

02 week

FOCUSING

Deciding what parts of your image you want to be sharp and in focus and what parts you want out of focus is vital to becoming a skilled photographer. Although modern cameras have excellent, fast, and accurate Autofocus, you need to know how to use it to its best advantage, how to select the right mode for the subject you're shooting, when to switch to Manual, and how to use focus creatively.

In this module, you will:

- ▶ **discover how the focus point** isn't fixed and can be moved;
- ▶ **compare** Single Autofocus, Continuous Autofocus, and Manual focus, and learn when to use which mode;
- ▶ **get to grips with the basics** by experimenting with Single point and Multi-area Autofocus;
- ▶ **familiarize yourself** with how to select the correct focus point through guided assignments;
- ▶ **analyze your photographs** to understand why it's important to select the correct focus point;
- ▶ **improve your images** by learning how to sharpen an image in post-production;
- ▶ **review your understanding** of how to control focus to see if you're ready to move on.

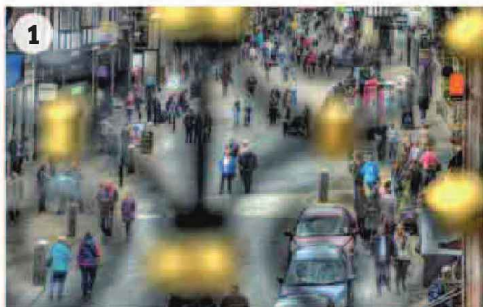
Let's begin...





▶ TEST YOUR KNOWLEDGE

Where should you focus?



By careful use of the camera's settings, you can control the position of your focus point and decide how much or how little of the scene you want to be sharp and in focus. See if you can identify which focusing methods have been used in these examples.

A Telephoto focus: Often used for nature photography, telephoto lenses offer a shallow depth of field, so focusing must be precise.

B Moving focus: Keeps a moving subject in focus.

C Portrait focus: Picks out the most important part of the subject, usually the eyes.

D Landscape focus: Keeps as much of the image as possible sharp and in focus.

E Side focus: Focusing on one side of the image can draw the viewer's eye to important details.

F Foreground focus: Creates impact by focusing on what's closest to the lens.

G Background focus: Useful when you want to accentuate the context of the scene.

H Center focus: Draws attention to the center of the frame by making the middle part of your composition sharp.

ANSWERS

- E/7: Close-up of rusty railings
- F/5: Tomato and cheese bruschetta
- G/1: Street view in Chester, UK
- H/2: Old lane leading down to the sea

- A/6: Sparrow perching on a log
- B/8: Goalkeeper making a save
- C/4: Toddler at lunchtime
- D/3: Metal grating on road



NEED TO KNOW

- Your camera's Autofocus is fast and accurate, but it can be fooled in certain situations, so you need to know how to override it.
- The focus point is the exact spot you set your focus on. The area around this focus point that also appears sharp is known as the depth of field. How far this extends depends on the type of lens and the size of aperture you are using.

- A wide aperture will give a small depth of field, which can be used to accentuate part of the image.
- A small aperture will give a large depth of field so that everything in the frame appears sharp.
- You don't always have to focus on the center of your composition. Choosing another focus point can create interest in your images.



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



► UNDERSTAND THE THEORY

Manual and autofocus

There are two ways a lens can be focused—manually and by using autofocus (AF). When a camera is set to manual focus, the lens focus ring must be physically turned to produce a sharp image. Autofocus puts the camera in control: the camera's AF sensors calculate the distance to your subject and activate motors inside the lens to move the focus ring to the desired point. Once you've mastered a few of its intricacies, autofocus speeds up the shooting process considerably.



AUTOFOCUS POINTS

An AF point is a small box-shaped area of a viewfinder or Live View display that you can select in order to instruct your camera where to focus.

■ **In an optical viewfinder**, there are multiple AF points generally arranged in a grid or diamond shape at the center of the viewfinder.

■ **On an LCD screen**, the AF point can usually be moved more freely, including around the edge of the image area.

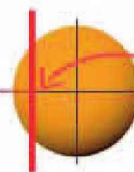
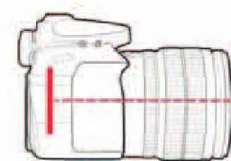


Autofocus point

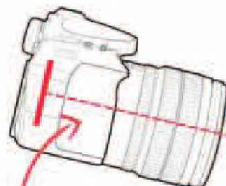
In AF, your camera will choose which AF point (or points) to use.

FOCUS POINT

The sharpest part of a photo is the focus point. Although this is referred to as a point, it is more accurate to think of it as an invisible plane parallel to the back of the camera. As you move the focus point, this plane of sharp focus shifts either forward toward the camera or backward away to infinity (indicated by the infinity symbol on the focus distance scale of the lens). When a lens is manually focused, you can see this plane move as you look at the LCD screen or through the viewfinder.



Focus point

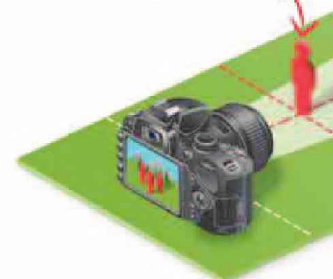


Camera tilted down



Focus point moves with camera

Figures in the foreground are blurred



Pro tip: Cameras can often be set to automatically detect which AF indicator to use. Typically the AF indicator selected is the one that covers the part of the scene closest to the camera.

Pro tip: Many camera models, when set to Continuous AF, select AF indicators based on how the subject is moving, automatically jumping between AF indicators to follow the action.



MANUAL VERSUS AUTOFOCUS

MANUAL

Pros

- Lets you select the focus point exactly
- Once a lens is focused, it will stay focused

Cons

- Slow to focus; only suitable for still subjects
- Can be difficult to see the precise focus point through your viewfinder

AUTOFOCUS

Pros

- Easy to use
- Focusing is quick and accurate

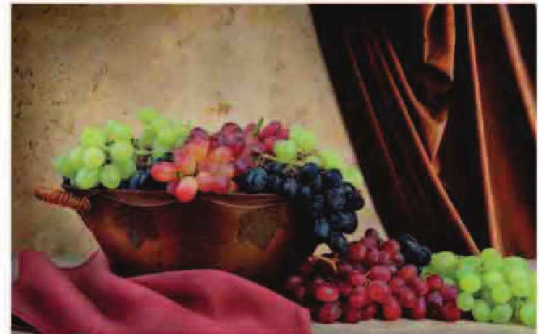
Cons

- AF can be confused when the subject is low in contrast or positioned behind another object
- Less accurate when shooting macro subjects
- Limited range of AF indicators when using viewfinder
- Continuous AF uses more battery power



AUTOFOCUS MODES

Once a camera knows where to focus, the next question is for how long. When shooting a still subject, the camera stops focusing once focus has been achieved. If a subject is moving, autofocus must continue to adjust focus until the shot has been taken. Camera AF modes let you choose which of these two situations apply and adjust AF accordingly.



Single (also known as One-Shot or AF-S)

AF is activated when the shutter button is half-pressed down. Once the lens has focused, AF stops. This means that if your subject then moves, focusing will be inaccurate. It is suitable for still life and landscape subjects.



Continuous (also known as AI-Servo or AF-C)

Once activated, focus is continuously updated to follow a moving subject. This mode is often referred to as predictive focusing, as the camera adjusts focus by predicting how and where the subject is moving within the image frame. It is suitable for sports, action, and wildlife photos.

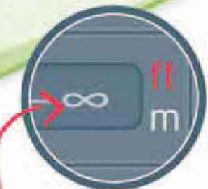
Focusing on infinity

The farthest point to which a camera can focus is called infinity. When focused on infinity, everything at the focus point and beyond is sharp and no adjustment is needed to bring more distant objects into focus. To focus on infinity turn the focus ring until it reaches the infinity symbol.

Mountains in focus

Focus point at infinity

The trees and the mountains beyond are in focus, but the people in the foreground are not.



Infinity symbol on a camera lens

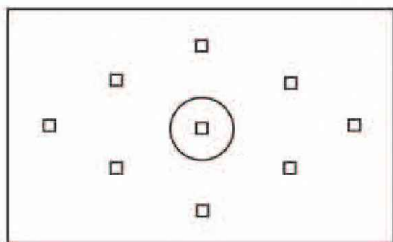


▶ LEARN THE SKILLS

Selecting autofocus points

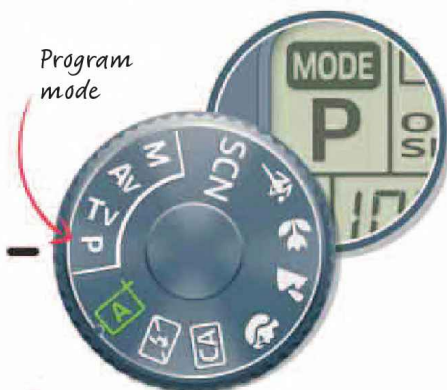


Cameras use autofocus (AF) points to focus on a subject. The number of points can vary greatly, depending on the camera. There are two ways to select an AF point: let the camera do it automatically or manually choose it yourself. You'll learn to do both here.



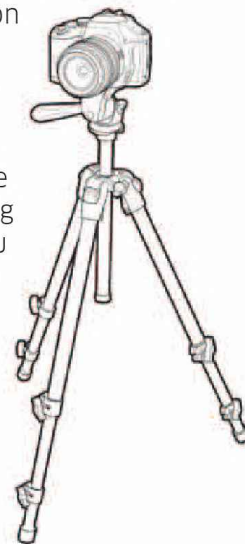
1 Switch shooting mode

Cameras offer a variety of shooting modes, which automate some of the processes of making a photo. Some take focusing out of your hands altogether, so select Program mode, which does allow you some control over AF.



2 Compose your shot

Choose a busy scene with lots of objects at different distances. Set your camera on a tripod to keep your composition consistent as you experiment with focusing. Compose your shot, deciding exactly where you want the camera to focus.



6 Switch to Manual AF point selection

This will vary from camera to camera, but moving the AF point is generally done by pressing the multi-controller (a miniature joystick or set of four buttons on the back of the camera) in the required direction. You may also have to press an AF point selection button.

Multi-controller



7 Move the AF point

With the shutter button pressed halfway, move the AF point to the area of the scene you want to focus on. Press the shutter button fully to take the shot.

Manual AF point selection is useful when there are objects between the camera and the subject



8 Check your shots

Compare both your shots in Playback, looking closely at where the images are sharp and where they aren't. Experiment further with manual selection of AF points, bringing different parts of the scene into focus in order to familiarize yourself with the skill.



Where to start: Look through your camera's instruction manual to see how to switch between automatic and manual selection of AF points. Practice switching between them so it becomes almost instinctive.

You will learn: The difference between automatic and manual selection of AF points, when they should be used, and how to switch between them.



3 Select a focus point

Look through the Viewfinder and press halfway down on the shutter button. The camera will automatically select an AF point (or points). This will normally be the element closest to the camera, although this may not be what you want to focus on.



AF point is closest part of the scene



4 Check the options

Keeping your finger on the shutter button, look closely at the AF points the camera has selected, which will be lit up. Compare the points that are lit to where you would actually like the camera to focus, noting how big or small a difference there is.



5 Take your shot

Press down on the shutter button to take the shot.

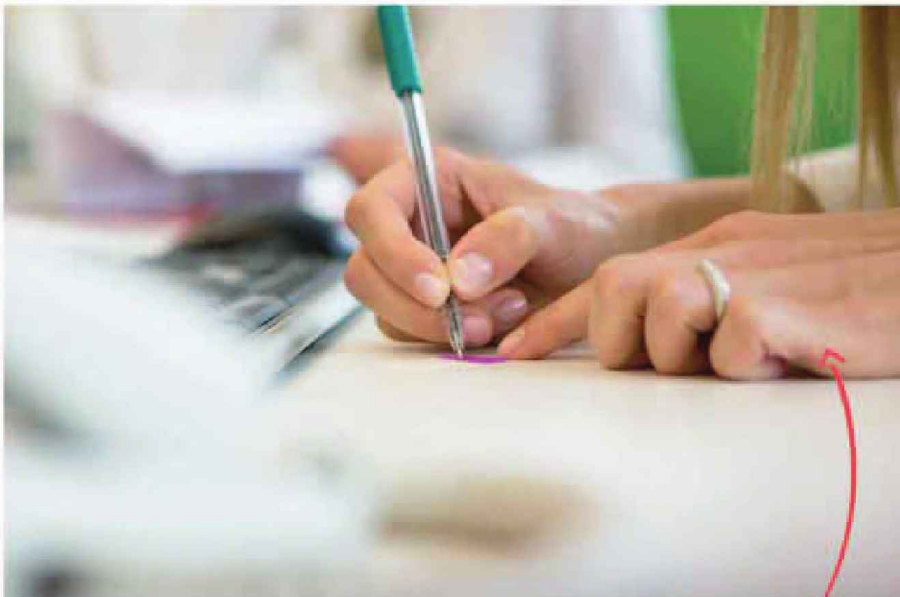


Part closest to camera is in focus



WHAT HAVE YOU LEARNED?

- When a camera automatically selects the AF point, it can be fooled by objects that are closer to the camera than your subject.
- Manually selecting the AF point gives you greater control over exactly what is and what isn't in focus.
- Manual AF point selection can be slow and is best suited to stationary subjects.



Manual AF point selection has been used to focus on the hands at the side of the image



▶ PRACTICE AND EXPERIMENT

Focusing for effect

When looking at a photo we tend to ignore areas that are out of focus in favor of those areas that are sharply in focus. Focusing is thus as much about understanding how focus can be used creatively as it is about the technicalities of focus points. These assignments will help to take some of the mystery out of focusing so you can learn the effect it can have on your photography.

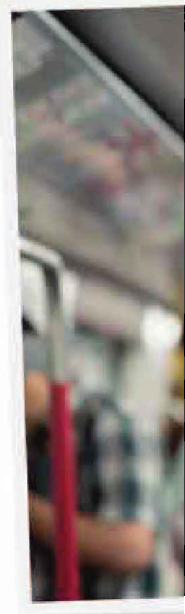


- 📷 EASY
- 🕒 1 HOUR
- 📷 BASIC + tripod

- 📍 INDOORS OR OUTDOORS
- 👤 A MODEL

Where you place a subject within a composition is an aesthetic choice. Placing a subject off-center is often more pleasing than placing it centrally. However, doing this means thinking carefully about which AF point to use.

- **Ask** your model to find a comfortable pose.
- **Set** your camera up on a tripod and frame your subject so that they are placed to one side in your composition.
- **Select** Manual AF Point Selection mode on your camera. Choose the AF point closest to your subject's face, focus, and take the shot.
- **Experiment** with moving the AF point to different parts of the scene to see how this affects focusing and the sharpness of your subject.



USE MANUAL FOCUS

- 📷 EASY
- 🕒 30 MINUTES
- 📷 BASIC
- 📍 INDOORS OR OUTDOORS
- 👤 A WELL-LIT SCENE

Autofocus is convenient and quick. However, there will be times when you will need to take control and manually focus a lens. Fortunately, even when doing this, the camera can help you achieve sharp photos by using the AF points as a guide.

- **Switch** your camera to manual focus.
- **Look** through the Viewfinder and point your camera toward an object you want to focus on. Move the AF point to the object.
- **Turn** the focus ring on the lens. If the object looks progressively less sharp, turn the ring in the other direction.

- **Wait** for the AF point to light up, meaning the object is in focus. Some cameras also show a focus confirmation light, generally at the bottom corner of the Viewfinder.
- **Experiment** with different subjects and see how your judgment of when an image is in focus matches that of the camera.

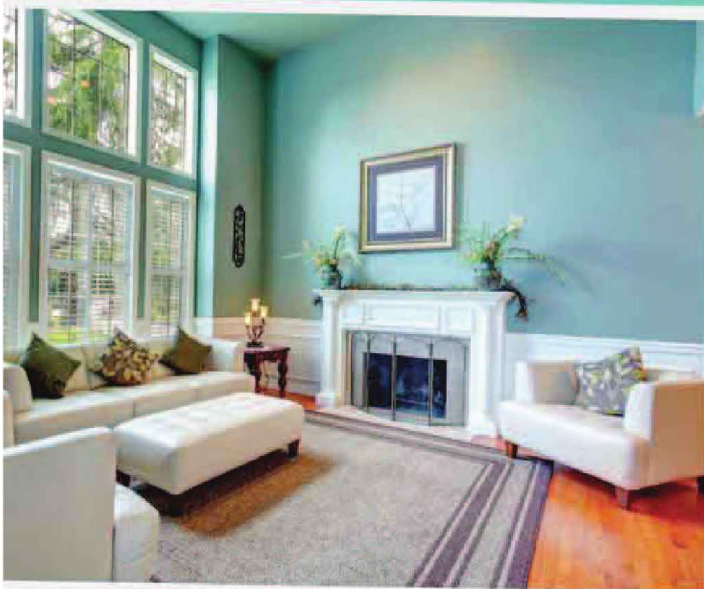
Focusing on the walls or the white furniture in this room would cause problems for an AF system due to lack of detail or contrast



Pro tip: Cameras with electronic viewfinders often offer a focusing aid known as focus peaking. This adds a false color to edges in a scene that are in sharp focus.



Positioning a subject off-center helps to place them in context



SHOOT A MOVING SUBJECT

MEDIUM

1 HOUR

BASIC

OUTDOORS

**SPORTS EVENT/
MOVING SUBJECT**

Find a situation where people will be moving toward you, such as a football game or running race. Or get a friend or model to run and move around in front of you.

- **Set** the AF mode to Continuous and the point selection to Automatic. Compose your image, then press the shutter button halfway down to focus.

- **Follow** your subject's movement as you shoot. Try slower moving subjects first—if using a model, ask them to walk toward you, then jog, then run.

- **Try** focusing on a fixed point in front of the subject, and then wait for them to pass by it, taking shots as they go.

- **Switch** off the autofocus and focus manually. Try to anticipate where your subject will move, and focus there.



Following this moving subject has kept him in crisp focus



LOCK FOCUS

EASY

30 MINUTES

BASIC

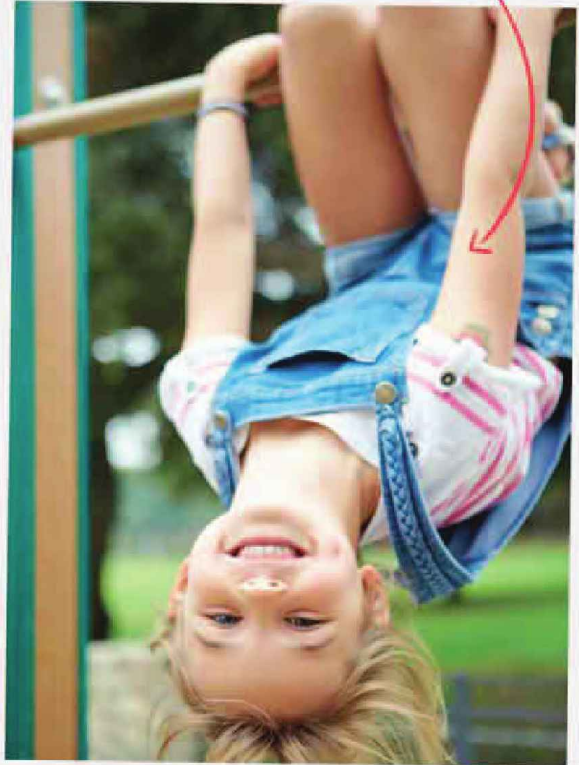
INDOORS OR OUTDOORS

A WELL-LIT SCENE

Locking focus allows you to put your subject right at the edge of your image

When using the **Single AF mode**, you can lock focus by holding down the shutter button. This means that you can focus and recompose if your subject is off-center and outside the range of a camera's AF points.

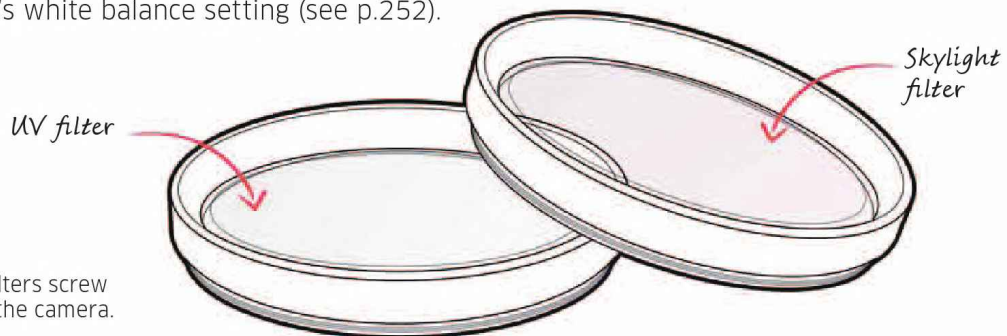
- **Identify** an interesting subject and find a composition that would suit placing the subject near the edge of the frame. This means that the background will be prominent in the composition, so consider how this will work with your subject.
- **Set** the AF mode to Single and use manual point selection to move the AF point to the center.
- **Turn** your camera so that your subject is central in the frame.
- **Press** halfway down on the shutter button to focus. With the shutter button held down, move the camera so that your chosen subject is at the edge of the frame.
- **Press** the shutter button down fully to take the shot.



GEAR: UV AND SKYLIGHT FILTERS

UV and skylight filters reduce the effect of ultraviolet light outdoors, which can be seen as haziness on bright sunny days. The difference between the two filters is that the skylight filter is slightly pink in color and will add a warm tint to a photo, though this effect may be counteracted by the camera's white balance setting (see p.252).

Neither filter affects exposure. In screw-in form, they can be left attached to a lens permanently, and this is often done to protect the front element of the lens from damage. It is far cheaper to replace a damaged filter than a damaged lens.



These types of filters screw into the front of the camera.

FOCUS FOR CLOSE-UPS

-  **EASY**
-  **30 MINUTES**
-  **BASIC**
-  **INDOORS OR OUTDOORS**
-  **A WELL-LIT SCENE**

Minimum focusing distances differ between cameras and lens types. These can vary quite considerably, from a few inches to many feet. Learning the limitations of your camera's lenses will help you decide whether a close-up shot will work before you begin shooting.

- **Choose** a subject that you can walk around and get close to. If you're using a zoom lens, set the lens to one end of the zoom range first.
- **Stand** approximately 12 in (30cm) from your subject, look through the Viewfinder of your camera, and press the shutter halfway down to focus. If the camera can't focus, this means that you're too close. Move 4 in (10cm) farther back and try again.
- **Move** backward and forward until you find a distance where the camera focuses reliably.
- **Turn** the zoom ring of your lens to the other extreme and repeat.
- **Do** the same with different lenses if possible.
- **Repeat** with other subjects, but now try to estimate the minimum focusing distance accurately before you focus.



Knowing when you're too close can be the difference between getting a shot or not.

FOCUS ON THE EYES

-  **MEDIUM**
-  **1 HOUR**
-  **BASIC**
-  **INDOORS OR OUTDOORS**
-  **A MODEL**

When we look at someone's face, whether it's in real life or in a photo, we generally look at the eyes first. That's why it's important to ensure that the subject's eyes in a portrait are sharp.

- **Place** your model in reasonably bright light, though not so bright that they squint.
- **Stand** about 3 ft (1 m) or so from your model.
- **Look** through the Viewfinder at your model. Set the AF mode to Single and use manual point-selection to move the AF point to their eyes.
- **Press** halfway down on the shutter button to focus, then press down fully to take the shot.
- **Repeat**, moving different distances from your model between shots.
- **Experiment** with manual focus to achieve sharp focus on your model's eyes.



This shot was taken using Face Recognition, an AF mode available on some cameras when shooting in Live View.

WHAT HAVE YOU LEARNED?

- Your focus point needs to be placed on your subject to ensure that it really is sharp.
- Learn to anticipate action, particularly when using manual focus.
- Cameras will help you judge focus even when using manual focus.
- Continuous AF will track action to keep a moving subject in focus.



▶ ASSESS YOUR RESULTS

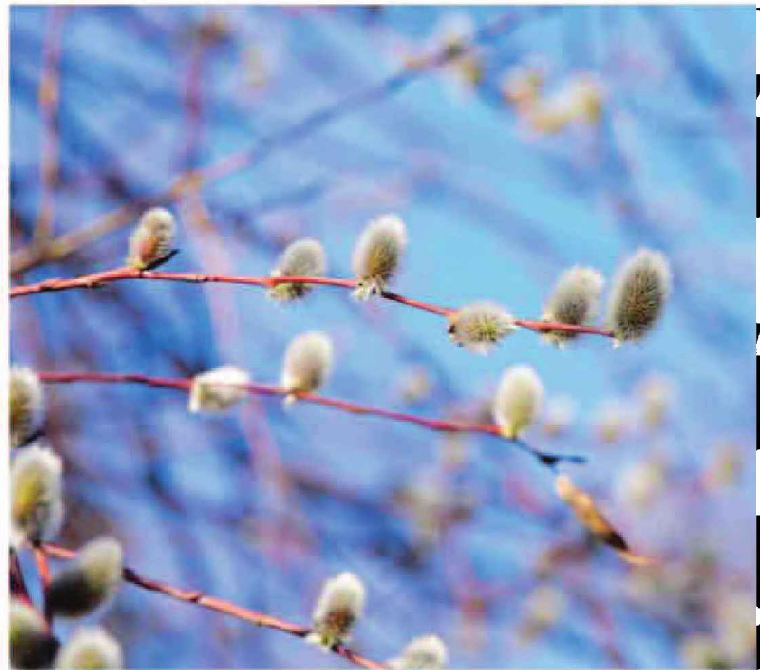
Reviewing your shots

Spend time looking through your photos once you've completed this module and experimented with focusing. Select some of the shots you think have either been successful or are interesting even if they're not entirely perfect. Use this checklist to assess what has worked in those photos and what could be refined.



Have you used focus creatively?

Areas that are out of focus can and should still add to a shot. In this photo, the shallow level of sharpness has created a strong sense of depth.



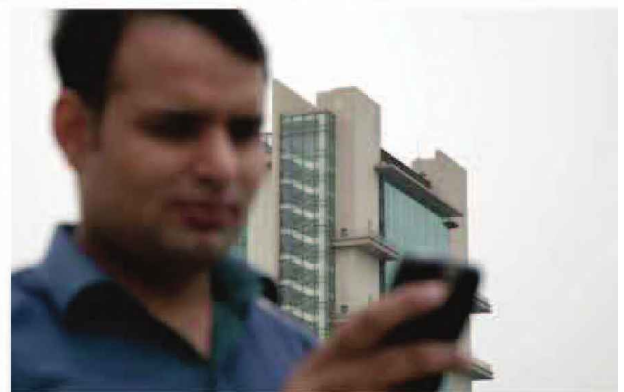
Which eye did you focus on?

When your subject's head is tilted at an angle, it's best to focus on the eye that is closest to the camera, or your image may look a bit odd.



Did you focus on the face?

Placing the focus on an element other than the subject's face can add an extra layer of novelty and interest to your shot.



Is your shot focused correctly?

Place the AF point in the wrong place and your subject may not be in focus. Here the camera has focused on the background rather than on the subject.

Pro tip: Pre-focusing is a useful technique for creating pleasing compositions, as long as you can accurately predict where your moving subject is going to be.



◀ Where did you focus?

Sometimes there is no right or wrong answer as to where you should focus. Here you could have chosen any of these people to be the focus point.



▲ Is your photo suffering from camera shake?

Caused when the camera moves during an exposure, camera shake can soften an image, but not in the same way as a focusing error. This photo is focused correctly but suffers from camera shake.



◀ Are your subjects sharp?

The faster a subject moves, the more difficult it is for a camera to keep it in focus. Subjects that move erratically make this more difficult still. Often, switching to manual focus and pre-focusing at infinity, if your subject is more than 30 ft (10m) from the camera, will lead to better results.

◀ Is everything sharp?

Where you focus is always the sharpest part of a photo. However, the front-to-back sharpness of this photo is controlled by the aperture, an effect known as depth of field (see pp.108-109).



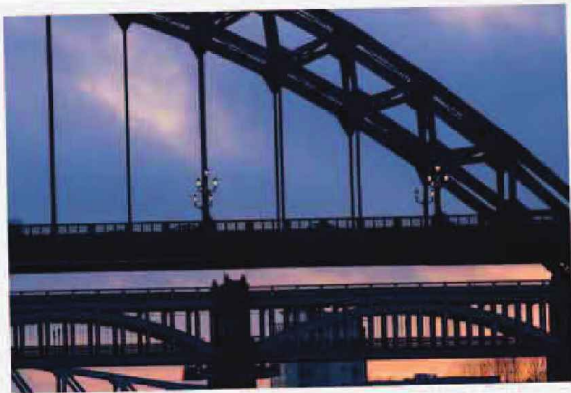
▶ ENHANCE YOUR IMAGES

Sharpening a photo



An out-of-focus photo can't be refocused in post-production, but photos sometimes don't look as sharp as they could. Most sensors are designed to deliberately soften photos slightly so as to reduce the risk of moiré (a false, shimmering pattern, seen in photos that include very fine, repetitive details, such as textiles). These photos

often need to be sharpened again post shooting. This can either be set in-camera or tweaked in post-production.



This image is slightly soft-looking.



1 Copy your photo

Sharpening a photo is known as a destructive process. This is because it alters the pixels in a photo dramatically and, once you've saved the results, the process cannot be undone. For this reason, work on a copy of your photo rather than the original.



Bridge_Image.jpg



Bridge_Image copy.jpg



5 Set a Radius value

The Radius slider controls the number of pixels around an edge pixel that will show an increase in sharpness. The lowest value, 0.0, means that no pixels on an edge will be altered. The highest value, 64, will affect a greater number of pixels and increase the sharpening effect. Move the slider until you get a value that suits your image.

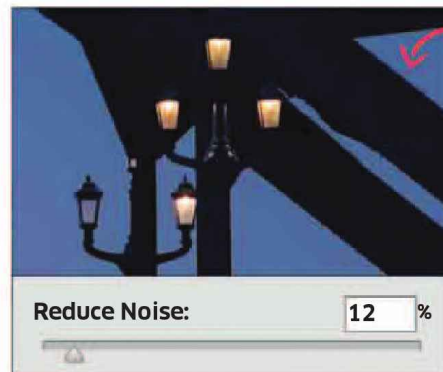


Set too high a radius level and halos will be seen along the edges between the different elements in your photo



6 Reduce noise

An unwanted side-effect of sharpening is the increased visibility of noise, the random fluctuations in brightness that can cause a speckled effect in photos (see p.86). Move the Reduce Noise slider to help combat this. No noise reduction is applied at 0 percent. At 100 percent the noise will be fully suppressed, but at the expense of fine detail in the photo.



Set Reduce Noise to a low value if areas such as the sky look smooth and noise-free

“ Photography has **no rules**. ”
It is **not a sport**.

BILL BRANDT

02

WEEK



2 Assess your photo

Open your copied photo in Photoshop (or similar). Set View to 100 percent using the Magnify tool and look closely at fine details in the photo to see how sharp they are (only look at areas you know to be in focus). Do not proceed if you feel your image is sharp.



View the image at less than 100 percent and you may not see the effects of sharpening.



3 Select Smart Sharpen

Photoshop has a number of tools to sharpen photos. The most comprehensive and adjustable tool is Smart Sharpen. To select it, go to Filter in the top menu, then Sharpen, then Smart Sharpen.



4 Choose the amount of sharpening

Move the Amount slider to control the level of sharpening applied to your photo.

The range of adjustment runs from 0 percent, where no sharpening is applied, to a maximum of 500 percent



7 Apply sharpening

Once you've achieved a satisfying balance between the three sliders, press OK. As a general rule, less sharpening is better than too much.

The image now looks much sharper.



IN-CAMERA FIXES

Digital photos are sharpened by increasing the contrast between edges in the photo. The higher the contrast, the sharper the photo looks. When you shoot JPEGs, the camera applies this type of sharpening automatically, and can be adjusted in-camera using a camera's picture parameters settings (see p.103). RAW files are not sharpened at the time of capture and must be sharpened in post-production.

How much sharpening do I need?

The level of sharpening you apply depends on how you intend to use the photo. Photos to be printed need higher levels of sharpening than those seen only on screen. But over-sharpening can produce an ugly and unnatural halo effect around edges in a photo. Experiment until you find the level that's right for you.