, or the sweep of a curb, as in the photograph on the right, which ties two people into a relationship that otherwise may have been overlooked. Most subjects contain strong lines, some as obvious as a river, others as insubstantial as a shaft of light or a fold in a scarf.

Leading lines are most effective as diagonals, and they work particularly well when the lines originate from the bottom corners of photographs: a winding road, for example, leading to an old church, or the Great Wall of China starting in the bottom corner of your frame and then leading the viewer's eye into the center of the picture. Depth of field is important when composing leading lines. If the line begins at the bottom of the frame, both the line and the main subject should be in focus.

Lines also have a more subtle effect on the viewer. What mood do you want to convey? Lines will help you do so. Horizontal lines usually convey serenity. Vertical ones emphasize power, and diagonal ones imply action.

▶▶Leading lines help carry your eye across the image, making it look and feel more three-dimensional. Winding roads, power lines, staircases, and fences are just a few of the features that can add this element to an image.



Sense of Scale

WE HAVE ALL SEEN PHOTOGRAPHS of the Leaning Tower of Pisa in which a person in the foreground seems to be holding up the tower with his hands. Such a photograph is a trick of scale, a play on the relative size of objects in the frame. If posed side by side, the tower of course would be much bigger than a man.

Photography can sometimes distort scale, especially when objects are not recognized. Archaeologists and other scientists who gather unfamiliar artifacts often place a simple ruler beside the object before photographing it. Knowing the exact length of 12 inches allows the viewer to visualize the size of the artifact.

DOES IT READ?

When we look at landscape photographs, our minds make a series of mental adjustments based on previous experience. We've seen so many pictures of the Grand Canyon, for example, that we can easily work out its size. It's much more difficult to estimate the size of unfamiliar places or features.

When the subject is of indeterminate size—a mountain, a body of water, a stone wall—a sense of scale can be achieved by including something of known size, such as a person, a car, a tree, or an animal, in the picture beside it. A human figure standing next to an oak lets us know just how big the tree is, and a cow standing in a field helps us comprehend the extent of the pasture. Photographing a cliff, a photographer might wait until some hikers pass along the trail to show its sheer magnitude. Giant excavation machines might seem ordinary until a picture reveals that a workman's head reaches only halfway up one of the tires. Lacking that sense of scale, a picture sometimes is not intelligible. "It doesn't read," a photo editor would say.

PERSPECTIVE HELPS

Sometimes perspective allows us to clarify scale. The location of the base of an object in an image is a clue to its distance from the camera viewpoint.

In landscapes, the ground or ground plane visually rises toward the horizon. The higher up in the ground area of the picture the base of an object is located (up to the horizon), the farther away it seems from the viewpoint.

▶▶When photographing vast landscapes or large objects, juxtaposing something familiar in size—such as a person, an animal, or a landmark—helps the viewer understand how large the main subject is.

Color

COLOR IS THE MOST SIGNIFICANT ELEMENT in composition, because each color carries its own "visual weight," the extent to which it commands the viewer's eye in an image. Color photographs that work in good compositions may be lifeless if shot in black-and-white, because of the color weight of certain hues.

For example, even a small spot of vivid color or a patch of white creates a center of interest if backed by large areas of duller tones. A spot of bright green in an otherwise dun landscape will carry as much visual weight as a large boulder. Despite their contrast in size, they will balance each other in a composition.

BLOCKS OF SHAPE AND COLOR

Blocks of color of the same hue or different hues of about equal tonal value can enhance and give depth to an image. The repetition of color and shapes will be pleasing and invite the viewer into the frame.

Colors can give a warm or cold feeling to a picture, reflecting our preconceived views on color. A winter scene can be enhanced by the use of blue in the picture to give that chilly feeling, for example, or a red beach umbrella on golden sand can evoke the feeling of warmth. But rigid rules can be misleading or irrelevant when applied to color choice: The photographer must trust his or her aesthetics or taste.

▶▶ Since we usually look for details, it can be harder to see blocks of color or shape. Squint a bit. Details will blur, and you will see things as masses.

Chasen Armour/ National Geographic My Shot Tanzania

▶ Photographing People

WITH PEOPLE PICTURES, you always know what the center of interest is. But what do you want to reveal about the people you photograph? Posture, clothing, favorite environment, typical expressions, or telling behaviors? Once you have made that decision, you can be on the lookout for the telling moments when a person's character shines through.

Make sure to get close to your subject and be bold. If you see something interesting, don't be satisfied with just a wide shot. Think about the essence of what you are photographing and work closer and closer until you have isolated and captured it. And don't be shy—people are usually happy to show you what they do well.

▶▶ If you practice with people you know, you'll get more comfortable. Equally important, know your gear well enough to use it without thinking.

Avoid the bull's-eye. Don't always put the subject smack dab in the middle of the frame.

Move the camera around, placing the subject in different positions in the viewfinder.

Look for a composition that reveals something about the place as well as the person.

Jessica Cudney/National Geographic My Shot Kampala, Uganda

Animals in the Wild

IT'S A COMMON EXPERIENCE: You see an animal you want to photograph, but just as you move in, it's gone. Timing is everything. When you first see your subject, photograph it from where you stand; then edge in slowly. You want to make sure you get the shot you have, rather than rushing in and getting nothing at all.

Use a long lens for tight shots. For a sense of place, photograph the subject in its habitat. If you have a tripod, use a slow shutter to create a feeling of movement.

Game animals blend into the landscape, so be careful about your background. Wait to shoot a deer, for example, until it is outlined against the sky or a distant light-colored field.

Use a shallow depth of field for close-ups to blur out background distractions.

Close-ups are better if there's a catch light in the eye. Try shooting late or early in the day with the animal facing the sun. Or use a flash set on a dim, fill-flash level.

Balazs Buzas/National Geographic My Shot Tanzania

▶ Timing

THE MORE YOU SHOOT fast-action sports, the more tuned in to the activity you will become, and speed will naturally follow. Anticipate the best place to position yourself. Rehearse the subject's trajectory through the frame. If you've already practiced the camera movement, when the person or object is in motion, it's just a matter of following it in the frame (as in the photograph opposite).

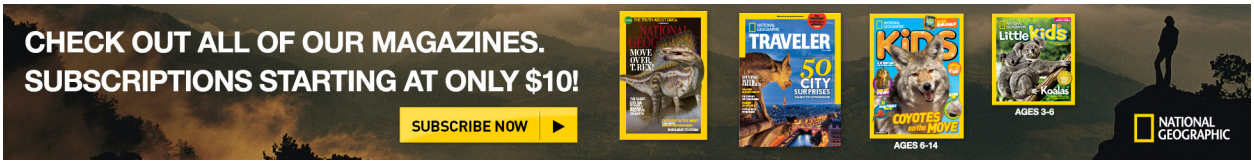
▶▶ **Sharpen reaction time** by practicing at the local sports field, the skateboard park, or on a bike ride around the block.

A fast motor drive is a sure way to catch more action.

Without a fast autofocus, prefocus on a spot where, for example, a skier or race car will shoot past you, using a tree branch or some other unobtrusive object.

Compose your frame carefully so you don't cut a head or arm out of the photos, despite movement.

Syafiq Sirajuddin/National Geographic My Shot



▶ A Sense of Story

ADVENTURE PHOTOGRAPHY is about telling a story, and story line determines the important photo moments of a trip.

Shooting great adventure photography requires balancing photography with participation, as well as a keen observation of unfolding events. Your reward will be powerful photos that clearly illustrate the story of your adventures. The behind-the-scenes photo is integral to building your photo story, too. Your subjects—your crew and friends—will be the players that give your story the personal touch.

▶▶ **Keep in mind** **five basic questions of storytelling: Who? What? When? Where? How?**

Try POV **(point-of-view) shots, shooting from unusual angles.**

Pay attention **to backgrounds and foregrounds—they can be very effective storytelling tools.**

When shooting portraits, **try backing up a little to include the environment around the person.**

Lukasz Warzecha/National Geographic My Shot Greece

Seek the Authentic

TODAY'S TRAVELERS are intrigued by the authentic. We like places that still have their own distinctive identity—culture, heritage, environment. Photography, particularly travel photography, has a role to play in helping to document what's left of the authentic.

Authentic culture is sometimes as close as the nearest market or festival, and these are likely to be on the tourist trail. But often you have to arrive early or leave late to really see life as the people live it. The best photographs of another culture will be founded on relationships that you establish with the people there. Show respect and appreciation; spend some time getting to know the place and letting its people come to know and trust you.

▶▶ **Research your trip** in advance and find out how you will be received. Always ask permission before shooting.

Go early and stay late to take advantage of the quiet hours if lots of tourists are visiting your destination.

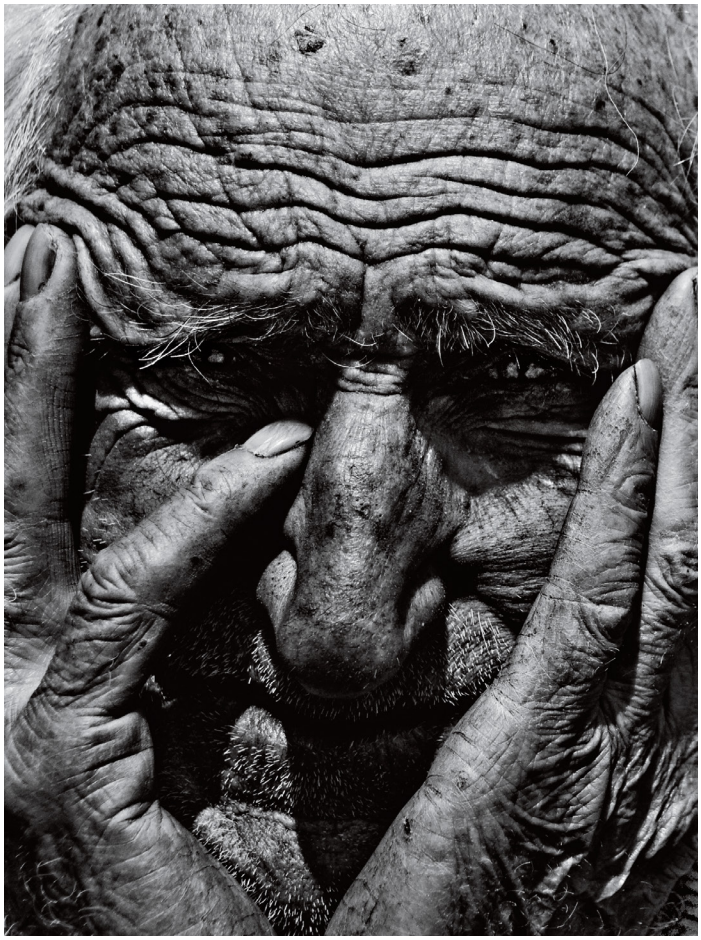
Learn a few words of the local language, and express genuine interest in the people you meet. Engagement creates rapport.

Hire a guide to take you places that tourists don't normally go. Choose someone of the local ethnicity—they know the language and customs.

Daniel Lefort/National Geographic My Shot India

Choosing Black and White

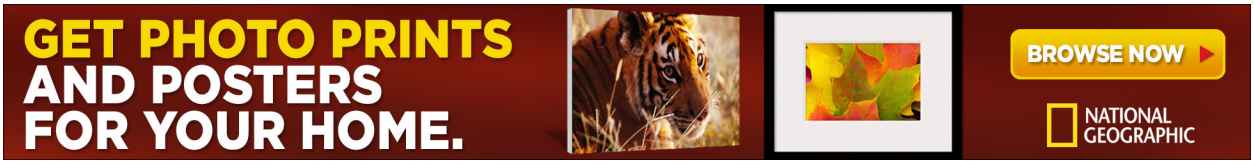
BLACK-AND-WHITE PHOTOGRAPHY allows the photographer to present an impressionistic glimpse of reality that depends more on elements such as composition, contrast, tone, texture, and pattern. In the past, photographers had to load black-and-white film in the camera. But with digital photography, you can convert your color images on the computer or, on most cameras, switch to black-and-white mode—good for practice but not the best for quality.



Alexandar Terzic/National Geographic My Shot

Shoot raw files instead of JPEGs, if your camera allows it, so you don't drop the detailed information you'll need to process images as you like on the computer.

Shoot with the lowest ISO possible to decrease the amount of noise in the darker tones.

If you shoot in digital color, you can convert the images to black-and-white on your computer and retain the color file as well.

A filter lightens its own color and darkens complementary colors. Working in digital, you get the same effect through processing.