

Digital camera modes explained: choose the best shooting mode for your subject

On most DSLRs, the Mode dial is split into three sections: Scene modes (for doing point-and-shoot photography in specific conditions); full point-and-shoot Auto mode and the Program AE, Aperture Priority, Shutter Priority and Manual modes, which give varying degrees of control over your shots. In our latest [beginner photography tutorial](#) we explain how your digital camera modes work and when to use them.



Program exposure mode

Do you want your camera to set exposures automatically or would you rather have control over the lens aperture and shutter speed? This is what your camera's Mode dial is for.

The green Auto setting, the P setting and the Scene modes all adjust the aperture and shutter speed automatically. This is ideal if you don't have time to make adjustments.

We'll cover the Aperture Priority (A), Shutter Priority (S) and Manual (M) modes in subsequent sections. For now, we'll take a closer look at the fully automatic camera modes, the differences between them and which ones to use in specific shooting conditions.



Below we'll explain how to set these modes and the differences between Full Auto and P modes. But what about Scene modes? They go further than simple exposure adjustments and will typically include the following:

Portrait mode: This sets a lens aperture that's wider than normal to blur backgrounds, and adjusts the image processing for a softer, more flattering result.

Landscape mode: Using this mode will boost colours, contrast and outlines.

No flash mode: This disables the flash so it won't fire, even in dim lighting. This avoids embarrassment in theatres and museums.

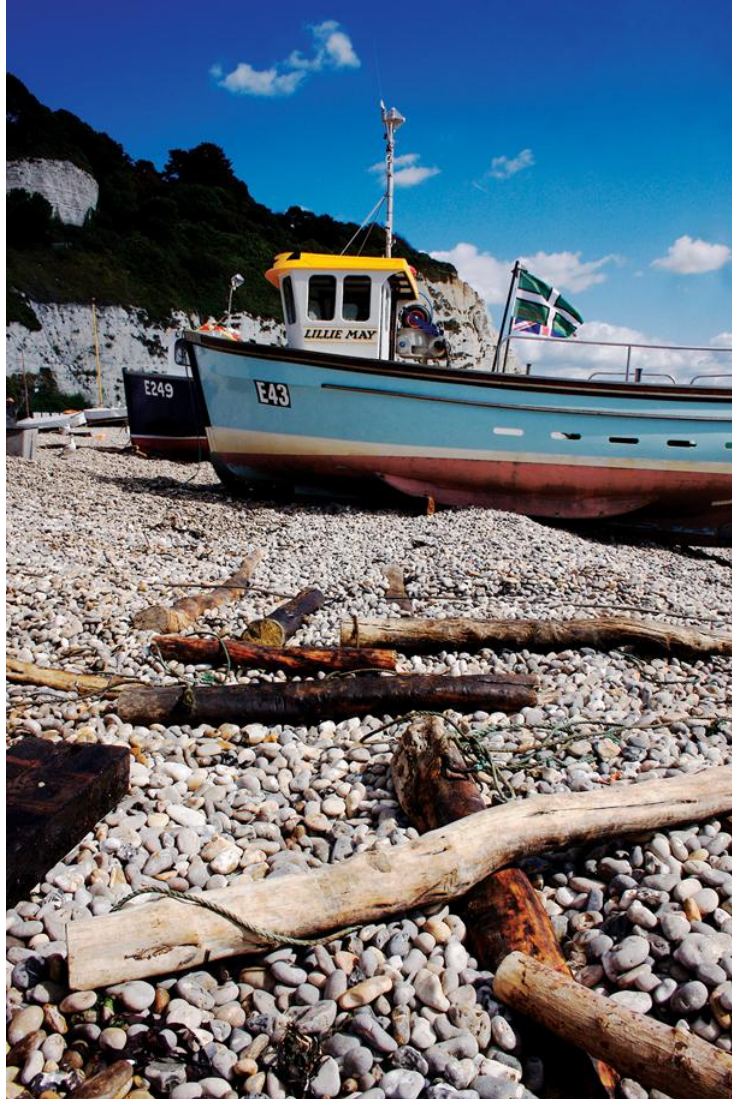
Sports mode: This mode's high shutter speeds will freeze action. The focusing is usually switched to Continuous mode or Predictive Autofocus, where available.

Close-up mode: The settings in this mode depend on the camera. Some will switch to Centre-spot focussing.

Night portrait mode: This mode uses flash to illuminate your subject, but this is balanced against the background lighting to produce a natural looking result.

These scene modes change the camera's focusing and image processing settings, as well as the lens aperture and shutter speed combinations. The differences are often subtle, though, and many photographers prefer to make adjustments manually.

Choosing between P and Auto camera modes



The green Auto mode really is completely automatic – it even pops up the flash if the camera calculates that additional lighting is needed and it automatically increases the ISO (sensitivity) in poor light to cut the risk of camera shake.

The P mode also sets the lens aperture and shutter speed, but it doesn't change the ISO or automatically fire the flash – these are controlled manually by you.

There's another important difference: in P mode, rotating the camera's command dial adjusts the relationship between the lens aperture and shutter speed, while maintaining the correct exposure, so you can select a faster shutter speed or a smaller lens aperture without having to leave the P mode. This is usually referred to as Program Shift. That just leaves the various Scene modes.

Aperture Priority (Av) mode



Aperture Priority (A) mode enables you to choose the lens aperture. Your camera then automatically sets the shutter speed that will give the correct exposure.

This is useful in situations where you want precise control over [depth of field](#). Shallow depth of field means only subjects close to your camera are sharp, while more distant objects are out of focus. Large depth of field means everything is sharp, from nearby objects to the far distance.

[Depth of field changes according to the lens aperture](#), the focal length of the lens (the zoom setting) and the focused distance.

So depth of field will diminish with longer focal lengths, [wider lens apertures and nearer subjects](#).

It [increases with shorter focal lengths](#), smaller lens apertures and more distant subjects.

Shallow depth of field is good for isolating portrait subjects sharply against a blurred background, while large depth of field is good for close-ups and landscapes, [where you want everything sharp](#).

If you choose a wide aperture (a [low f-number](#)), it will result in reduced depth of field but faster shutter speeds because the lens is allowing more light through to the sensor.

If you choose a small aperture, you will get a greater depth of field, but slower shutter speeds (because less light is now reaching the sensor).

If you want a large depth of field and therefore choose a small lens aperture, you need to keep an eye on the shutter speeds because they could become so low that you risk camera shake.

That's one reason why professional landscape photographers use tripods – they're using small lens apertures to get maximum depth of field so nearby objects and the distant horizon are sharp.

You may want to bear in mind that lenses don't give their sharpest results at the extreme ends of their aperture ranges. At maximum aperture your photographs are likely to look slightly softer than if you stop it down to f/5.6 or f/8. Similarly, at f/16 – and certainly by f/22 – the sharpness will begin to diminish again.

As a rule, it's more important to get the best shot pictorially, so if you need a wide or small aperture to achieve that shot, don't worry about it.

Generally, though, the aperture range f/5.6 – 11 is best when depth of field isn't an issue, but you do want to be sure you're getting the best sharpness.

Lens aperture and focal length



You can set Aperture Priority mode by turning your camera's Mode dial to A. Press the shutter button halfway down to activate the exposure meter, then turn the Command dial.

This alters the f-number on the camera's status panel or LCD. The maximum aperture corresponds with the lowest number and depends on the lens and its zoom setting.

Most DSLR kit lenses have a maximum aperture of f3.5 at the wide-angle end of the zoom range and f5.6 at the maximum telephoto setting. In this shot, the lens was originally set to 28mm equivalent and full aperture (f3.5).

We then zoomed in to 50mm equivalent, where the lens's maximum aperture was f4. The camera made the adjustment automatically.

Shutter Priority (Tv) mode



When using Shutter Priority (S or Tv) mode, you [choose the shutter speed](#) and the camera automatically chooses the lens aperture that will give the correct exposure.

Shutter Priority mode is particularly useful when you want to control the amount of movement blur that appears in your shots. To freeze fast-moving action in a sports shot, for example, you'll need to select a fast shutter speed.

When you use this setting, there's a risk that you might accidentally overstep the available aperture range. If this happens, the camera may display an alert, but will still take the picture (which will end up looking under-exposed).

Some models have a 'safety' option, which will restrict the shutter speeds available in particular conditions to prevent this.

Similarly, if you choose a shutter speed so low that the camera can't select a lens aperture small enough, it will either take an overexposed shot, or restrict the shutter speeds available to you.

Paradoxically, if you want to shoot with the fastest shutter speed possible under the conditions, it's better to switch to Aperture Priority (A) mode and choose the maximum aperture. The camera will then select the fastest speed you'll be able to achieve in the conditions.

Shutter Priority mode is best when you want to create movement blur. It's useful for [panning shots](#), where the subject shows up sharply against a blurred background ([try shutter speeds in the region of](#)

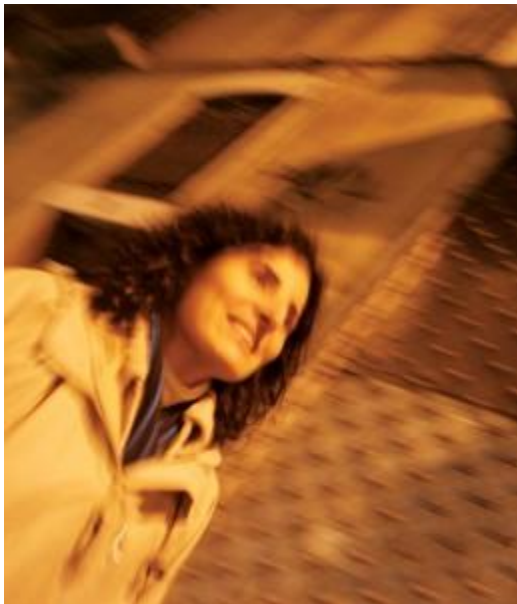
1/60sec to 1/250sec), for blurring wheels or limbs to show movement (try 1/15sec to 1/125sec) or to give moving water a silky sheen (1/4sec to 2sec or longer). In each case, make sure the camera can select a suitable lens aperture for correct exposure.

You can access the Shutter Priority mode by moving your camera's mode dial to the S or Tv position. You then need to half-press the shutter release to activate the exposure metering system. Now rotate the camera's Command dial while watching the status panel or the LCD.

Depending on the camera model, you turn the dial either clockwise or anti-clockwise to increase or reduce the shutter speed.

You'll need to [use a tripod](#) for shutter speeds of 1/30sec or longer. This minimum shutter speed is higher with longer zoom settings.

Safe shutter speeds



No one can hold a camera perfectly still, and the slower the shutter speed, the greater [the risk of blurring from camera shake](#). It can be dangerous to generalise, but there's a rule of thumb for working out safe shutter speeds.

It's based on the equivalent focal length you're using. The 18mm wide-angle position on the kit lens will correspond roughly to a 28mm lens on a film camera and the 55mm position corresponds to approximately 85mm in film camera terms (this doesn't apply to [full-frame DSLRs](#), where no conversion is needed).

Simply take the reciprocal of the equivalent focal length to find out the minimum safe shutter speed. So at the 18mm position this would be 1/27sec (the nearest equivalent is 1/30sec), while at the 55mm position it would be 1/83sec (1/80sec or 1/90sec is the nearest).

Manual mode



In Manual mode, you control both the lens aperture and the shutter speed directly. The camera will still measure the light levels, but it will only recommend an exposure – it won't change any of the settings itself.

Manual mode is useful in [home photo studios](#) and for [still life photography](#) where you've arranged the lighting carefully and have time to take exposure measurements, either with the camera or using a separate hand-held light meter (which can yield more accurate results in some conditions).

It's also useful if you want to take a series of overlapping frames and [stitch them together as a panorama](#). Here, it's essential there are no exposure variations between the frames.

To set the exposure manually, turn the Mode dial to the M position. What happens next depends on [the camera and how it's set up](#).

On digital cameras with a single Command dial, turning the dial adjusts either the lens aperture or the shutter speed. To adjust the other, you hold down the exposure compensation button while you turn the dial.

On digital cameras with twin Command dials, one will adjust the shutter speed and the other will adjust the lens aperture.

- For more on your camera's top plate, see [Digital Cameras: what the manual doesn't teach you](#)
To measure the exposure using your camera, you need to look at the exposure display in the viewfinder or on the LCD and adjust the shutter speed and/or aperture until the marker appears in the middle of the exposure bar.

[Handheld light meters have advantages](#) in studios or in situations where you have your camera set up on a tripod. You can go up close to the subject and take meter readings from different areas to work out an average value.

Most handheld meters also include incident light attachments, which are translucent domes that fit over the sensor. These enable you to measure the amount of light falling on the subject rather than how much light it's reflecting (which can vary according to the subject's properties).

This is often the slowest but best way of measuring exposure, and is something that the exposure meters built into DSLRs can't do themselves.

The handheld meter will quote a choice of shutter speeds and lens apertures, which you can then set on the camera using the controls we've already mentioned – it's up to you how you want to balance the shutter speed against the lens aperture.