

05 week

ACHIEVING THE RIGHT CONTRAST

Contrast is the difference in brightness between the shadows and the highlights of an image. Understanding contrast and learning how to achieve different contrast effects will give you greater scope for creating photos that leave a strong visual impression.

In this module, you will:

- ▶ **discover what contrast is** and how it affects your photos;
- ▶ **understand how lighting** affects contrast;
- ▶ **learn what the dynamic range** of your camera is;
- ▶ **apply your new knowledge** and shoot an HDR photo;
- ▶ **experiment with high- and low-contrast** light;
- ▶ **enhance the contrast** in post-production;
- ▶ **review your understanding** of contrast and see if you're ready to move on.

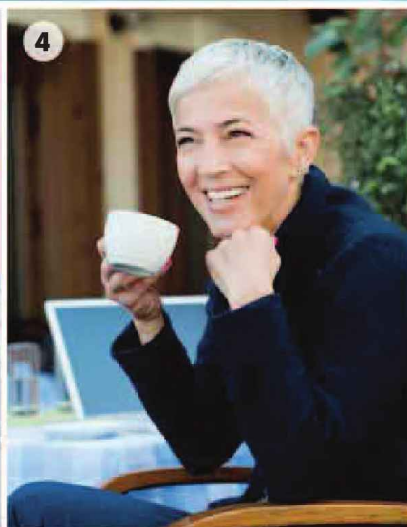
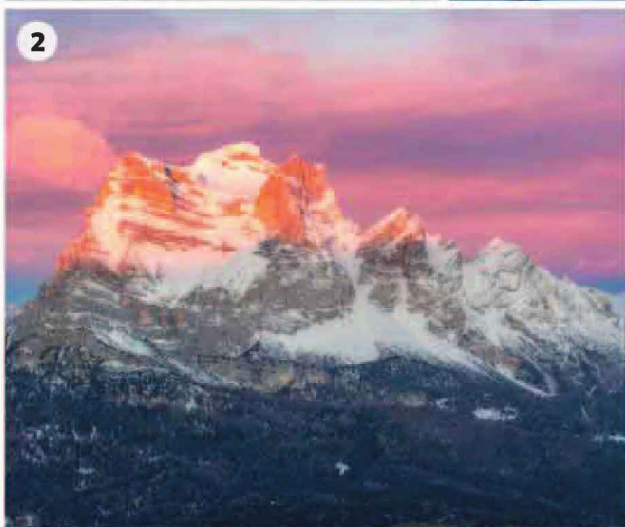
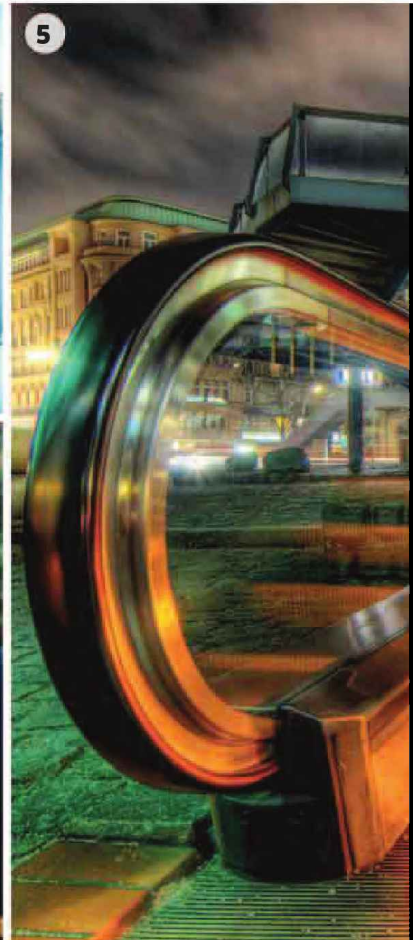
Let's begin...





▶ TEST YOUR KNOWLEDGE

What is the right contrast?



The “right” level of contrast is, of course, simply the one that is best for the subject and the image you want to create. These seven photographs demonstrate different levels of contrast. Can you match each characteristic with the relevant image?

A Normal contrast: When shadows aren't too deep and highlights aren't too bright.

B High contrast: When the difference in the brightness of the shadows and highlights is marked.

C Low contrast: When the difference in the brightness of the shadows and highlights is small.

D Very high contrast: When the difference between the brightness of the shadows and highlights is extreme.

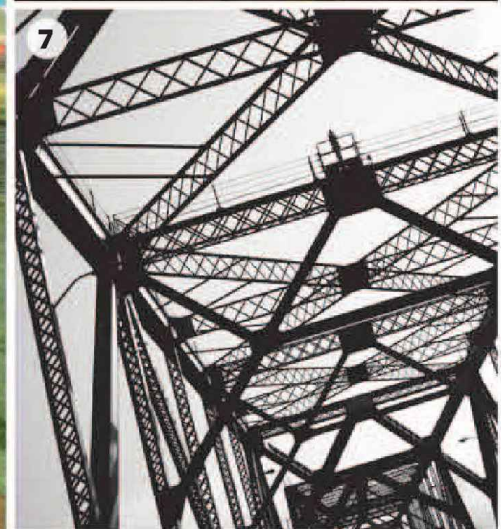
E Very low contrast: When there is virtually no difference in the brightness of the shadows and the highlights.

F HDR: A high-dynamic-range photo is a blend of two or more photos to solve a problem with contrast. The results are striking though often unrealistic.

G Split contrast: When one area of the scene is in low contrast, while another area is in high contrast.

ANSWERS

- E / 1: A pristine covering of snow
- F / 5: An escalator in Hamburg, Germany
- G / 2: Sunrise on Mount Pelmo, Italy
- A / 4: Woman drinking coffee
- B / 6: Clouds covering the sun in the skies above Puerto Rico
- C / 3: Morning fog hovering over a lake
- D / 7: Girders on an iron bridge



NEED TO KNOW

- Creating a successful photo means understanding how contrast will affect that photo, and learning how a camera “sees.” This takes practice, but by persevering, it is possible to know when contrast is either too high or too low.
- High contrast generally needs to be corrected at the time of shooting, either by altering the quality of the light or by waiting until the light changes naturally.

- An extreme level of contrast is rarely seen in nature, although photographs can be adjusted so that they are very high-contrast.
- Low contrast is more easily adjusted in post-production or by using in-camera fixes during the actual photoshoot (see pp.98-99).



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



► UNDERSTAND THE THEORY

The effects of contrast

It is the quality of the light illuminating a scene that determines the level of contrast. Light is described as hard or soft; hard light causes high contrast, soft light results in lower contrast. What defines a light as hard or soft depends on the size of the light source compared to the scene.

Hard light is created by a point light source—one that is small in comparison to the scene it illuminates. Soft light is created by a relatively large light source.



HARD LIGHT/HIGH CONTRAST

Point light sources cast deep, sharply defined shadows and create small, bright highlights. The sun in a cloudless sky or a single bare light bulb in a room are both point light sources.

HARD LIGHT

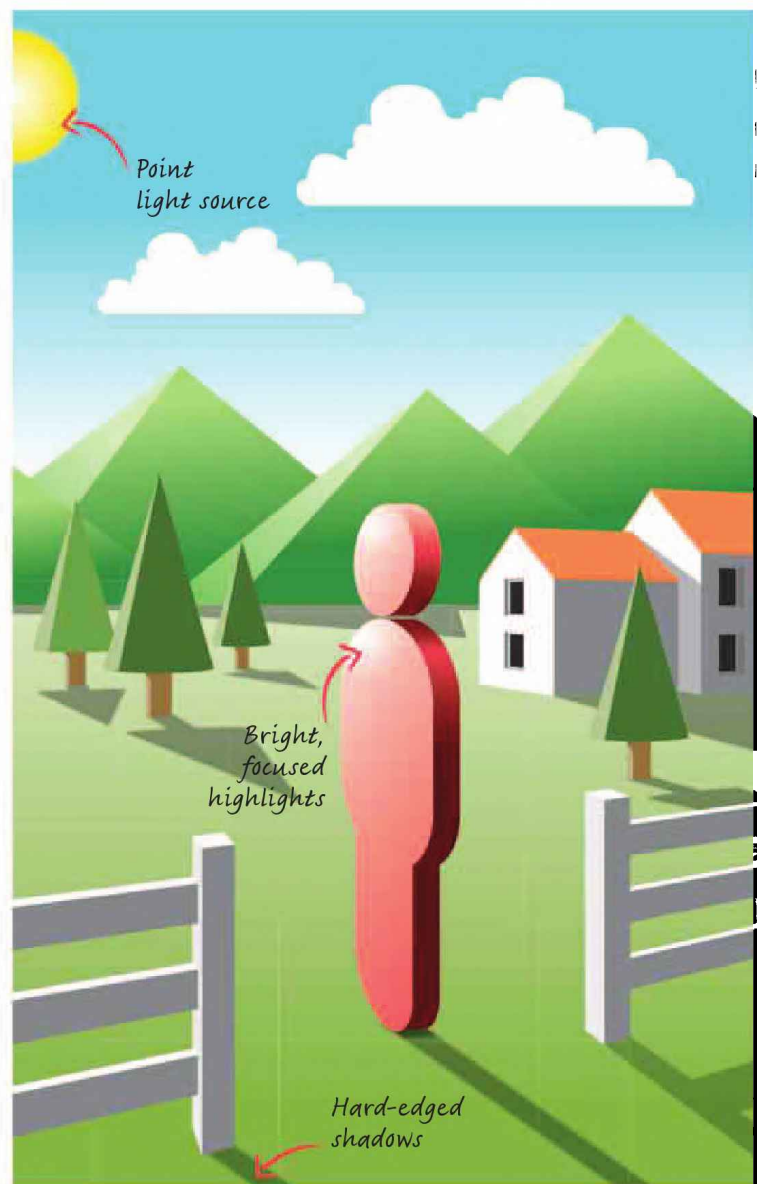
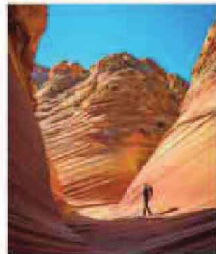
Portraits Hard light emphasizes facial features by casting deep shadows. Using hard light/high contrast for portraiture produces dramatic photos but can also lead to unattractive highlights.



Buildings Hard light highlights and accentuates shapes, making it particularly suitable for modern buildings with a geometric design. Bright highlights on glass can create exposure problems.



Landscape Hard light is excellent for defining the shapes of inorganic details, such as rocks, but the contrast is less attractive when shooting organic subjects.

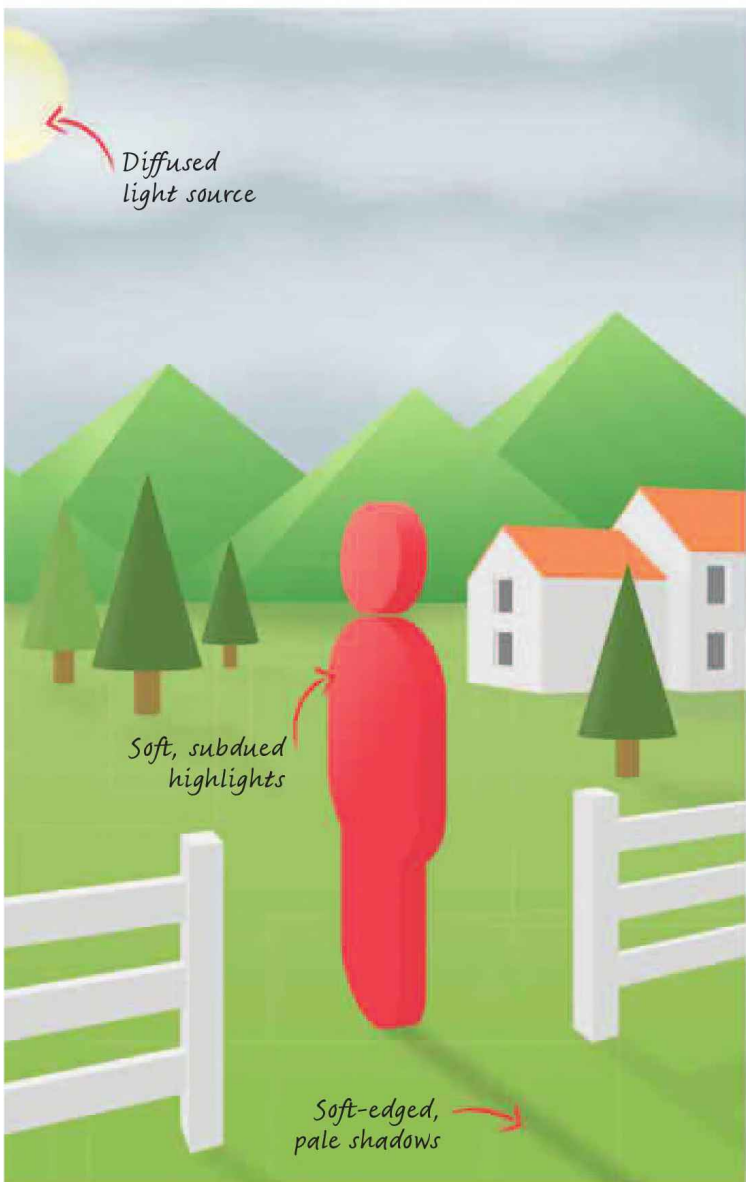


“ Contrast is what makes photography interesting. ”

CONRAD HALL

SOFT LIGHT/LOW CONTRAST

Soft light sources cast very pale, soft-edged shadows—or none at all when a light source is particularly soft—and highlights are muted. Sunlight diffused by clouds is a soft light source.



i SHADE

The ambient light of a shaded area is soft. When shooting details or small items, casting a shadow over the subject will lower the contrast. Make sure the whole area “seen” by the camera is in shade: if any part of the shot is in direct sunlight, then the contrast will be higher than the camera can successfully capture. You can use your camera's histogram to check contrast.



High contrast Two peaks separated by a wide gap indicates high contrast.



Low contrast One narrow peak indicates that the scene is very low-contrast.

💡 SOFT LIGHT



Portraits Soft light removes the emphasis from the shape of facial features. It is typically used when shooting female subjects or children.



Buildings With few shadows to define shape, details are often harder to see. Bright highlights on glass are reduced, but the material can look gray and flat.



Landscape Soft light means that there are few shadows to create interesting details in wide-open landscapes. However, soft light is excellent for close-ups of organic subjects such as flowers.



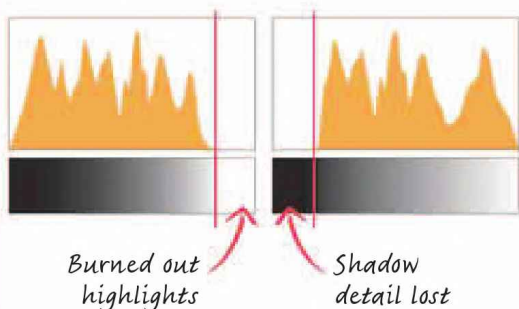
► UNDERSTAND THE THEORY

Dynamic range

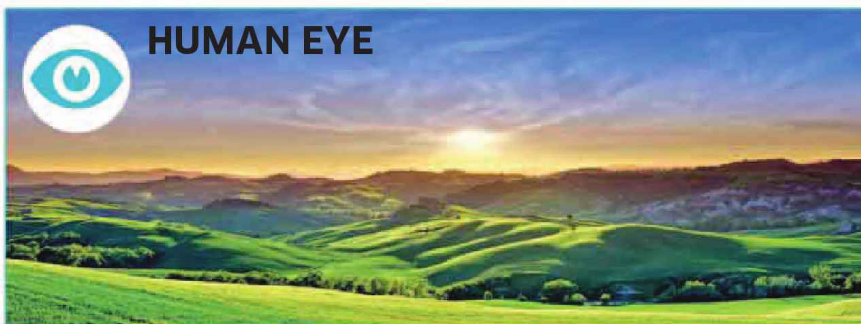
Cameras vary in the range of detail that can be recorded between the darkest part of a scene and the lightest. A camera that can record a wide spread of tones without loss of detail is said to have a high dynamic range, whereas cameras that can only record a narrow band of tones have a low dynamic range. The dynamic range of a camera is important when shooting high-contrast scenes. It determines how well detail can be recorded in both the shadows and highlights without their being lost, or clipped.

i HUMAN EYE VS. CAMERA

The human eye can generally see a broad range of tones from black to white. In high-contrast light, a camera with a low dynamic range will capture fewer tones. You should set the camera to expose for the shadows and burn out the brightest highlights (see left), or expose for the highlights and lose detail in the shadow areas (see right).



HUMAN EYE



DIGITAL COMPACT

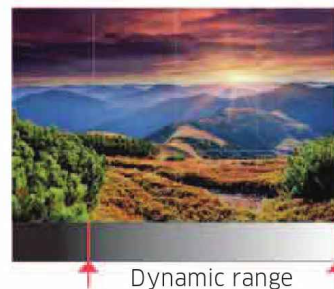


DSLR



HDR CAPTURE

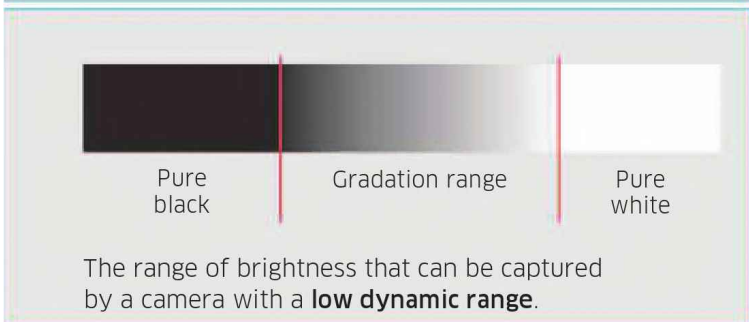
One technique to get the full tonal range of a scene is to shoot two or more exposure bracketed photos. These images can then be blended in-camera, or in post-production later; such photos are known as High Dynamic Range (HDR) images.



Shot 1: Exposure captures details in the highlights.

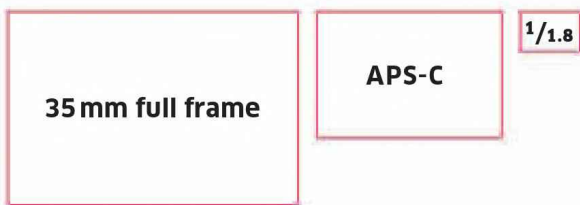
Pro tip: Low-contrast scenes generally benefit from an increase in contrast. You can do this either by setting a picture parameter that boosts image contrast prior to making the shot, or by adjustment in post-production afterward.

Pro tip: Squint when you look at a scene. A good indication of high contrast is when detail in the shadows is not visible when you're squinting. This is a rough—but useful—way to see whether contrast may be a problem.



SENSOR SIZE

The smaller the sensor inside a camera, the lower the dynamic range of the camera. It is generally more difficult to achieve an ideal exposure of shadows and highlights with a compact camera. Cameras with larger sensors—such as dSLRs—can retain detail in both the shadows and highlights more easily.



CONTRAST



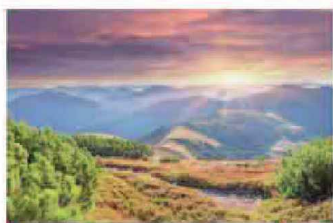
When contrast is high it can be difficult to capture the full tonal range of a scene. One solution is to shoot subjects that benefit from high contrast to help define their shape.



For softer subjects, a better solution is to lower contrast (and reduce the tonal range) by using a fill light such as flash to lighten dark shadows.

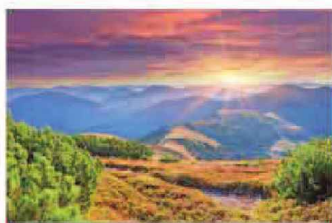


When shooting outside, wait until clouds soften the sun's light and contrast is naturally lower.



Dynamic range

Shot 2: Detail is retained in the shadows.



Dynamic range

HDR image: Exhibits combined tonal range of both shots.



▶ LEARN THE SKILLS

Shooting an HDR photo



HDR (High Dynamic Range) is a technique for creating photos with a wide range of tone and detail in both the shadows and the highlights. The technique involves shooting a sequence of photos using a wide range of exposures, and then blending them together. Many cameras can now create HDR photos.

This image has dark shadows in the ruin's corners and bright highlights in the clouds



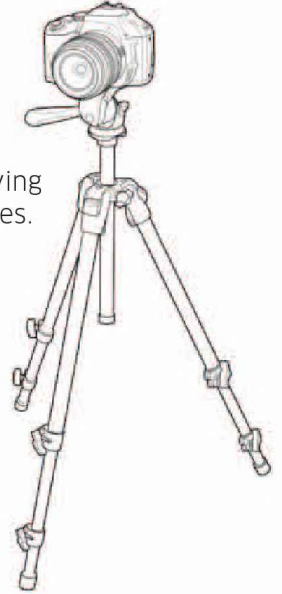
1 Assess your location

Look at the scene around you to see if there is a noticeable difference between the brightness of the shadows and the highlights. If so, then HDR will be appropriate.



2 Put your camera on a tripod

HDR requires the shooting of two or more photos, so use a tripod to prevent the camera from moving between exposures.



6 Take a photo

HDR is suitable for subjects that don't move. A subject that moves can cause strange visual effects in the final HDR photo. Watch the scene closely for movement, and only shoot when you are confident that the scene is entirely still.

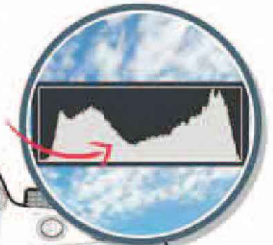
No detail in highlights



7 Review your shot

Look at your shot in Playback to see if there have been any odd effects caused by movement during the HDR process.

Check for detail in the shadows and highlights using the histogram



The camera takes a set of photos at different exposures.

No detail in shadows



Where to start: Select a subject suitable for an HDR photo. It should feature contrast that is beyond a camera's normal dynamic range and where there is little movement in the scene.

You will learn: How to shoot a High Dynamic Range photo in-camera, how to check whether the image is successful, and what can go wrong during the shooting process.



3 Choose HDR

Select HDR as shown in your camera manual. HDR is found either as one of a suite of different effects modes or as a separate menu option.

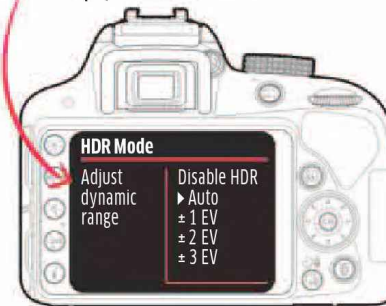
The HDR symbol may look like this



4 Choose the correct settings

Adjust the HDR settings on your camera. If there are no options available, then the camera will shoot a set number of photos and blend them automatically.

A dSLR often lets you set how many photos are blended



5 Select self-timer or use a remote release

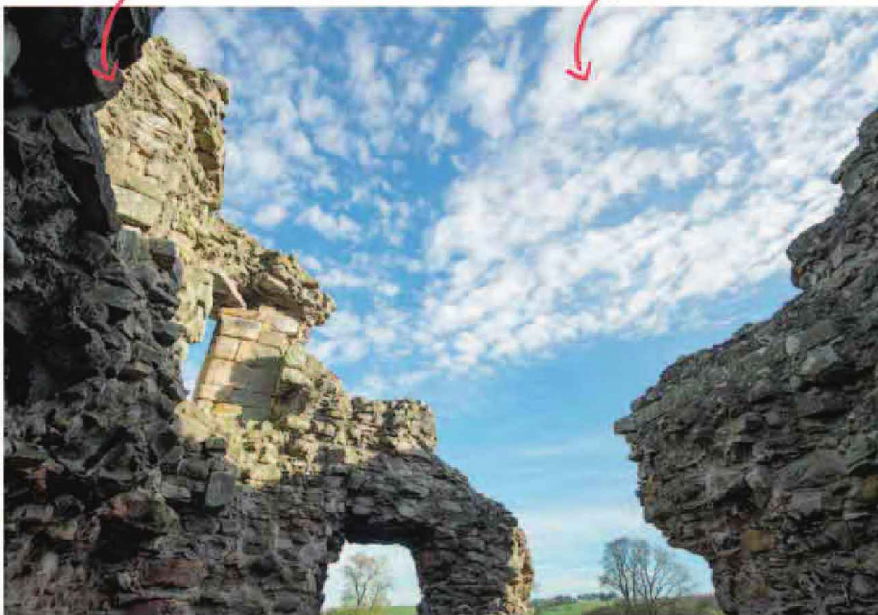
Use the camera's self-timer or a remote release to reduce the risk of accidentally bumping the camera when pressing the shutter button.

A remote release is a better option if you need to fire the shutter at a specific moment



Detail in shadow

Detail in highlights



WHAT HAVE YOU LEARNED?

- HDR is suitable when the exposure cannot be set to retain detail in the highlights and the shadows.
- HDR should not be used when contrast is normal or low and the tonal range is within a camera's dynamic range.
- Some subjects aren't suitable for in-camera HDR shooting. Windblown subjects, such as trees or flowing water, will cause odd visual effects.



▶ PRACTICE AND EXPERIMENT

Playing with contrast

There is no right or wrong answer as to what level of contrast is right for a photo: the key is to choose the level that is appropriate for the subject. There are several ways to learn about contrast. Looking at the work of other photographers is one very useful method. However, nothing beats practical experimentation. These assignments provide an introduction to the effects of contrast. You'll need to set your camera to Program mode.



EASY

2 X 2 HOURS

BASIC + tripod

OUTDOORS

WOODED LOCATION

Although forests are attractive in bright sunshine, the effects of light and shade can produce very high contrast. It is often easier to produce pleasing woodland photos on overcast days.

■ **Spend** two hours photographing scenic and close-up shots in an area of woods on an overcast day.

■ **Mount** your camera on a tripod to avoid camera shake.

■ **Return** to the same location on a day with bright sunshine. Repeat your original compositions and note the difference between the two sets of photos.



SHOOTING IN SOFT LIGHT

MEDIUM

1 HOUR

BASIC + tripod

INDOORS

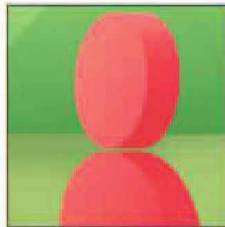
MODEL

Without direct sunlight, light filtered through a window is usually soft and low in contrast. This is ideal for shooting photos with a romantic or innocent feel.

■ **Place** your model close to a window so that the light is illuminating your model's face from the side.

■ **Mount** your camera on a tripod and shoot five to ten images. Ask your model to move closer to and away from the window.

■ **Review** the photos and note how the contrast changes depending on the model's distance from the window.



Adjust the exposure compensation to avoid overexposure.

Pro tip: Even on overcast days, the sky is far brighter than the ambient light of a wooded area. Sky often burns out when the exposure is set correctly for the woods. Removing sky from the composition will avoid large areas of detail-free white in your photo.

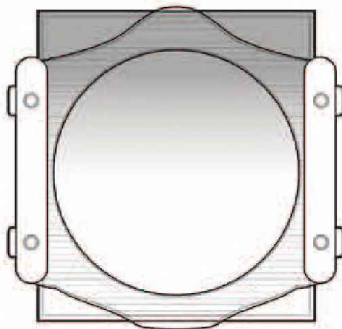


Light levels may be low, so use an ISO of 400 or even 800

i ND GRADUATED FILTER

An ND graduated filter can help solve a common problem with landscape photography: the difference in brightness between the sky and the foreground. The filter is split into a clear bottom half and a semi-opaque top half, which reduces the brightness of the sky so that the exposure matches the foreground. ND graduated filters are available in different strengths. The most common are 1-stop, 2-stop, and 3-stop. The strength required will depend on the exposure

difference between the foreground and sky, which you can check by using your camera's Spot meter.



POINT LIGHT SOURCE

MEDIUM

INDOORS

1 HOUR

MODEL AND DESK LAMP

BASIC + tripod, telephoto lens

Point light sources, such as a desk lamp, don't provide subtle illumination, but they are ideal for adding drama to a portrait.

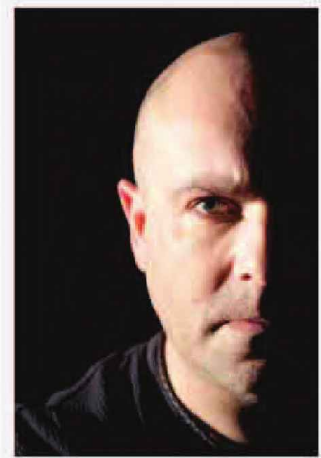
■ **Work** in a room that can be darkened. Ask your model to sit down, and illuminate them from one side using a desk lamp.

■ **Set** your camera up on a tripod and attach a short telephoto lens.

■ **Darken** the room so that the only source of light is the desk lamp.

■ **Experiment** by moving the lamp to different positions as you shoot.

■ **Review** the photos to see how contrast changes between the shots.



WHAT HAVE YOU LEARNED?

- Soft light is lower in contrast and more subtle than hard light, and, as such, best suits soft, organic subjects.
- Bright sunshine in a wooded setting will create high levels of contrast, which can produce confusing images.
- One small point light source produces high-contrast lighting.



▶ ASSESS YOUR RESULTS

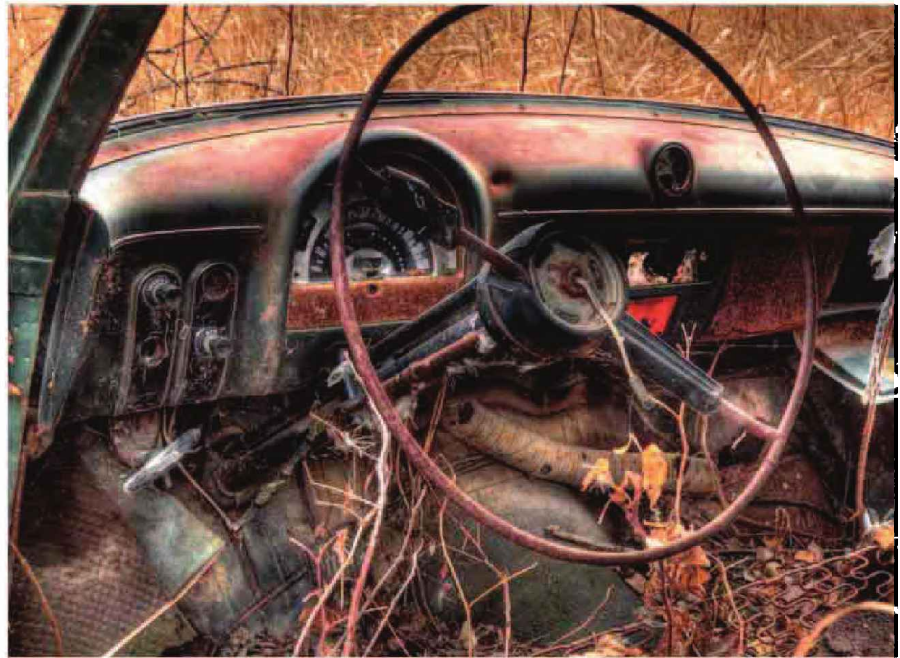
Reviewing your shots

Once you've completed the assignments, pick out your best shots. Use the notes here to help assess what worked in your photos and what could be improved.



Is your HDR photo successful?

A successful HDR photo should have detail in both the shadows and the highlights, as in this photo. If yours does not, the exposure range needs to be increased.



Is there a bright band on your landscape horizon?

When an ND graduated filter is placed too high, it won't cover the entire sky. This can lead to an unnatural bright strip close to the horizon, as shown here.



Are large areas of your photo burned out?

A burned-out or pure white area in a photo can be a distraction. Here, the photographer could have prevented a burned-out sky by shooting when the sun had moved and contrast was lower.



Does your HDR photo look realistic?

The HDR technique can be used to produce both natural-looking photos and very artificial ones. This photo does not look very natural, though its garish colors do produce a striking effect.

Pro tip: We tend to notice brighter areas of a photo more readily than darker areas. Highlights that are brighter than your subject may therefore be more eye-catching. Try to exclude bright areas from a photo if they are not necessary to the composition.

Pro tip: Whether exposure is set to retain highlights or shadows is a choice you often have to make. As a general rule, expose to retain detail in the highlights: dark shadows look more natural than burned-out highlights.

Is your woodland a mess of shadows and highlights?
Wooded areas in bright sunshine make for a high-contrast scene and a confusing image of dark shadows and bright highlights. This photo would arguably work better in softer light when contrast is lower.



Is your photo low-contrast?
Some scenes are naturally low in contrast, which can make for very flat-looking photos. It is for you to decide if contrast should be added in post-production. Would you adjust the contrast in this photo?



Is the top of your subject dark?
An ND graduated filter will darken any vertical element it covers, and should be used sparingly where there isn't a straight horizon. The ND graduated filter is all too obvious on the hilltops in this photo.



Do the shadows lack detail?
High contrast may make it difficult to retain detail in the shadows. Whether this is important will depend on your subject. The shadows in this photo are very dark, but they add to the photo's impact.



▶ ENHANCE YOUR IMAGES

Adjusting contrast



The aim of adding or reducing contrast in post-production is to produce an image with a pleasing range of tones that enhances your subject. When your photos need added punch, Adobe Photoshop's Brightness/Contrast tonal adjustment tool is very quick and easy to use.



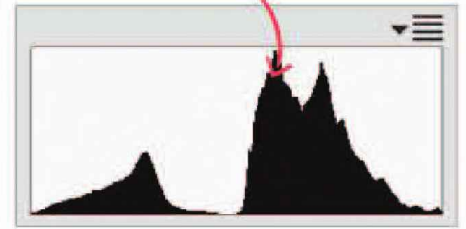
Shot using Raw, this image was flat and lacking in contrast when opened



1 View the histogram

A useful tool that will help you make accurate tonal adjustments is a histogram. This lets you see how the tonal range of your image is affected as you use Brightness/Contrast. To access it, pull down the Window menu and select Histogram.

The histogram can be used in conjunction with many other adjustment tools



4 Add contrast

To increase contrast, drag the "Contrast" slider to the right. The shadows in the image will become darker and the highlights brighter. The color also becomes more intense and vibrant.

Increasing contrast raises the risk that highlights will burn out



Add a value between 0 and 50 to the Contrast box to strengthen contrast, and a value between 0 and -50 to reduce it



5 Adjust the brightness

Use the Brightness slider to alter the lightness or darkness of your photo. To darken this photo, the slider has been moved to the left.

Darkening the photo has added detail and impact to the clouds



Brightness can be adjusted numerically between -150 and 150

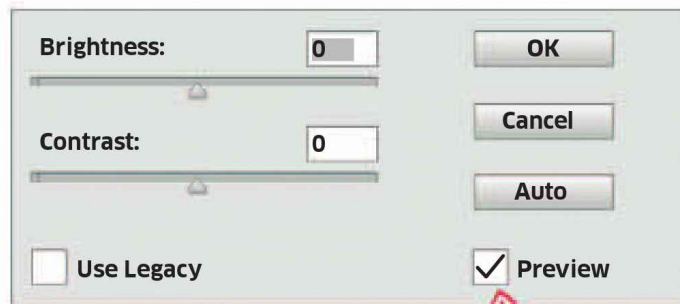


Pro tip: Reducing the contrast of a high-contrast photo can lead to an unwanted loss of image quality. It is better to start with an image where there is little difference between highlights and shadows and then add contrast.



2 Select Brightness/Contrast

Go to the top menu and select Image, then Adjustments, then Brightness/Contrast. Check the Preview box so that you can see how your photo is altered as you adjust the Brightness/Contrast sliders.



Toggle Preview on and off to see a before and after version of your photo



3 Assess the image

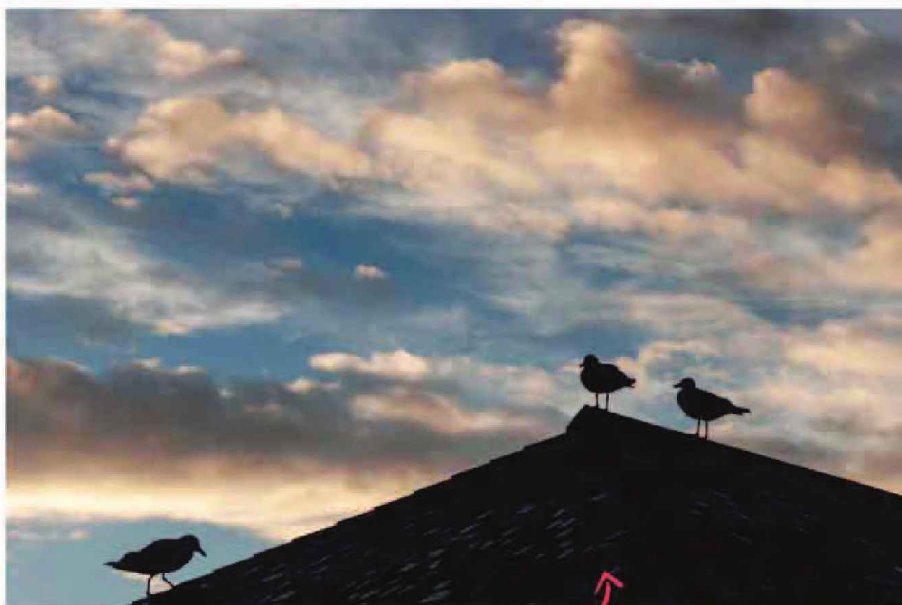
It's a good idea to know how you want the image adjusted before you begin. In this case, contrast needs to be increased. However, the photo looks as though it will benefit from a small reduction in Brightness too.



There is little contrast between the gray roof and the clouds in the sky

i IN-CAMERA FIXES

JPEG images are processed right after shooting according to your camera's picture parameters. These are presets for how sharp the photo is, how vibrant its colors are, and its level of contrast. Picture parameters such as Landscape increase color and contrast. Others, such as Neutral, affect color and contrast less, while Low Contrast retains detail in the shadows and highlights. Selecting the right picture parameter before you begin shooting can save valuable time afterward.



With contrast increased and brightness lowered, the photo has more impact