

08

Week

WIDE- ANGLE LENSES

A wide-angle lens helps you capture a broader view than a standard or telephoto lens, making it ideal for landscapes and interiors. Wide-angle lenses also open up a range of creative and dynamic possibilities.

In this module, you will:

- ▶ **identify the characteristics of wide-angle photography** and learn when it is best to use a wide-angle lens;
- ▶ **see how wide-angle lenses** appear to distort perspective;
- ▶ **learn the basics** on a step-by-step landscape photoshoot;
- ▶ **practice your technique** with some guided assignments;
- ▶ **troubleshoot** some of the most common problems;
- ▶ **improve your images** in post-production by correcting perspective problems;
- ▶ **go back over** the tips to see if you're ready to move on.

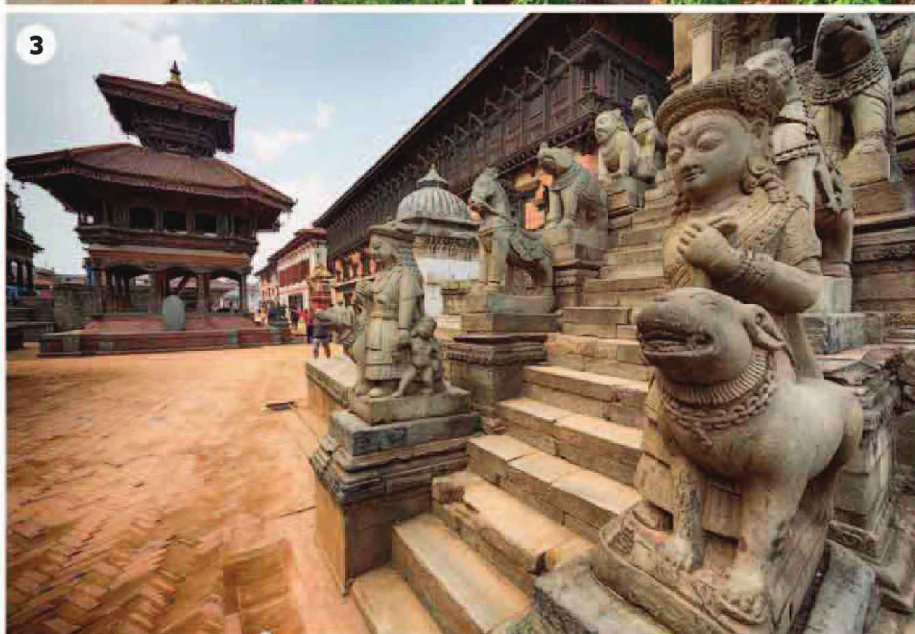
Let's begin...





▶ TEST YOUR KNOWLEDGE

Assessing wide-angle shots



You can use a wide-angle lens to produce highly distinctive images. These seven photos show some of the key attributes of wide-angle lenses. Can you match each characteristic with the appropriate image?

A A sense of space: A wide-angle lens lets you capture an expanded view of a scene.

B Depth of field: It's easy to keep both foreground and background objects in crisp focus in one shot.

C Expanded perspective: Objects close to the camera appear larger, and distant objects seem smaller.

D Foregrounds: A wide angle can create dynamic foregrounds, with lines converging into the distance.

E Distortion: The closer you get to your subject, the more the subject will appear distorted.

F Tilted verticals: If the camera is tilted upward, vertical elements can appear to tip backward, creating greater visual impact.

G Vignetting: Wide-angle lenses can cause the edges of the shot to darken, which can help draw the eye to the center.

ANSWERS

- A**/5: Sun-parched African landscape
B/1: Bedruthan Steps, Cornwall, UK
C/3: Bhaktapur Durbar Square, Nepal
D/2: Potato plants in rows, Israel
E/7: Horse staring at the camera
F/4: Leadenhall Building, London, UK
G/6: Parc Güell, Barcelona, Spain



NEED TO KNOW

- You don't need a special wide-angle lens to experiment with wide-angle shots.
- If your camera has a kit zoom lens, the widest setting on the zoom will be enough to produce wide-angle images. You can then use your kit lens to learn the properties of wide-angle lenses.
- However, if you do buy a wide-angle zoom, it will greatly expand the range of images you can capture.
- A wide-angle lens isn't just useful for landscape shots. It can be used almost anywhere, to photograph almost anything.
- It is ideal for capturing landscapes or cityscapes, and for fitting tall buildings or compact interiors into a shot.
- It can also be used to produce creative and unusual portraits and interiors, as well as eye-catching atmospheric shots.



Review these points and see how they relate to the photos shown here



► UNDERSTAND THE THEORY

Wide-angle perspectives

Wide-angle lenses allow you to photograph more of a scene than a standard lens. The wider a wide-angle lens, the more of a scene is captured. The main visual characteristic of wide-angle lenses is that objects in the background appear smaller and more distant from objects in the foreground. Knowing how to exploit this quirk is an important part of learning about wide-angle lenses.



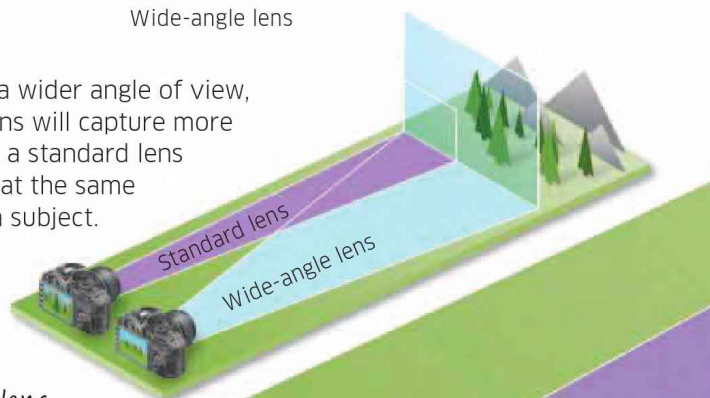
Standard lens



Wide-angle lens

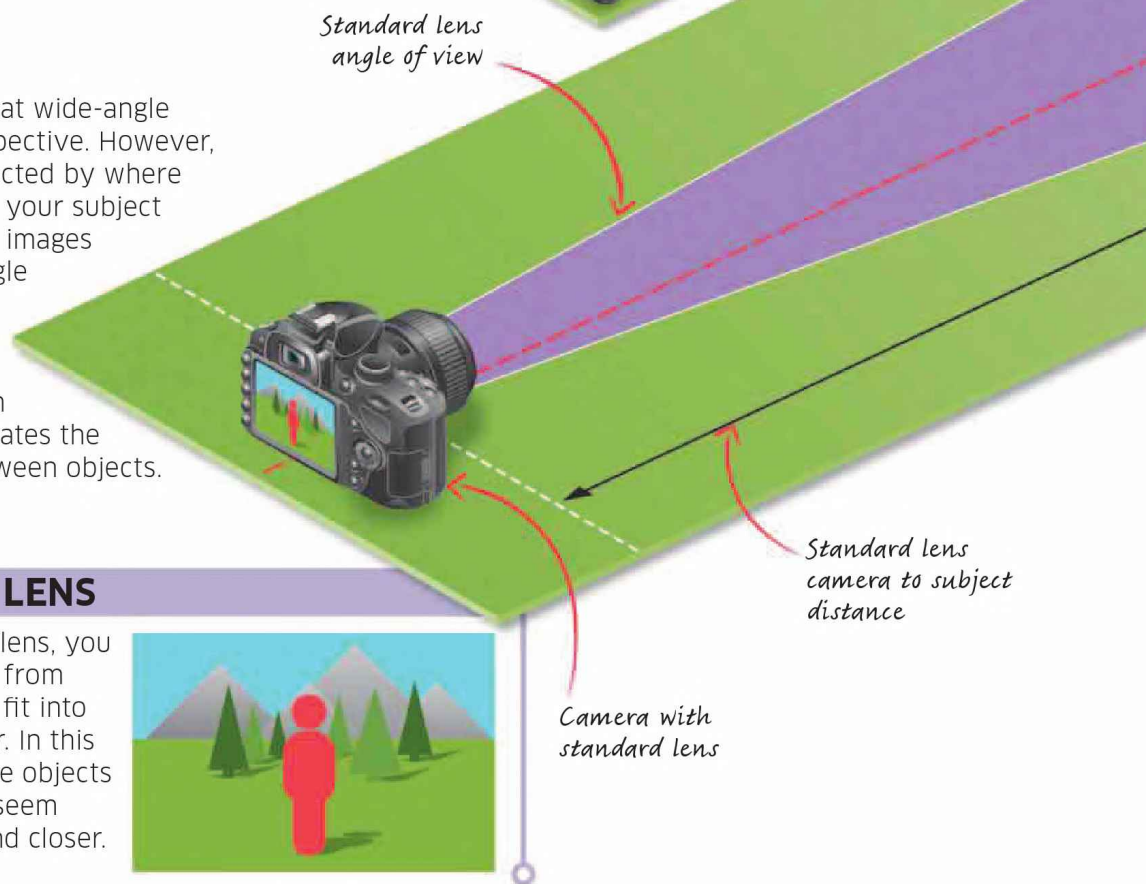
More or less

Because it has a wider angle of view, a wide-angle lens will capture more of a scene than a standard lens when shooting at the same distance from a subject.



Near and far

It is a common belief that wide-angle lenses exaggerate perspective. However, perspective is only affected by where you stand in relation to your subject (see pp.124–125). Since images are smaller on wide-angle lenses, you must stand close to a subject to ensure it is a reasonable size within the frame. This exaggerates the apparent distances between objects.

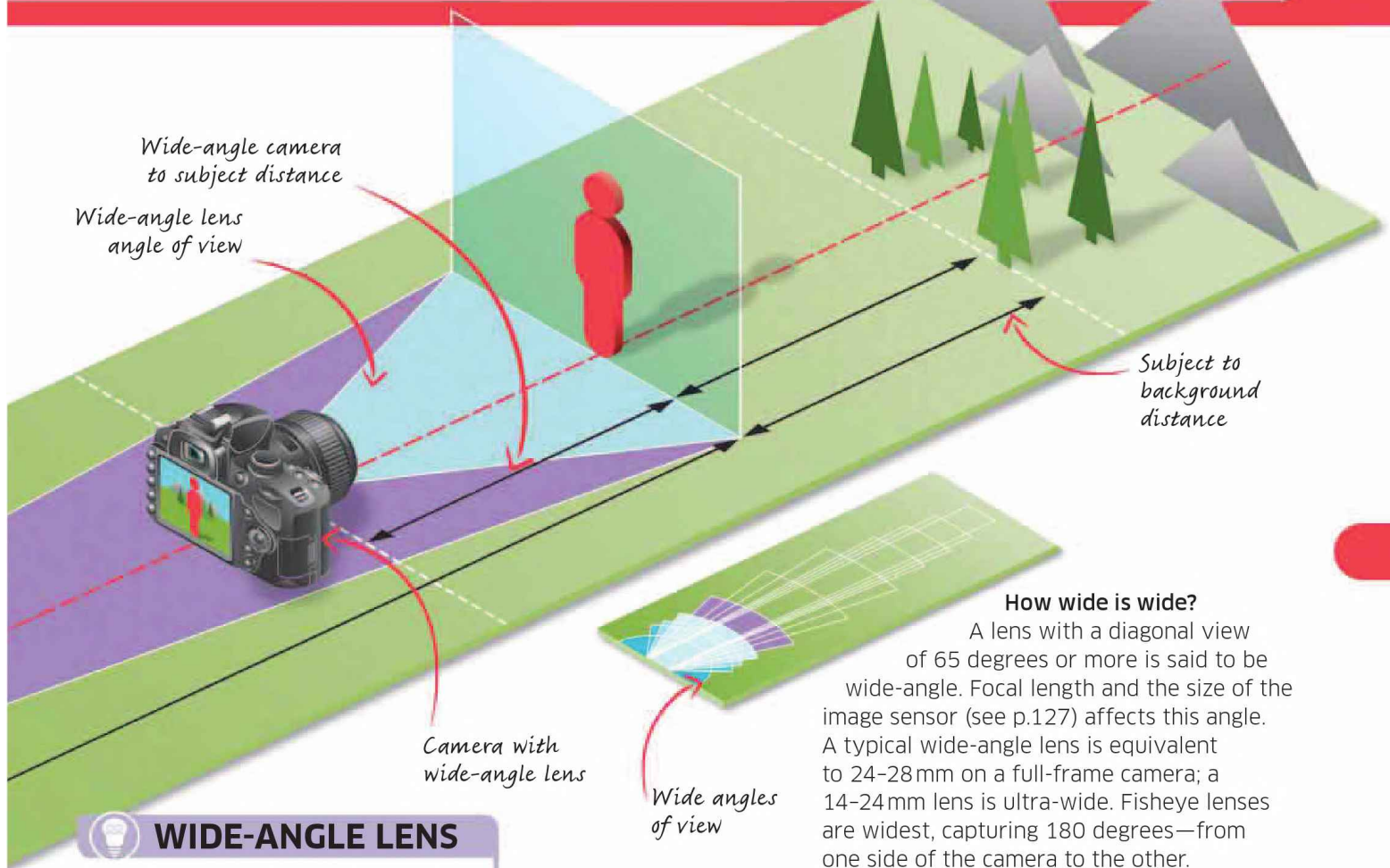


STANDARD LENS

When using a standard lens, you will need to stand back from your subject to make it fit into the camera's viewfinder. In this narrow field of view, the objects in the background will seem proportionally larger and closer.



Pro tip: If you shoot with a wide-angle lens at maximum aperture, the corners of a photo are often darker than the center. Known as vignetting (see p.126), this can either be reduced by using a smaller aperture or corrected in post-production.



How wide is wide?

A lens with a diagonal view of 65 degrees or more is said to be wide-angle. Focal length and the size of the image sensor (see p.127) affects this angle. A typical wide-angle lens is equivalent to 24–28mm on a full-frame camera; a 14–24mm lens is ultra-wide. Fisheye lenses are widest, capturing 180 degrees—from one side of the camera to the other.



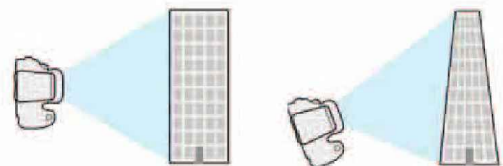
WIDE-ANGLE LENS

When using a wide-angle lens close to your subject, the distance from the camera to the subject is very small compared to the distance between the subject and its background. This means your subject will appear far larger in the photo compared to the objects in the background.



CONVERGING VERTICALS

If you shoot using a wide-angle lens parallel to a vertical structure—such as a building—the lines of the structure will look vertical in the photo. This is because the relative distance between the camera and the top and bottom of the building is similar. Tilt the camera upward to take in the full height of the building and the bottom of the image will be magnified as the distance between the camera and the bottom of the building is decreased relative to the distance between the camera and the top. Tilting causes the lines of the structure to converge, making it seem as if the structure is falling backward (see p.215).





▶ LEARN THE SKILLS

Shooting landscapes



Wide-angle lenses are most closely associated with landscape photography. The wide angle of view lets you create a sense of open space. Try to have a strong foreground so that your composition doesn't look empty.



1 Choose your subject and time of day

Light is often the key to landscapes; when the sun is low to the horizon, shadows add interest. Known as the "Golden Hour," this is when light is at its warmest in color. Avoid shooting at midday, when the light is cooler.



The Golden Hour occurs around sunrise and sunset when the sun is low in the sky.



2 Maximize image quality

Start by setting your camera to its finest JPEG quality setting, or use RAW, which will give you greater scope for post-production adjustments. Use the lowest (or base) ISO setting available.

A low ISO risks camera shake, but a tripod cuts out that risk



6 Set the exposure

Select an aperture between f/8 and f/16. The closer to your camera you focus, the smaller the aperture needs to be. If your camera has a depth-of-field button, use this to check whether the image is sharp. If it isn't, use a smaller aperture.

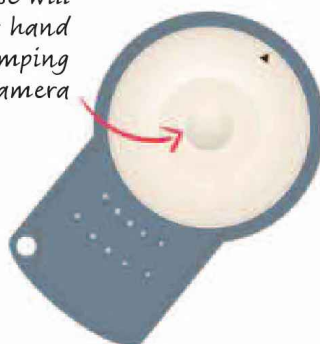
A smaller aperture gives a greater depth of field



7 Take a shot

Use a remote shutter release or your camera's self-timer to fire the shutter. If using a cable release, make sure the cable is loose so that you don't pull the camera over by accident.

Using a remote shutter release will keep your hand from bumping the camera



8 Check your shot

Zoom in to check whether your image is sharp all over. Check the histogram too: if the highlights have burned out, apply negative exposure compensation (see p.79) and reshoot.



Look to see if shadows or highlights are clipped

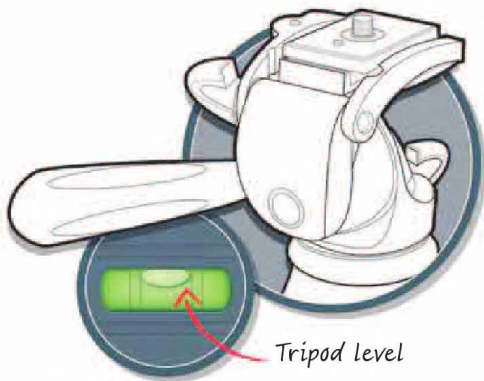
Where to start: Find a landscape location with an interesting foreground and background. Shoot either early or late in the day when the sun is low to the horizon and its light is at its most attractive.

You will learn: The best time to shoot landscape images and the importance of foreground detail when using wide-angle lenses.



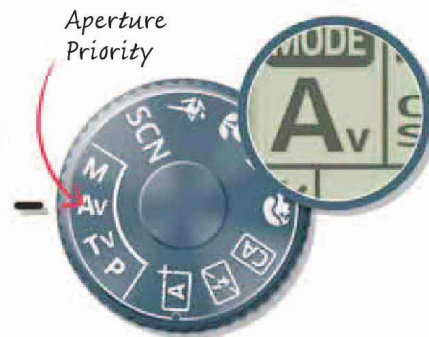
3 Position the camera

Consider shooting low to the ground to emphasize the foreground. Set the camera on a tripod and make sure it is horizontal using a level.



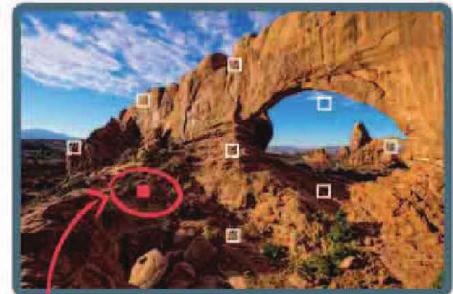
4 Set your camera to Aperture Priority

Select Aperture Priority. This will let you set the aperture. Aperture controls depth of field, which is the degree of sharpness in the image from front to back.



5 Focus on your subject

Depth of field extends farther back from the focus point than it does forward. For landscape photos, focus on the foreground. Move the camera's autofocus point to the foreground.



Focus on the foreground (depth of field will ensure that the background is sharp)

WHAT HAVE YOU LEARNED?

- Landscape photography can take a while, so get to your location ahead of time—particularly for a time-critical event, such as sunset.
- Plan your shoot carefully: you want to spend as much time as possible outdoors shooting, not adjusting images in post-production.
- Using a smaller aperture increases depth of field, which will make a tripod all the more necessary.



Use of a small aperture has ensured front-to-back sharpness.



▶ PRACTICE AND EXPERIMENT

Using a wide-angle lens

Wide-angle lenses can be used on all kinds of subjects. To find out how versatile they can be, use only your wide-angle lens (or your kit zoom at its widest setting) to photograph everything for one week. You'll get some amazing images by following a few rules—and by breaking them.



 EASY

 INDOORS

 15 MINUTES

 TWO HOUSEHOLD OBJECTS ON A LARGE TABLETOP

 BASIC + tripod

This simple shoot shows how a wide-angle lens renders perspective and depth of field. Use Aperture Priority mode so that you can control the lens's aperture.

- **Attach** a wide-angle lens to your camera (or set your kit lens to its widest setting). Mount your camera on a tripod and position it in front of a table. Select the largest possible aperture.

- **Choose** two simple objects and position them on a table.

- **Position** the first object about 20 in (50cm) from the lens and focus on it. Position your second object behind the first and take a shot.

- **Move** the second object approximately 2 in (5 cm) farther back and take another shot. Repeat until you run out of table.

- **Look** at your images. What happens to the relationship between the two objects as you move them apart?

- **Try** the exercise using a variety of aperture settings. What aperture do you need to use to keep both objects in focus?



Pro tip: With wide-angle lenses, you need to get close to your subject—maybe closer than feels comfortable when shooting portraits. The effect isn't always flattering, but your images will have impact.



OUT ON THE STREET

EASY

OUTDOORS

1 HOUR

CITY STREET OR MARKET

BASIC + 28mm lens (full-frame equivalent)

Wide-angle lenses are great for shooting street scenes. Their wide view lets you show your chosen subject in context.

- **Choose** an interesting location with lots of activity.
- **Use** Aperture Priority and set the aperture to f/8 or f/11. You may need to increase the ISO if the required shutter speed causes camera shake.
- **Frame** your shots tightly by getting close to your subject—a relatively small aperture should give you enough depth of field for their surroundings.



Attach your camera to a tripod and use a slow shutter speed to capture a sense of movement.



INTERIORS

MEDIUM

INDOORS

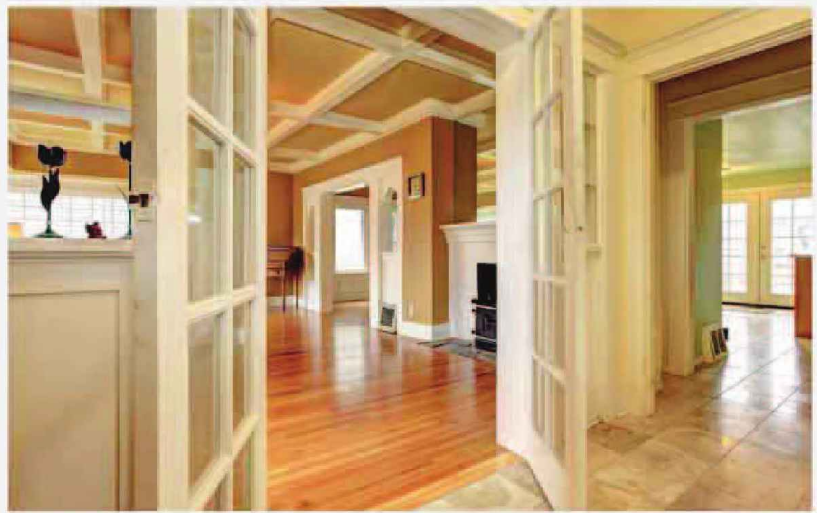
1 HOUR

ANY INTERIOR

BASIC + wide-angle lens, tripod

Wide-angle lenses can produce some great effects when shooting interiors.

- **Find** an interior space where a camera and tripod can be set up.
- **Mount** your camera on the tripod and compose a shot. Use your tripod's level (or your camera's electronic level) to make sure the camera isn't tilted.
- **Repeat**, moving the camera around the room. Try different viewpoints, such as higher or lower than eye level, to see what difference this makes.





CITYSCAPES

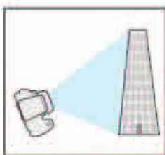
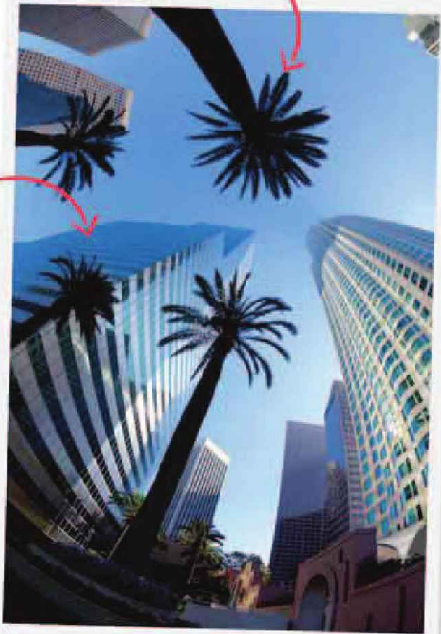
- EASY**
- 1 HOUR**
- BASIC + tripod**
- OUTDOORS**
- CITY OR LARGE TOWN**

Photographing a city can be tricky: the buildings may tower over you, but the space to take your shot can be limited. Viewing a cityscape through a wide-angle lens can unlock its potential.

- **Take** time to find pleasing compositions. Look at street level and (if possible) from higher up.
- **Look** for interesting juxtapositions of buildings, reflections, and human-made and natural features.
- **Vary** your approach to composition. Keep the camera level for some shots and then try pointing the camera up to create converging verticals.

Tree helps fill what would otherwise be an empty sky

Shooting upward helps emphasize the height of the buildings



This image was shot with an extremely wide-angle lens known as a fisheye lens. This has caused extreme, but visually appealing, distortion.

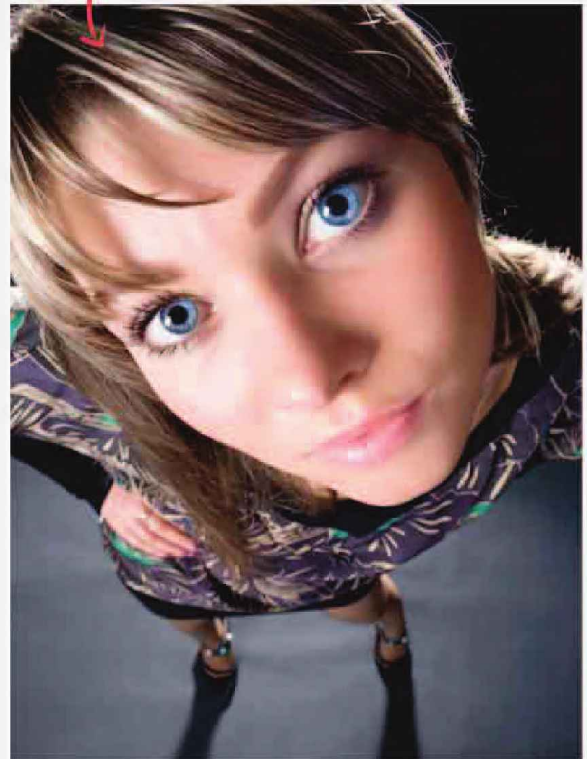
DEEP FOCUS

- MEDIUM**
- 1 HOUR**
- BASIC + tripod**
- INDOORS OR OUTDOORS**
- SCENE WITH INTEREST CLOSE AND FAR AWAY**

Wide-angle lenses let you create images with infinite depth of field. This technique is known as deep focus.

- **Mount** your camera on a tripod and position it so your subject fills half of the frame.
- **Move** the camera's autofocus across the subject to focus, or focus manually.
- **Select** Aperture Priority mode, and set the lens to its smallest aperture (typically f/22).
- **Take** one shot and then set the lens to its largest aperture and compare the results.

The closer your subject, the harder it is to keep everything in focus, unless you use an extremely wide-angle lens





BREAKING THE RULES

EASY

1 HOUR

BASIC

INDOORS OR OUTDOORS

SCENE WITH CLOSE-UP INTEREST

Focus on the part of your subject that is closest to the camera

Once you understand the way your wide-angle lens appears to change perspective, you can play with it to create some striking, vibrant, and surreal compositions.

■ **Get** as close to your chosen subject as focusing will allow, so your subject dominates the frame. The wider the lens, the more distorted your subject—that's all part of the fun!

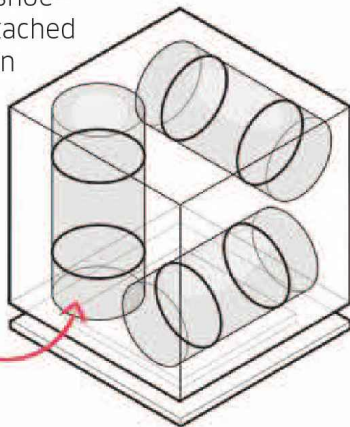
■ **Try** shooting your subject from a variety of different angles. Tilt your camera upward to force vertical lines to converge dramatically.



GEAR: HOT SHOE LEVEL

The electronic level display on a camera helps you achieve level images, but there is always a small margin of error, and not all cameras have electronic level displays. The solution is to add a level to your camera's hot shoe. This has several bubbles that show how aligned your camera is, both horizontally and vertically.

Generally you would only use a hot shoe-mounted level when your camera is attached to a tripod. It is particularly useful when shooting seascapes or when a straight horizon line needs to be kept perfectly level—or when you want to avoid the visual effect of converging verticals.



Hot shoe levels record the angle in three different planes

WHAT HAVE YOU LEARNED?

- Set a wide-angle lens to any aperture and it will have more depth of field than a telephoto lens set to the same aperture.
- The distortion caused by wide-angle lenses increases the closer your subject is to the camera.
- Wide-angle lens distortion can be used to creative effect to add interest to a photo.



▶ ASSESS YOUR RESULTS

Reviewing your shots

After a week of shooting with a wide-angle lens, pick out some of your best shots. Look critically at each image: what's good about each one, and what could be improved? Here's a checklist to help you troubleshoot some common problems.



Are the edges of the image messy?

It's easy to concentrate on the center of the frame, leading to unwanted elements—such as branches, people, or shadows—creeping into the edges of your composition without your realizing it. This busy image works because your eye is drawn to the bright central area.



Does your image have a clear subject?

Wide-angle lenses record a huge amount, including details you may not want, so try to get as close as possible to your subject. In this photo, most details have been excluded apart from the foreground rocks, horizon, and sky.



Have you made use of lines?

Lines help to draw your eye through an image. Diagonal lines have more dynamism and energy than horizontal and even vertical lines, particularly if they come in from the sides of the shot. Shooting close to the ground can make these lines recede dramatically.



“ Be **purposeful** when you're out shooting. ”

WILLIAM KLEIN

08

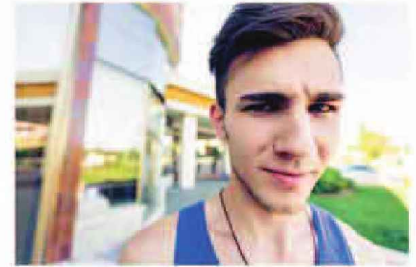
WEEK

The positioning of the camera has placed the horizon in the middle of this photo



⌚ **Do your compositions work?**

This photo would have been less balanced if the camera had been higher or lower. Even a small movement of a wide-angle lens, relative to the subject, will have a big effect on the image's balance, so take time composing in your Viewfinder before taking a shot.



⌚ **Are the edges of your images distorted?**

The optical design of wide-angle lenses—especially less expensive ones—means that photos are heavily distorted around the edge of the frame. This subject's face would be less distorted if he had been placed more centrally.



⌚ **Is your image correctly exposed?**

Shooting landscapes with a wide-angle lens often means dealing with a bright sky and a darker foreground. If the contrast is too great, it is impossible to set an exposure that is ideal for both. Here, an ND graduated filter was used to balance the sky and foreground.



⌚ **Are your images sharp?**

With a relatively small aperture and careful focusing, wide-angle lenses can keep near and distant objects in a scene in sharp focus. Depth of field extends farther back from the focus point than toward the camera. This image is pin-sharp from front to back because focusing was precise.



▶ ENHANCE YOUR IMAGES

Fixing perspective



The scale of many buildings means that only a wide-angle lens can capture them in their entirety. But when you point a wide-angle lens upward, buildings seem to converge and lean backward. You can use the effect—called perspective distortion or converging verticals—creatively, but usually you will want the building to look straight and naturalistic. There are

several in-camera ways to avoid perspective distortion (see box opposite), or you can correct it with a little post-production work.



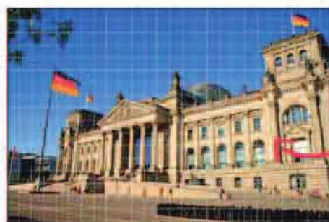
1 Open and activate grid

Go to Filter, choose Lens Correction, and your image will open in a new window. Click on the Custom tab and then the Show Grid box at the bottom of the window. The grid is a useful guide to whether your subject is straight.



4 Toggle preview

Click the Preview box on and off to see how the photo will be adjusted once the changes have been made.



Before



After



5 Save the new perspective

Once you're satisfied with the new perspective, press the OK button at the top of the window to save the changes.



Any adjustment is copied to a new layer.



6 Crop out the blank areas

Use the crop tool to remove any blank areas around the side of the image. You should now have a squared-up image in which vertical elements appear both straight and parallel.



Pro tip: Most cameras have an option to display a grid on the LCD in Live View. Aligning vertical (or horizontal) features of your subject to the grid is an excellent way to ensure that your camera is straight.

Pro tip: Tripods are almost essential when trying to keep architectural subjects straight. It's nearly impossible to do this by hand—particularly when using Live View with the camera held at arm's length.



2 Adjust Vertical Perspective

Move the Vertical Perspective slider so that the sides of the buildings are parallel to both the grid lines and one another.



3 Adjust Scale slider

As you alter the Vertical Perspective, you'll lose some of the photo. Move the Scale slider to recover any missing areas.



Verticals now parallel in photo

Detail has been lost around the edge



i IN-CAMERA FIXES

Stand back

Fixing perspective in post-production inevitably reduces the resolution of the image. The better option is to minimize perspective distortion in the first place. Simply move back from your subject and shoot from farther away. This will allow you to fit more into the frame without needing to point the lens upward.

Tilt-shift lens

If you can't physically move back, a tilt-shift lens lets you move (or shift) the lens up or down relative to the plane of the camera sensor. When the image of a building is parallel to the sensor, verticals appear straight. Tilt-shift lenses are expensive, but they can capture shots that are impossible to achieve with standard lenses.

