

# 17

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# Week

## WORKING WITH FLASH

Most dSLRs come with a built-in flash. However, its fixed range and position limits its uses. A separate flashgun—or flash unit—offers much more versatility. It can be used on the camera to give a hard light or to fill in details, or off the camera to provide gentler and more directional illumination.

### In this module, you will:

- ▶ **assess your understanding** of how camera flash can be used to creatively light a situation;
- ▶ **study how flash works** and how to use bounce flash and fill-in flash;
- ▶ **get to grips with the basics** by following a step-by-step guide for off-camera flash effects;
- ▶ **learn how to freeze motion** and create drama in low-light scenes;
- ▶ **correct mistakes** such as red eye using editing software;
- ▶ **review your photographs** to make sure you're using your flash as creatively as possible;
- ▶ **recap what you've learned** and test your knowledge of flash techniques to see if you're ready to move on.

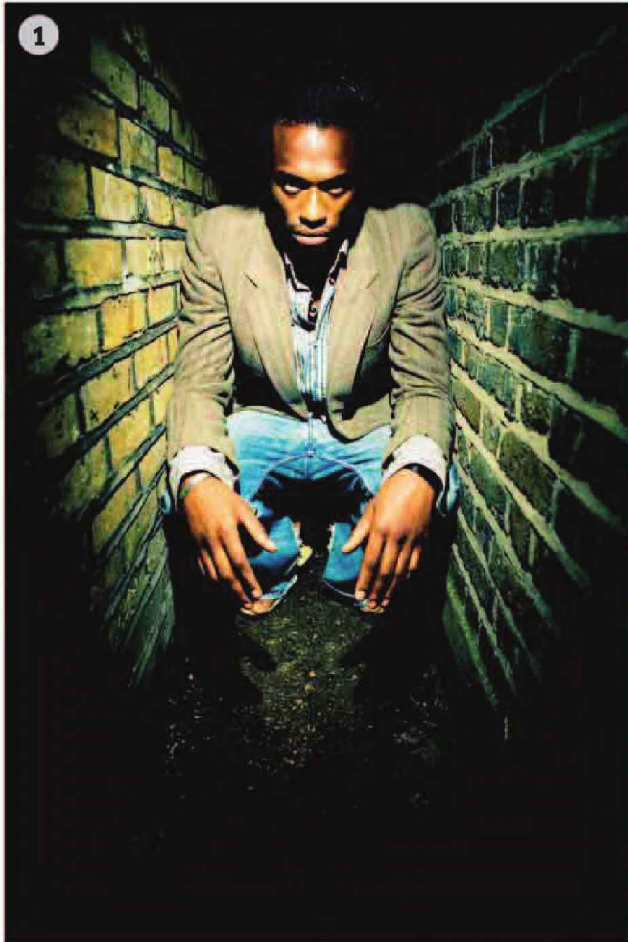
Let's begin...





## TEST YOUR KNOWLEDGE

# What does flash do?



Flash can be used as the main light in a scene, or used more subtly to fill in shadows in bright sunlight. It can be used to freeze the action, or to selectively illuminate part of a subject. See if you can identify how flash has been used in these examples.

**A Overexposed flash:** Produces an image that's very light.

**B Ring flash:** Used to create a shadowless illumination of a close-up subject, and can produce ring-shaped highlights in the eyes.

**C Off-camera flash:** Can be used to create a dramatic sidelight.

**D Softbox or umbrella:** These additional pieces of equipment can be used to simulate natural light from a window.

**E Direct flash:** A flash mounted on the hot shoe can create strong shadows in the background.

**F Freeze flash:** Can freeze the action of a fast-moving subject.

**G Bounce flash off a ceiling:** Used to give a soft overall light.

**H Spotlight flash:** Allows you to use the flash like a flashlight, illuminating part of your image.

ANSWERS

- E/5: Statue of a cello player
- F/3: Man running along a ridge
- G/8: Girl sitting in her living room
- H/1: Man crouching in alleyway

- A/7: Man with mustache
- B/2: Close-up of a woman's face
- C/6: Golden retriever puppy
- D/4: Cat sitting on the floor



NEED TO KNOW

- A flashgun can be used to give a variety of lighting effects, from natural-looking to highly stylized, depending on its position and how direct or diffuse the light from it is.
- The smaller and farther away the light source is from the subject, the harder the light it produces. Conversely, the larger the light source and the closer it is to the subject, the softer and more diffuse the light will be.

- Direct flash, used either on or off the camera, is hard like direct sunlight, while bounced or diffuse flash is soft like the light on a cloudy or overcast day.
- Photographing the same object over the course of a single day is a good way of observing how the angle of light impacts on a scene.



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



# UNDERSTAND THE THEORY

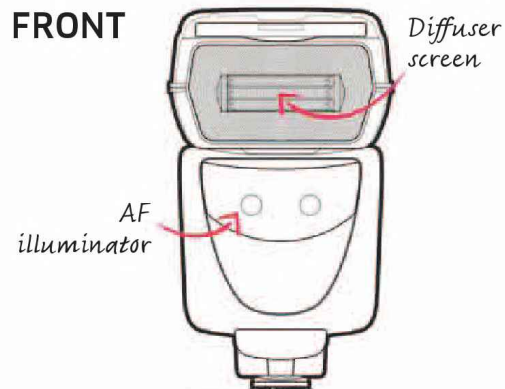
## Using a flashgun

By controlling the strength and direction of the light precisely, a flashgun gives you the ability to light your subject the way you want to. Understanding how to use your flashgun and how to balance it with the light in the scene will let you predict how the flash will affect your image.

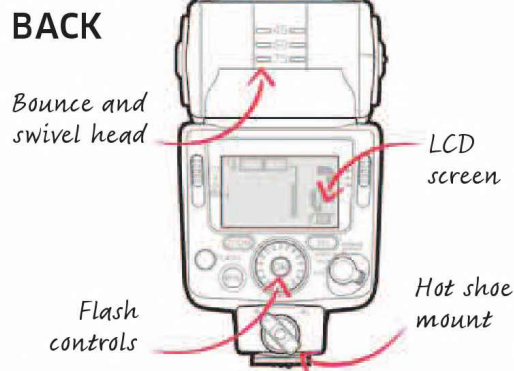
### FLASHGUN

**Most flashguns** are powered by normal batteries, although some use an external rechargeable power pack for faster recharging and more flashes per charge.

#### FRONT



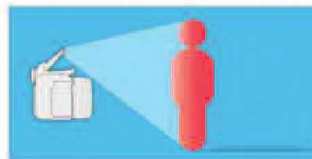
#### BACK



### POWER



Light decreases with distance.



Subject at short range, low GN.



Subject at long range, low GN.



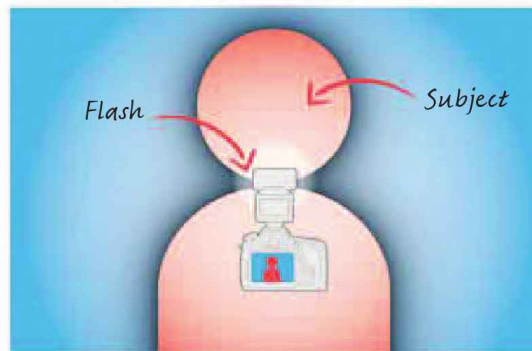
Subject at long range, high GN.

**Flashguns vary** in power: typically the smaller the flash, the less power it has. Flash output is measured in Guide Numbers (GN): the higher the number, the more powerful the flash.

The light from a flash will decrease the farther away the subject is. GN is therefore usually given in meters at an ISO setting of 100. If the distance between the flash and the subject is doubled, only one-quarter the amount of light will reach the subject.

To work out the aperture for any given distance, divide the GN by the distance. So a GN of 40 would give an aperture of f/8 at 5 meters.

### LIGHTING ANGLES



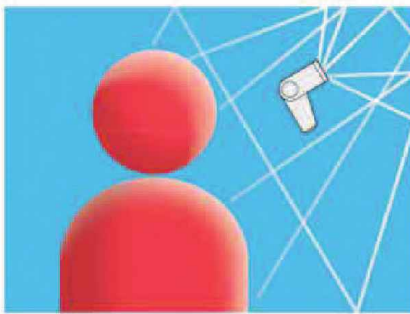
**On-camera flash** gives a direct light with hard edges and high contrast, flattens out the subject, and can cause red eye. It should only be used when there is no alternative, such as in a tight space or when the subject is very far away.

**Pro tip:** More advanced flashguns have zoom settings that you can use to match the focal length of your lens to the flash head. This allows you to maximize the power of your flashgun when shooting subjects that are farther away.

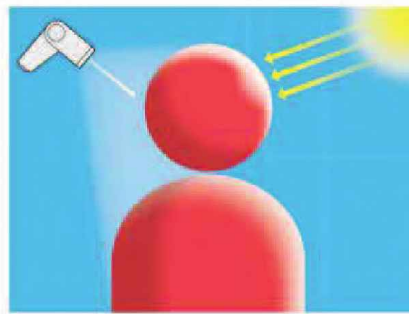
**Pro tip:** You can buy a wireless transmitter for the camera that will let you use your flash without its being physically connected to the camera. This is useful to avoid wires or to position the flash far from the camera.



## DISTRIBUTING LIGHT



**With bounce flash** the light is reflected off the ceiling or wall, creating a larger light source that is softer and more even.

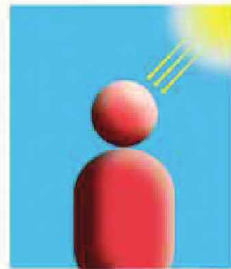


**Fill flash** is used to fill in hard shadows from the sun or backlit subjects so that the contrast between subject and background is evened out.

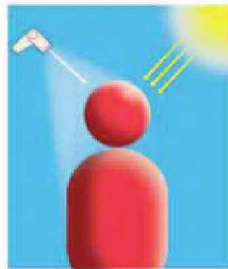


## RATIOS

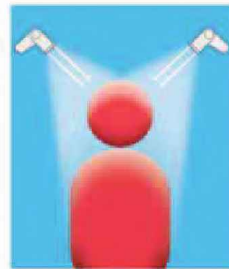
**The flash ratio** is the difference between the power of the flash and the main exposure for the subject. For example, a ratio of 1:2 would mean that the flash was one stop below the exposure for the scene.



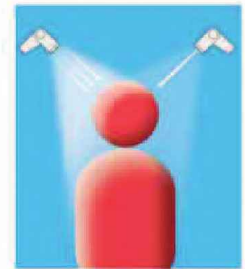
Ratio = 0  
Only ambient light



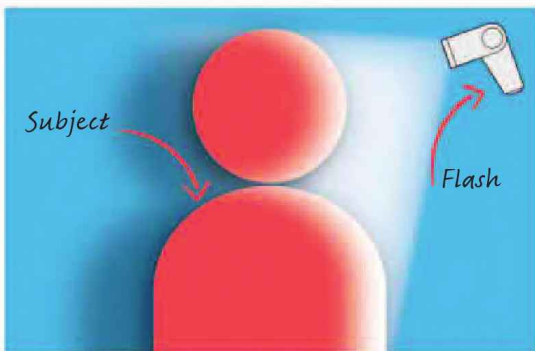
Ratio = 1:8-1:2  
Fill flash



Ratio = 1:1  
Balanced flash



Ratio = 2:1-8:1  
Strong flash

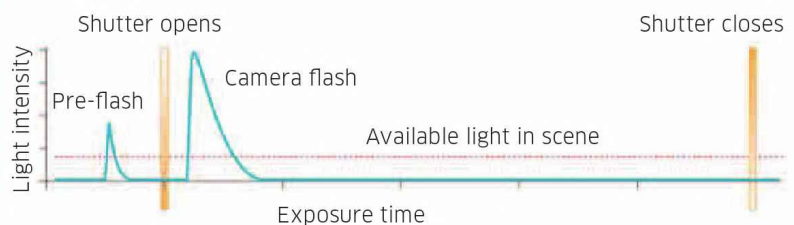


**Off-camera flash** can be directed at the subject from the side and at an angle. This provides directional light and gives the image greater depth. You can use a cable to get the flashgun off the camera.



## EXPOSURE

When you use a flash, you effectively have two light sources—the available light in the scene and the light from your flash. Most modern cameras and flashes work with Through The Lens (TTL) metering and this will adjust the power output of the flash. As you press the shutter button, the flash sends out a small pre-flash before the shutter opens. The camera uses this to take a meter reading and then adjusts the power of the flash, which fires while the shutter is open.





## LEARN THE SKILLS

# Using flash off-camera

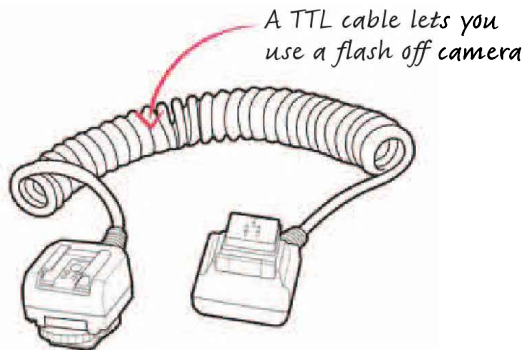


By getting your flash off the camera, you can use it to create much more interesting light, giving a more three-dimensional feel to your subject. Experiment with the flash in different positions in relation to the subject, and with both hard and soft light to create the effects you want.



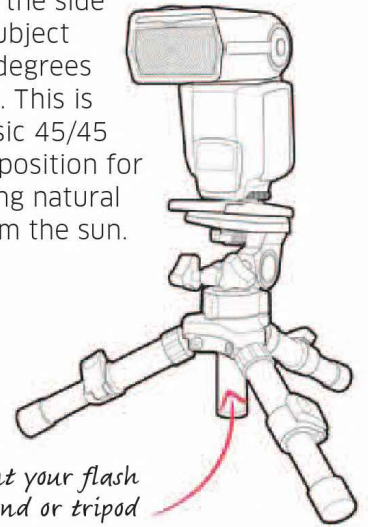
### 1 Set your exposure

Modern DSLRs use TTL (Through the Lens) metering in which the flash fires a pre-flash and sets the appropriate exposure based on the amount of light that returns through the lens. Attach the TTL cable and set the exposure.



### 2 Set up the flash

Attach the flash to a stand, and position it at a 45-degree angle to the side of the subject and 45 degrees above it. This is the classic 45/45 lighting position for simulating natural light from the sun.



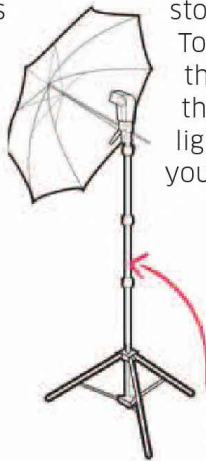
### 6 Create a beauty light

Place the flash close to the subject and close to the camera axis. Use a softbox or an umbrella to create a very soft, almost shadowless and very flattering light. Known as "beauty light," this is often used in fashion shoots.



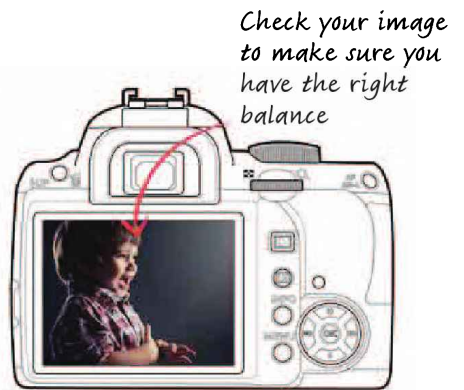
### 7 Add a second flash

Attach a second flash to the hot shoe of the TTL cable on your camera. Keep the first flash as the main light and set the power output for the second flash at one stop less than the first. To soften the light of the second flash, angle the head to bounce the light off a reflector onto your subject.



### 8 Review your images

Take a shot and review it. The second flash should fill in light to reduce contrast. If the balance isn't right, decrease or increase the output of the second flash in third-stop increments until you're happy.



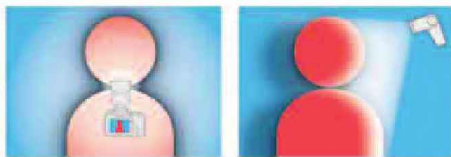
**Where to start:** Find an indoor location where you can set up a temporary studio. You will need a willing model (or an object for a still life), a stand to hold your flash, a TTL cable, a softbox (or umbrella), and a snoot for changing the light quality.

**What you will learn:** How to create a simple off-camera lighting setup for shooting portraits and still lifes; how to use a softbox, a snoot, and an umbrella to change the quality of the light; and how to use a second flash to reduce contrast and fill in shadows.



### 3 Experiment with flash positions

With the flash aimed directly at your subject, take a shot. Note how direct flash has produced a hard light with high contrast. Move the flash to a position 90 degrees to the side of your subject. From here, the shadows will be even more pronounced.



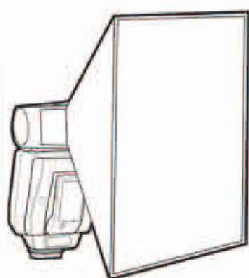
Flash directly in front.

Flash positioned at 90 degrees.



### 4 Soften the light

Attach a softbox (a device for diffusing light, see p.289) to your flash, or attach a photographic umbrella to your flash stand. The flash needs to be pointed inside the umbrella to diffuse the light. Take some shots. The light will now be softer with less contrast.

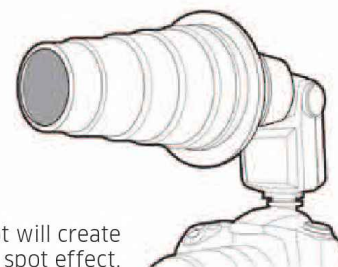


A softbox attached to the flash will produce a diffuse light.



### 5 Make a spotlight

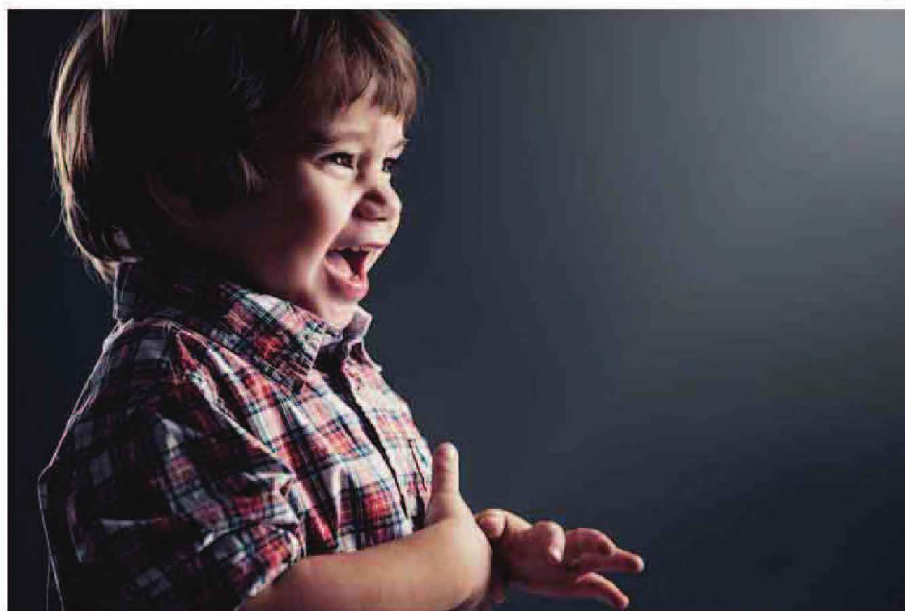
Attach a snoot (a tube for controlling the direction of flash light) onto your flash, and focus it on a part of your subject. The tube will make the flash operate like a flashlight, illuminating a small area of the subject for dramatic effect. You can make your own snoot from aluminum foil or cardboard.



A snoot will create a spot effect.

## WHAT HAVE YOU LEARNED?

- With just a few simple accessories you can create lighting setups for shooting portraits and still lifes.
- A 45/45 setup simulates the light from the afternoon sun.
- Diffusers, such as softboxes and umbrellas, can be used to soften the light.
- Flashes can be used with each other to reduce contrast, fill in shadows, and make light more flattering.



With diffused flashes placed on either side of the subject, the light is soft but with some areas of dark shadow.



## PRACTICE AND EXPERIMENT

# Using fill-flash

By learning how to balance the light from your flash with the available light, you will open up a range of creative effects. These assignments will also show you how to use flash to achieve a soft light, freeze the moment, and fill in shadows. Fill-flash is particularly useful for reducing the contrast on a backlit subject. It can also be used more creatively as the main light source to create a dramatic effect or to simulate window light. You can use Aperture Priority or Program modes with fill-flash, but for the most control, use the Manual setting, as described here.



**MEDIUM**

**1 HOUR**

**BASIC + flash**

**OUTDOORS**

**MODEL AND A SUNNY DAY**

**Shooting on a sunny day** can cause a lot of problems with contrast and exposure. If you expose for the sun, people's faces can be very dark, but if you expose for the shadows then the rest of the scene will be overexposed. The answer is to experiment with the ratio of flash to available light to subtly fill in shadows and reduce contrast.

- **Go** out in the morning or afternoon when the sun is at an angle. Place your subject with their back to the sun so that their face is in shadow.

- **Take** a meter reading for the scene and then set the flash power between 1/2 and 2 stops below the ambient light. The lower the power of the flash, the less pronounced the effect will be.



## USE FLASH AS THE MAIN LIGHT

**MEDIUM**

**1 HOUR**

**BASIC + flash**

**OUTDOORS**

**SUBJECT AND LOW-LIT SCENE**

**The flash can be adjusted** to be more powerful than the available light, thereby acting as the main light source. This technique can be used to darken the background, turning day into night and creating dramatic nighttime scenes.

- **Go** out around sunrise or sunset and frame your subject against the sky.

- **Remove** the flash from the camera, as this will give a better quality of light.

- **Take** an overall exposure reading.

- **Set** the camera exposure so that the background is 2 stops darker than the flash-exposed subject.



*The sky and background are underexposed, picking out the foreground subjects*

- **Take** a shot. Your subject should be brightly lit by the flash while the background remains dark.



**Pro tip:** Use flash exposure compensation to fix meter readings that have been thrown by very light or dark subjects. For light subjects, increase the flash output by around +1/2 to +1½ stops; for dark subjects, reduce it by round -1 to -2 stops.

**Pro tip:** Many flashes give out a rather cold light, especially when they are new. Soft plastic filters called gels can be placed over the flash head to change the light. A very pale orange one will warm the light up a bit.

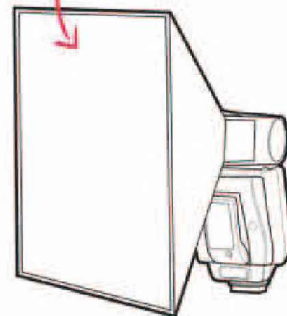


- **Adjust** the balance further, if necessary. Most modern flashguns let you reduce the power in 1/3 stop increments so you can be very precise.
- **Experiment** until you get a ratio between the flash and the daylight that you like. The aim is for the flash to “fill in” any shadows, so the lighting looks as clear and natural as possible.

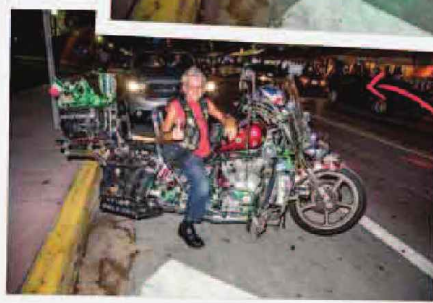
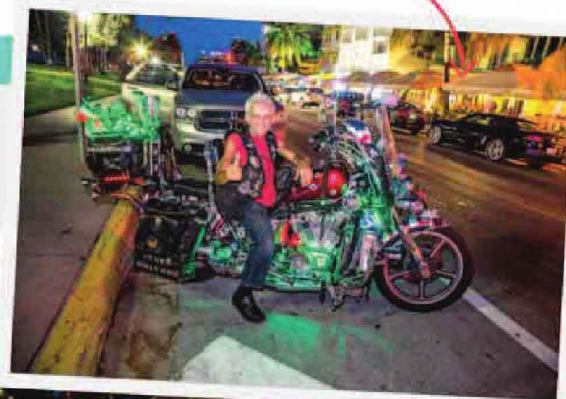
### **i** GEAR: DIFFUSERS AND SOFTBOXES

There are devices for softening the harsh light from a flash that can, if used skillfully, replicate natural light almost perfectly. A small plastic diffuser, which clips on to the front of the flash, softens the light by increasing the size of the source. Similarly, you can use a softbox, which will bounce the light around inside it to give an even more diffuse and soft light.

*This small softbox fits over the flash head*



*A slow shutter speed has brightened the background*



*A fast shutter speed has darkened the background*

### **i** USING FILL-FLASH IN THE DARK

- MEDIUM**
- 1 HOUR**
- BASIC + flash**
- INDOORS OR OUTDOORS**
- MODEL AND A NIGHTTIME SCENE**

**Fill-flash** can be used in a dimly lit interior or at night to balance the flash to the available light.

- **Take** an overall light reading of your scene.
- **Use** the flash to fill the foreground and illuminate your subject, while using a long exposure time to fill the background. For example, if your light reading for the available light is 1/15 sec at f/5.6, you would set the flash to f/5.6 and let it light the main subject.
- **Experiment** with different shutter speeds to get the exact amount of background detail you want. A slower shutter speed will make the background relatively bright, a faster one will make it darker.



## PRACTICE AND EXPERIMENT • CONTINUED

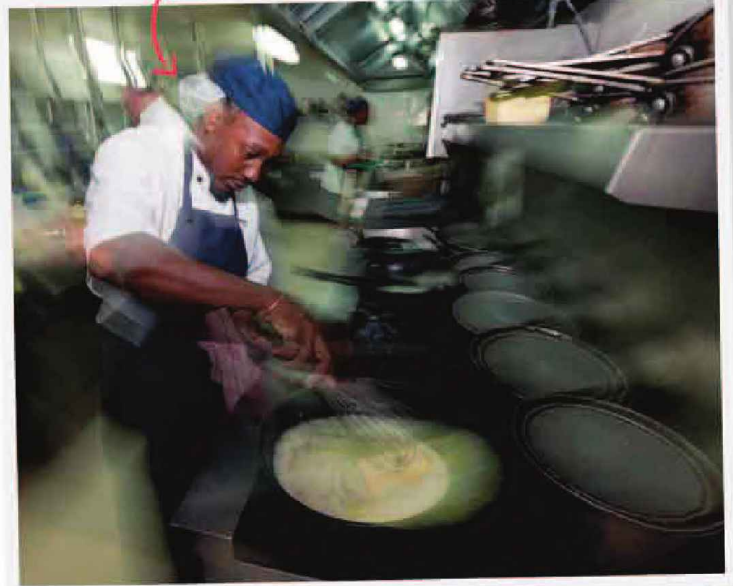
### FLASH BLUR

- MEDIUM**
- 3 HOURS**
- BASIC + flash**
- INDOORS OR OUTDOORS**
- MODEL, POINT LIGHT SOURCE**

**You can combine flash** with a slow shutter speed to create the illusion of movement in an image. A longer exposure time will give a “flash blur” effect, where the subject is frozen by the flash while the background appears blurry, making for dramatic and interesting pictures.

- **Set** your flash to f/8 as a starting point, and the shutter to 1/15 sec.
- **Get** your model to move in front of you, slowly at first, as you take a series of images.
- **Experiment** with different exposure times from 1 sec to 1/30 sec to get the effect you want. Adjust the aperture if necessary to get the right shutter speed. Once you feel confident, try getting your model to move more quickly and pan with them as they move.

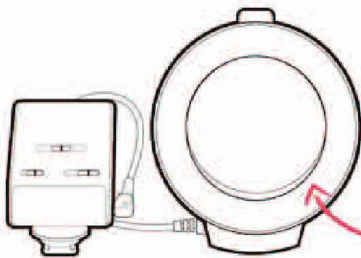
*The flash has been combined with a slow shutter speed to freeze the subject*



### GEAR: RING FLASH

A ring flash is a circular flash that fits around the lens. As it is located very close to the lens, it provides an even, flattering illumination with almost no shadows and is often used for portraits and fashion shoots. It typically has relatively low power, so it is best used near to the subject. As such, it is well suited to macro photography and close-ups, since it gives enough power to let you use a small aperture, giving a lot of depth of field. One small problem with ring flash is that it can

sometimes produce a telltale ring-shaped light in the subject's eyes.



*Ring flash fits around the lens*

### FRONT AND REAR CURTAIN

- MEDIUM**
- 2 HOURS**
- BASIC + flash**
- OUTDOORS**
- MOVING SUBJECT**

**Front Curtain Sync** mode fires the flash at the beginning of the exposure. This means that when a moving subject is illuminated by flash during a long exposure, the subject's motion blur is recorded in front of the subject. Rear Curtain Sync mode fires the flash at the end of the exposure, producing a motion blur behind the subject, which looks more natural. The curtain sync modes can be altered on your camera's flash settings menu.

- **Go** out at night and place your subject in front of some point light sources such as spotlights or streetlights. Experiment with different long exposures from 1/30 sec to 1 sec or more.
- **Balance** the aperture to the available light and match the flash to that. Take a few test shots.

EASY

INDOORS

1 HOUR

ROOM WITH PEOPLE

BASIC + flash

**Flash can be bounced off** interior ceilings or walls to give a soft, flattering light that fills the whole space.

- **Set** up your subject in the center of a small room with, ideally, white walls and ceiling.
- **Attach** the flash to your camera, and tilt it so it's facing away from the subject.
- **Set** the flash to f/8 and the shutter to 1/60sec as a starting point and take a series of shots bouncing the light off the ceiling and walls.
- **Make** a note of how you positioned the flash for each shot, so you can work out how the light changes as you move the flash around. If your flash has a zoom head, experiment with different settings.
- **Remember**, the higher the ceiling, the higher the power of the flash will need to be.
- **Note** that the flash will take on the color of the surface it bounces off. Beware of green walls.



*Bounced flash light is much softer than direct flash*



- **Try** the front and rear curtain settings. Ask your subject to move across the frame and see what happens with each mode. Shooting moving cars is also a good way to learn how this effect works.

Rear-curtain flash has blurred the lights behind the subject.

## WHAT HAVE YOU LEARNED?


- By controlling the ratio of light from the flash with the available light, you can creatively control contrast and shadows to get precisely the effect you want.
- The flash can be used to dramatically isolate the subject and make it stand out from the background.
- Bounce flash is very useful indoors to give a soft, directionless, overall light that will gently illuminate the whole scene.

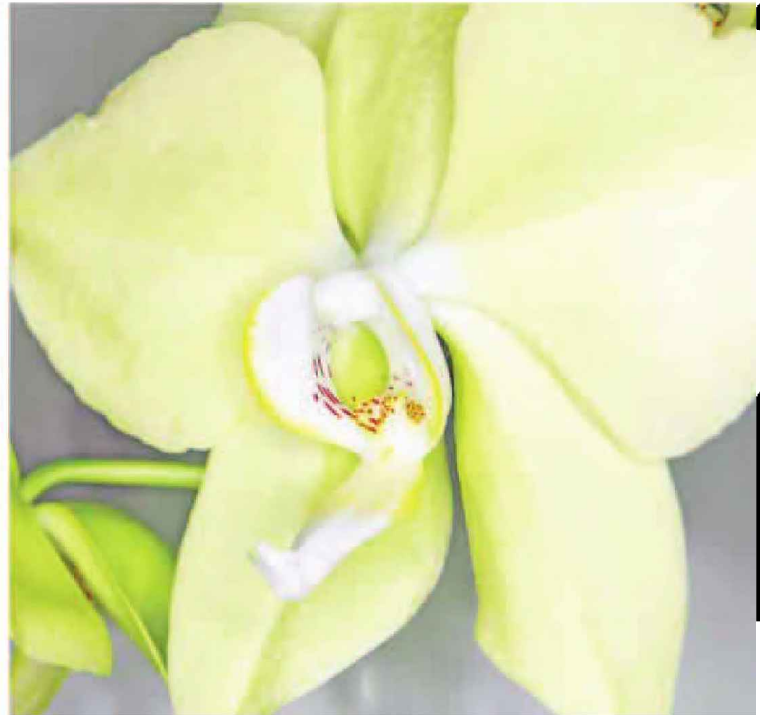
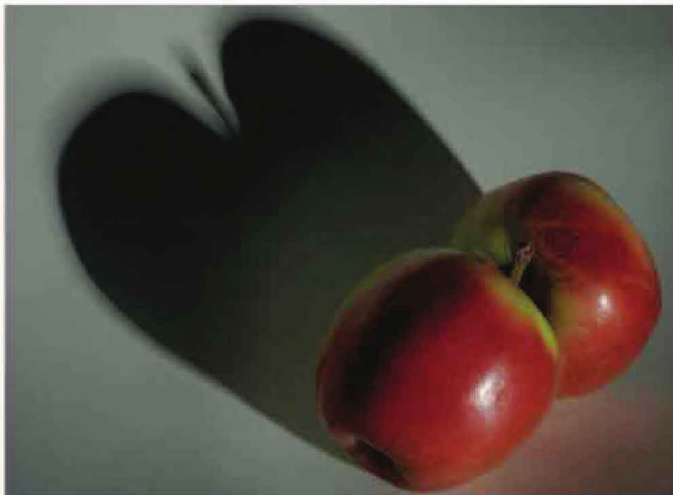



## ASSESS YOUR RESULTS

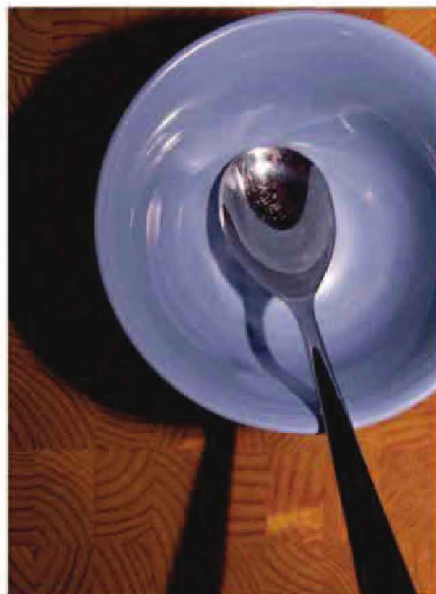
# Reviewing your shots


After using your flash creatively for a period, choose your best shots and assess the results. See where the flash worked well, and what might have gone wrong. Look at how hard or soft the light was, and how the shadows fell. Here are some pointers on how to assess your images and improve your results next time.

 **Are there dark shadows in a close-up image?** Using a ring flash has resulted in an almost shadow-free close-up image of a flower.




 **Is the light from the flash too hard?** If you want to soften the light coming from the flash, use a softbox or diffuser. Alternatively, you may want to use a hard shadow for creative results, as here.



 **Have you checked for possible reflections?** Subjects with shiny surfaces can reflect the flash light back at the camera, potentially spoiling the composition—or, as here, this can be used to emphasize the polished texture of the subject.



 **Is the light too harsh?** The light and shadows in this image have been softened by using a softbox placed over the head of the flash and by positioning the flash to one side of the subject.

“Wherever there is **light**,  
one can **photograph**.”

ALFRED STIEGLITZ

17  
WEEK



⌚ **Should you use  
Rear Curtain Sync?**

In this image, Rear Curtain Sync has been used to simulate forward movement, thereby emphasizing the real movement of the subject.

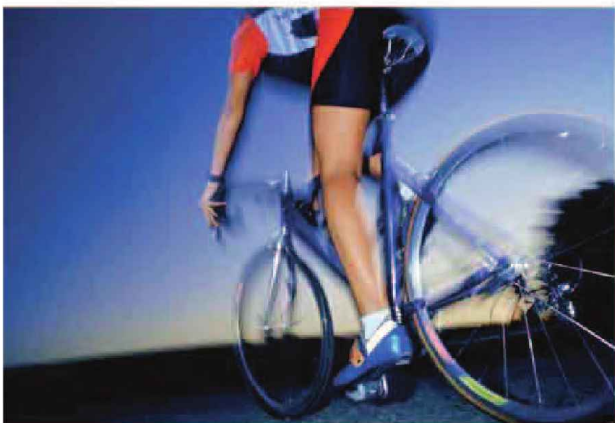


⌚ **Have you gotten the  
ratio of flash and  
ambient light right?**

Flash has been used so carefully and subtly in this sunny scene that it is barely noticeable and looks completely natural.

⌚ **Is your subject  
overexposed  
compared to the  
background?**

To avoid this, reduce the flash in relation to the main exposure so that the ratio of flash to available light is more balanced.



⌚ **Did you have the right shutter speed?**  
In this panned shot, the shutter speed was just right—too slow and it would have been blurred; too fast and it would not have given the appearance of motion.





# ENHANCE YOUR IMAGES

## Reducing red eye



Red eye is caused when light from a flash is reflected by the retina at the rear of the subject's eye back into the lens. The light is red because it reflects the color of the blood vessels in the eye. This is more of a problem with point-and-shoot cameras than



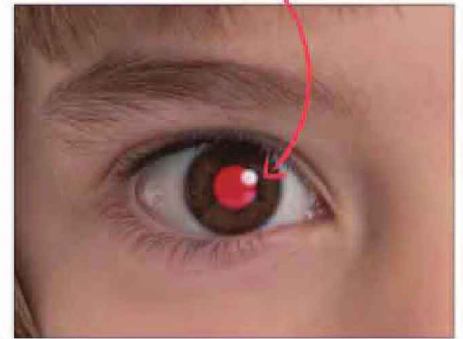
cameras with a movable hot shoe mounted flash, since the flash is mounted close to the camera lens and the light is reflected straight back. Most post-production software programs have a simple red-eye reduction feature. This is how to remove red eye in Photoshop.



### 1 Find the eyes

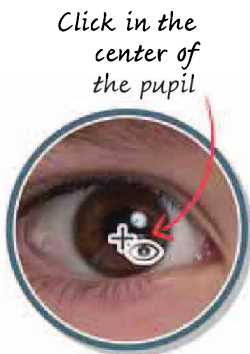
Open the file you want to alter and zoom in on the eyes so you can work on them in detail.

*The pupil is bright red*



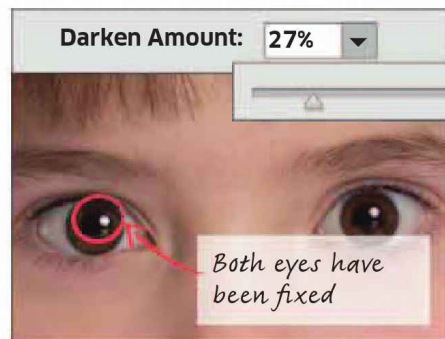
### 5 Click on an eye

Place the cursor over the eye you'd like to reduce red eye for and click once. This should automatically fix the problem.



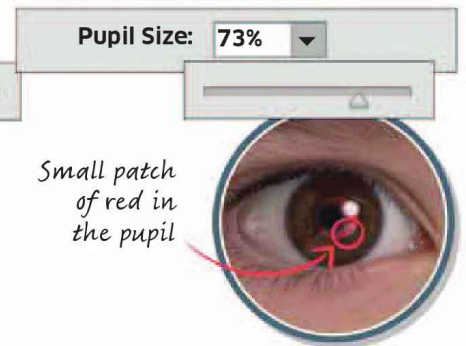
### 6 Click on the other eye

The tool only fixes one eye at a time, so you will need to click on the other eye too.



### 7 Adjust until you are satisfied

If the Pupil Size isn't big enough, a small amount of red may remain. If this happens, or you're not happy with the results, adjust the settings and try again until you are.



**Pro tip:** If you don't like the effect created by the Red Eye Tool, or don't think it's working properly, you can also remove red eye manually by using the Color Replacement tool.

**Pro tip:** The higher the power on the flash, the longer it will take to recycle after each exposure. If you plan on shooting a lot of images in quick succession, think about buying an external battery pack that will allow you to shoot for longer.



## 2 Select the Red Eye Tool

Go to Tools and select the Red Eye Tool under the Healing Brush Tool menu. It's the last tool on the list.

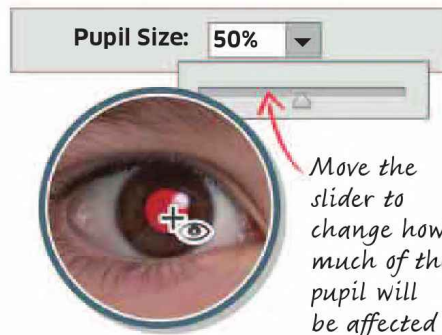


Select the Red Eye Tool from the Tools palette



## 3 Adjust the pupil size

Use the Pupil Size slider on the Options bar to set how much of the eye the tool should regard as the pupil. A low setting will not cover the pupil; a high one will cover too much. Start at 50 percent and see which works best.



Move the slider to change how much of the pupil will be affected



## 4 Adjust the darkness

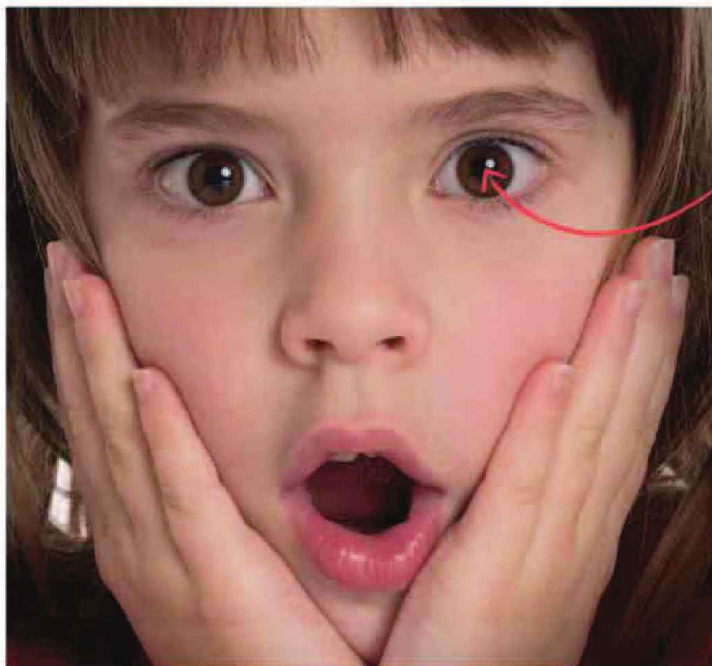
Use the Darken Amount slider to darken the pupil. A low figure will only partially remove the red eye, while a higher one will make the pupil very dark and will look rather obvious.



Start with a setting of 50 percent and experiment to get the most natural effect

## i RED-EYE FIXES

Some point-and-shoot cameras have a red-eye reduction setting whereby a brief burst (or bursts) of flash is fired before the main flash, causing the subject's pupils to contract, lessening the red-eye effect. You can avoid the problem of red eye completely by taking the flash off the camera, so that the path of the light is not reflected directly back into the lens.



The pupils are now dark and natural-looking