

GETTING TO KNOW
**YOUR
CAMERA**





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EXTENDING YOUR VISION



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EXTENDING YOUR VISION

(THAT IS, UNDERSTANDING THE TECHNICAL AS A MEANS TO YOUR EXPRESSION.)



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DSLR

(D FOR DIGITAL)

(SINGLE LENS REFLEX)

MIRROR(S) INSIDE.

PROJECTS IMAGE TO EYE (VIEWFINDER).

"FLEXES" WHEN TAKING A PICTURE.

EXTENDING YOUR VISION

(THAT IS, UNDERSTANDING THE TECHNICAL AS A MEANS TO YOUR EXPRESSION.)



DSLR

(D FOR DIGITAL)

(SINGLE LENS REFLEX)

- + MAXIMUM CONTROL / QUALITY.
- + ROOM TO GROW.
- MORE TO LEARN.
- LARGE, HEAVY, NOTICEABLE.

EXTENDING YOUR VISION

(THAT IS, UNDERSTANDING THE TECHNICAL AS A MEANS TO YOUR EXPRESSION.)

(POINT AND SHOOT)

- + NO MOVING MIRROR = QUIET, UNOBTRUSIVE.
- SOMETIMES RESULTS IN A "LAG".
- + LIGHT, COMPACT, (NEVER MISS A SHOT).
- FEWER FINE CONTROLS (APERTURE)



EXTENDING YOUR VISION

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CAMERA PARTS

COMPACT CAMERA

Although there's a vast range of compact digital cameras available, these are the most basic components present in the majority of makes and models.

1 Zoom lens

This type of lens can vary its magnification and change the field of view captured in a shot.

2 Electronic flash

This may flash automatically or pop up on demand in low light. It provides a brief burst of light for exposing the image.

3 Mode dial

Cameras use either a dial or buttons to select different modes; for example, the auto-exposure mode.

4 Self-timer lamp

When using the self-timer mode, this light flashes to indicate when the shutter is about to open.

5 LCD screen

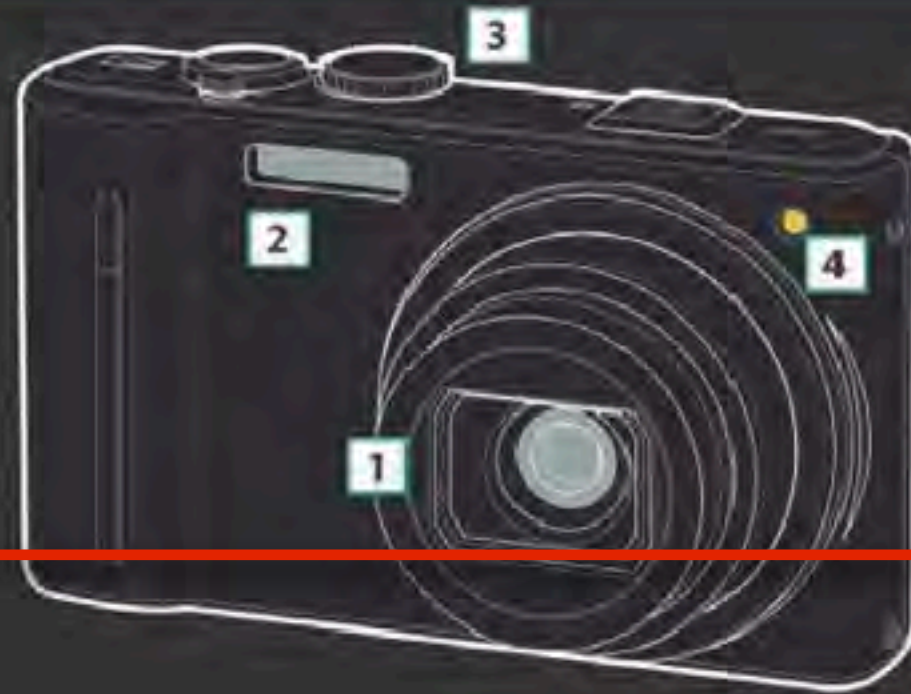
This is used both to frame a picture when you're about to shoot, and to select and set menu options.

6 Capture/Review mode button

This switches the camera between being set up for taking photos and set up for reviewing, printing, or slide shows.

7 Navigation buttons

These buttons enable you to navigate through images and menus.



IMPORTANT ON BOTH CAMERA TYPES.
CONTROLS MULTIPLE CAMERA SETTINGS.
MANY TYPES OF SHOOTING SITUATIONS.

EXAMPLE: PORTRAIT MODE,
CHANGES APERTURE FOR SOFT FOCUS.
MUTED COLORS ARE RECORDED.
FLASH TURNED OFF.

+ LARGER LENS GIVES MORE CONTROL HERE.
ALLOWS THAT "BOKEH" BACKGROUND BLUR.

DSLR

CAMERA PARTS

dSLR CAMERA

Here are the most basic components present in all entry-level dSLRs. More advanced dSLRs may have additional dials and control buttons (see pp.324-25).

1 Interchangeable lens
Zoom or fixed focal-length lenses can be swapped, giving high versatility.

2 Aperture
The aperture is the opening in the lens—controlled by an iris diaphragm—through which light passes.

3 Mode dial
This dial enables you to switch between shooting modes, such as aperture priority and shutter priority.

4 Pop-up flash
Many models feature a small flash that pops up on demand, but all feature a hot shoe to take an accessory flash unit.

5 Shutter button
This button triggers the shutter, and also initiates focus when the lens has been set to auto-focus mode.

6 Sensor
Located inside the camera, behind the shutter, the sensor is exposed when the shutter is triggered.

7 Shutter
A shutter is a mechanical blind that opens to expose the sensor, then closes after the set exposure time.

8 Viewfinder
In most dSLRs you'll need to use the viewfinder to frame your shots. You use it to see the view through the lens.

9 LCD screen
The display is used for reviewing images and video, setting menu options, and, in some cameras, composing shots.

10 Navigation buttons
This set of buttons enables you to navigate through images and menus, or adjust feature settings.



+ USUALLY LARGER ON DSLRS.

SENSOR SIZE, NOT MEGAPIXELS, IS A GOOD
GAUGE OF IMAGE QUALITY.

THAT, AND THE QUALITY OF YOUR LENS.

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+ IMPORTANT ON BOTH CAMERA TYPES.

HALF PRESS TO FOCUS / MEASURE EXPOSURE.

HOLD TO LOCK FOCUS. (CAN THEN MOVE / RECOMPOSE.)

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IMPORTANT

SETTINGS

(QUALITY)

- + JPEG (SMALL, MEDIUM, LARGE).
CHOOSE BASED ON OUTPUT INTENT.
- + RAW (UNPROCESSED IMAGE)
NEED SOFTWARE TO EDIT / PROCESS.

DATE AND TIME

1 Set the date and time for your location, particularly when traveling abroad. Synchronize the time with your partner's camera so that pictures will be listed in the correct order when you download them.



IMAGE QUALITY

2 It is neither necessary nor advisable always to record images at the highest quality and resolution. Set a small image size and high compression (lower quality) when making informal snaps—pictures of friends intended for social networking sites, for example. Set high quality and resolution when traveling, or when engaged in serious photography. With today's high-resolution cameras, a setting equivalent to around six megapixels is likely to be suitable for a wide range of uses, while also making economical use of memory cards and hard-disk drive space.

IMAGE SHAPE

3 Some cameras offer a choice of format proportions: from 4:3 (which fits old-style monitors and many print formats) to 16:9 (which fits HD screens but not some print sizes); 3:2 (widely used by dSLRs) lies in-between.



AUTO-FOCUS MODE

7 You can set your camera to focus on static subjects: often called "single shot", this mode allows exposure only when sharp focus is achieved. For moving subjects, set Follow-focus or Servo mode, which continually tracks changes in the scene and allows exposure to be made at any time. All cameras offer single-shot mode, most offer both modes, and some models switch between modes automatically, depending on the behavior of the subject.

SERIES OR SINGLE SHOT

8 All cameras take one shot when you press the shutter button: this is a practical mode for the majority of situations. For fast-changing situations, it's useful to set the camera so that it makes a series of exposures for as long as you hold the shutter button down. High-grade cameras can make five exposures per second or faster. The total number of possible exposures varies: simpler cameras can make only two or three exposures, then must stop to load the pictures.

FLASH MODE

9 "Auto" mode flashes when the light is so low that the long exposures needed may blur images. Set to "Off" to avoid disturbing others, or for distant evening views—for which you'll need a tripod and a long exposure.



IMPORTANT

SETTINGS

(FOCUS)

- + SINGLE FOR STATIC SUBJECTS.
- + SERVO / FOLLOW > MOVEMENT.
- + DON'T FORGET MANUAL FOCUS!

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IMPORTANT

SETTINGS

(FOCUS)

+ SOME CAMERAS ALLOW YOU TO CHOOSE YOUR AUTO FOCUS AREA:

+ DYNAMIC, SINGLE AREA, OR CLOSEST SUBJECT.

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IMPORTANT

SETTINGS

(FLASH)

+ MODES

RED EYE REDUCTION.

SLOW-SYNC (NIGHT PORTRAIT).

AUTO.

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IMPORTANT

SETTINGS

(FLASH)

+ WHEN NOT TO USE:

NIGHT, DISTANT SUBJECT.

DAYLIGHT, USUALLY.

IN FRONT OF WINDOWS!

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IMPORTANT

SETTINGS

(FLASH)

+ HELPFUL SITUATIONS TO USE
PORTRAIT IN SUN, FILLS SHADOWS.
TO FREEZE MOTION.

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IMPORTANT

SETTINGS

(WHITE BALANCE)

+ A CAMERA CALIBRATION

HOW YOUR CAMERA "SEES" WHITE
DETERMINES HOW ALL OTHER
COLORS LOOK.

WHITE BALANCE

4 Cameras are set to compensate for variations in the color of illuminating light (auto-white balance). Improve results by setting white balance for conditions: Tungsten for domestic lights, or Cloudy on overcast days.



COLOR QUALITY

5 Your camera may offer a choice of color qualities, from black and white through soft pastels to bright colors. Use softer colors for portraits or weddings, and strong colors for graphics or landscapes on dull days.



AUTO-EXPOSURE MODE

6 For the majority of circumstances a camera's fully automatic (or Program) mode, which chooses both exposure time and aperture, delivers good results. Some cameras offer an "Auto ISO" or "Intelligent Auto" mode which also sets the sensitivity (see pp.102-03). When you want to freeze fast action, Shutter Priority gives more reliable results. And when you want specific apertures—full aperture for portraits, or small apertures for still life or landscapes, for example—Aperture Priority is the preferred setting. For experimenting with exposure, set Manual mode.

SCENE MODE

10 The range and multiplicity of different settings is usually very confusing. Scene mode (see pp.24-25) reduces the need to scroll through menus by collecting together all the settings appropriate for different circumstances. For example, a Portrait mode will set a large aperture, soft colors, and no flash, while a Night Portrait mode turns on the flash but also sets a relatively long exposure time in order to capture ambient light.

CONNECTING

11 If your camera can communicate with Bluetooth devices, 3G, PictBridge printers, or other cell phone or internet services, you will need to activate the service and identify your camera to your existing devices. Follow the on-screen instructions: if you need to enter a code number into the target device, ensure the code is within easy reach.

SPECIAL SETTINGS

12 If your camera offers special features, set these up and take advantage of them. For example, if it's enabled for GPS (Global Positioning System) you need to enter the starting coordinates at the outset. Once the camera knows where it is, it can tag your photos with their exact location. If you want to send images to a favorite social networking site, you will need to give the camera your account details, including your password.

IMPORTANT

SETTINGS

(WHITE BALANCE)

+ TEMPERATURES OF LIGHT

WARM & COOL

YELLOW, BLUE, GREEN, MAGENTA

+ WB TYPES

DAYLIGHT, TUNGSTEN,
FLUORESCENT, SHADE, CLOUDY,
FLASH, CUSTOM.

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IMPORTANT

SETTINGS

(WHITE BALANCE)

- + WHEN IN DOUBT, USE AUTO.
- + EXPERIMENT, TRY “WRONG” SETTINGS.
- + GREY CARD = CUSTOM WB

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IMPORTANT

SETTINGS

(OPTIMIZE IMAGE)
(PICTURE STYLE)

- + PORTRAIT
- + SATURATED
- + NEUTRAL
- + MONOCHROME
- + ETC...

(LIKE IN CAMERA EDITS).

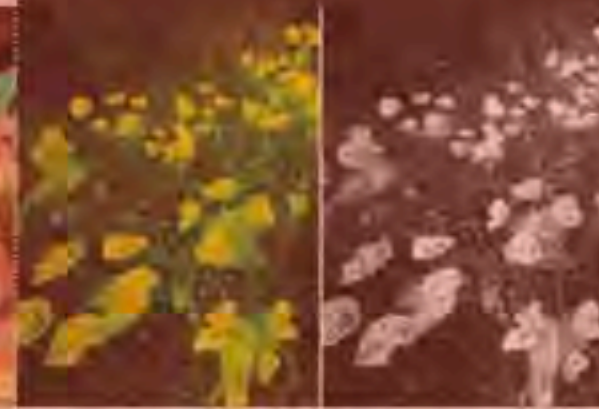
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IMPORTANT

SETTINGS

(PRIORITY MODE)

+ APERTURE (A OR Av)

LOW APERTURES BLUR BACKGROUND

+ f/3.5 TO f/5.6

USUALLY NEED SUBJECT CLOSE.

(PORTRAITS, MACRO)

HIGH APERTURES = DEPTH OF FIELD

FOCUS STRETCHES INTO SPACE

+ f/8- f/22

(LANDSCAPE, ARCHITECTURE)

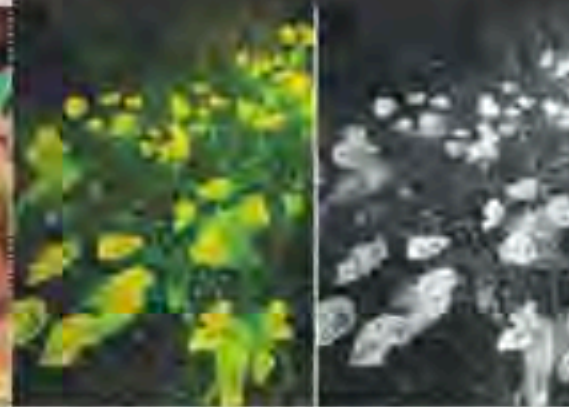
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SCENE MODE

10 The range and multiplicity of different settings is usually very confusing. Scene mode (see pp.24-25) reduces the need to scroll through menus by collecting together all the settings appropriate for different circumstances. For example, a Portrait mode will set a large aperture, soft colors, and no flash, while a Night Portrait mode turns on the flash but also sets a relatively long exposure time in order to capture ambient light.

CONNECTING

11 If your camera can communicate with Bluetooth devices, 3G, PictBridge printers, or other cell phone or internet services, you will need to activate the service and identify your camera to your existing devices. Follow the on-screen instructions: if you need to enter a code number into the target device, ensure the code is within easy reach.

SPECIAL SETTINGS

12 If your camera offers special features, set these up and take advantage of them. For example, if it's enabled for GPS (Global Positioning System) you need to enter the starting coordinates at the outset. Once the camera knows where it is, it can tag your photos with their exact location. If you want to send images to a favorite social networking site, you will need to give the camera your account details, including your password.

IMPORTANT

SETTINGS

(PRIORITY MODE)

+ SHUTTER (S OR Tv)

FAST SHUTTER FREEZES MOTION

+ 1/125 to 1/1000

SLOW SHUTTER FOR CREATIVE EFFECT

+ 1/60 to multiple seconds (1")

+ 1/30, 1/15, 1/4 and longer,

CAMERA NEEDS STABILIZATION or

IMAGE WILL BE "SHAKY"

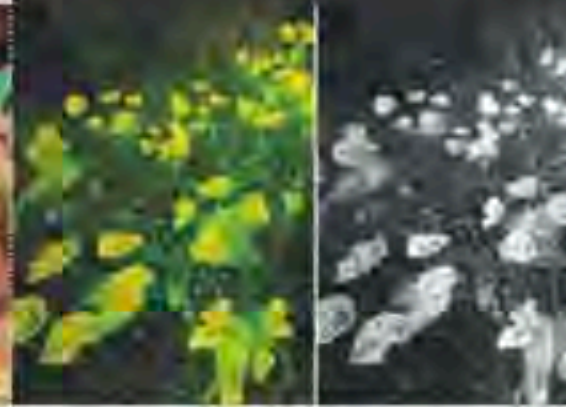
WHITE BALANCE

4 Cameras are set to compensate for variations in the color of illuminating light (auto-white balance). Improve results by setting white balance for conditions: Tungsten for domestic lights, or Cloudy on overcast days.



COLOR QUALITY

5 Your camera may offer a choice of color qualities, from black and white through soft pastels to bright colors. Use softer colors for portraits or weddings, and strong colors for graphics or landscapes on dull days.



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IMPORTANT

SETTINGS

(A SMART AUTO)

+ A PICTOGRAM SHOWS MODE

+ GREAT FOR WORKING QUICKLY

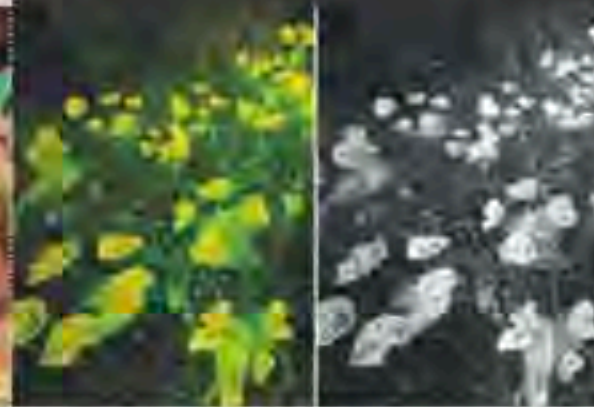
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SCENE

MODES

(PORTRAIT)

+ SATURATION

+ CLOSE UP

+ LOW APERTURE

(SOFT BACKGROUND)

PORTRAIT



Warm tones and increased saturation make skin tones appear healthy. The lens may be zoomed out to at least 75mm and aperture set to maximum, with the flash turned off and the shutter set to a short exposure time.

LANDSCAPE



In this mode, saturation is greater than normal, and sharpness may also be increased. Wide-angle may be set, along with low ISO, maximum resolution, and small apertures. Any available image processing, such as extending the dynamic range, will be applied.

BEACH OR SNOW



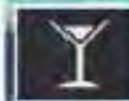
Generous exposure combined with low ISO captures bright beach or snow, while allowing for high brightness; a small aperture extends the depth of field. Contrast may be reduced to compensate for hard light.

SUNSET



The primary aim of this mode is to capture the deep hues of the sun and sky. The saturation is raised, the exposure may be reduced, the ISO is set to a medium speed, and resolution is set at maximum.

PARTY



One of the most useful of all the scene modes, this sets the camera to balance flash with low ambient light. It allows relatively long exposures, helped by high ISO. Large aperture settings avoid black backgrounds.

FIREWORKS



Setting medium-to-high ISO with a fixed camera exposure combination—typically 1/4sec at f/4—and with focus set at infinity, helps capture the majority of fireworks displays (see pp.72–73).

SCENE

MODES

(LANDSCAPE)

- + SATURATION
 - + WIDE ANGLE
 - + HIGH APERTURE
- (DEEP FOCUS)

PORTRAIT



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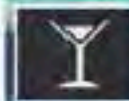
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SCENE

MODES

(MACRO)

- + FLASH FOR DETAIL
- + CLOSE FOCUS
- + BLUR BACKGROUND

DOCUMENTS



When photographing documents or artwork you'll want crisp, sharp images: this mode will sharpen the picture strongly, raise contrast, and record at the highest possible resolution, with neutral colors.

CANDLELIGHT



Here the camera sets maximum ISO and turns the flash off. Aperture is also set to maximum and white balance is allowed to be warm rather than fully neutral. Close-up focusing range may be set to maximize focusing speed.

CLOSE-UPS



For shots of flowers and other small objects, the lens will be set to its Macro mode, with a small aperture for maximum depth of field. The flash may be activated to ensure sharp results, colors may be boosted, and sharpening applied.

SPORTS



Here exposure times are minimized by increasing ISO to high levels and setting large apertures, together with the longest focal length (on point-and-shoot cameras) and rapid firing rate. This setting is also good for photographing children and pets.

NIGHT SCENERY



This setting turns off the flash, as it has no effect on exposure of distant scenery. High ISO, wide aperture, and maximum resolution will be set, and perhaps noise reduction for long exposures. When taking shots at night, support the camera on a wall or a tripod.

FOLIAGE



Foliage mode boosts a scene's color saturation, and aims to achieve a warm white balance that in turn produces rich, autumnal colors using medium ISO, high resolution, and small apertures.

SCENE

MODES

(SPORTS)

- + MAXIMIZE AVAILABLE LIGHT
- + HIGH ISO (LIGHT AMPLIFICATION)
- + FAST SHUTTER
- + WIDE APERTURE

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SCENE

MODES

(NIGHT LANDSCAPE)

- + NO FLASH
- + HIGH ISO (LIGHT AMPLIFICATION)
- + SLOW SHUTTER
- + TRIPOD NEEDED

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SCENE

MODES

(NIGHT PORTRAIT)

- + WITH FLASH
- + SLOW SHUTTER FOR AMBIENT LIGHT
- + TRIPOD NEEDED

DOCUMENTS



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SHUTTER SPEED

SLOW

(TRIPOD NEEDED)

+ TRY SHUTTER PRIORITY or
A SCENE MODE

+1/4s to 1/8s
OR TRY MORE

BLURRED VISION

The exposure time that produces the best blur effect depends on the speed of movement, your distance from the subject, the lighting, and the type of effect you intend to create. Start by setting 1/8sec and evaluate the results: here, exposures of 1/8sec and 1/4sec catch different degrees of blur with different speeds of movement.



SHUTTER SPEEDS

SLOW and FAST

+ IN SHUTTER PRIORITY MODE

(S or Tv on camera mode dial)

YOU CHOOSE (PRIORITIZE) THE SHUTTER
SPEED AND THE CAMERA MAKES ALL OTHER
EXPOSURE DECISIONS



APERTURE AND FOCUS

(DEPTH OF FIELD)

+ LARGER f/STOP

LESS LIGHT

MAY NEED TRIPOD

+ SMALLER f/STOP

MORE LIGHT

A "FAST" LENS (f/2)

CLOSE FOCUS



f/1.4



f/5.6



f/22

The most powerful contrasts between blur and sharpness result from focusing on a nearby object. With a 50mm lens, even at f/5.6, the background is still very weakly defined.

MID-RANGE FOCUS



f/1.4



f/5.6



f/22

With focus on the middle range, near objects are blurred, though with outlines visible, but the background is almost as sharp as the middle ground even at f/1.4.

DISTANT FOCUS



f/1.4



f/5.6



f/22

With focus set to far away, all medium-to-distant objects appear sharp even at full aperture. With smaller apertures, the only easily visible change is in the closest objects.

APERTURE AND FOCUS

(DEPTH OF FIELD)

+ KEEP IN MIND (CLOSE FOCUS, LOW f/#)

CONTRASTING BLUR/SHARPNESS

CLOSE FOCUS



f/1.4



f/5.6



f/22

MID-RANGE FOCUS



f/1.4



f/5.6



f/22

DISTANT FOCUS



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f/5.6



f/22

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APERTURES

WIDE and SMALL

+ IN APERTURE PRIORITY MODE

(A or Av on camera mode dial)

YOU CHOOSE (PRIORITIZE) THE APERTURE
AND THE CAMERA MAKES ALL OTHER
EXPOSURE DECISIONS



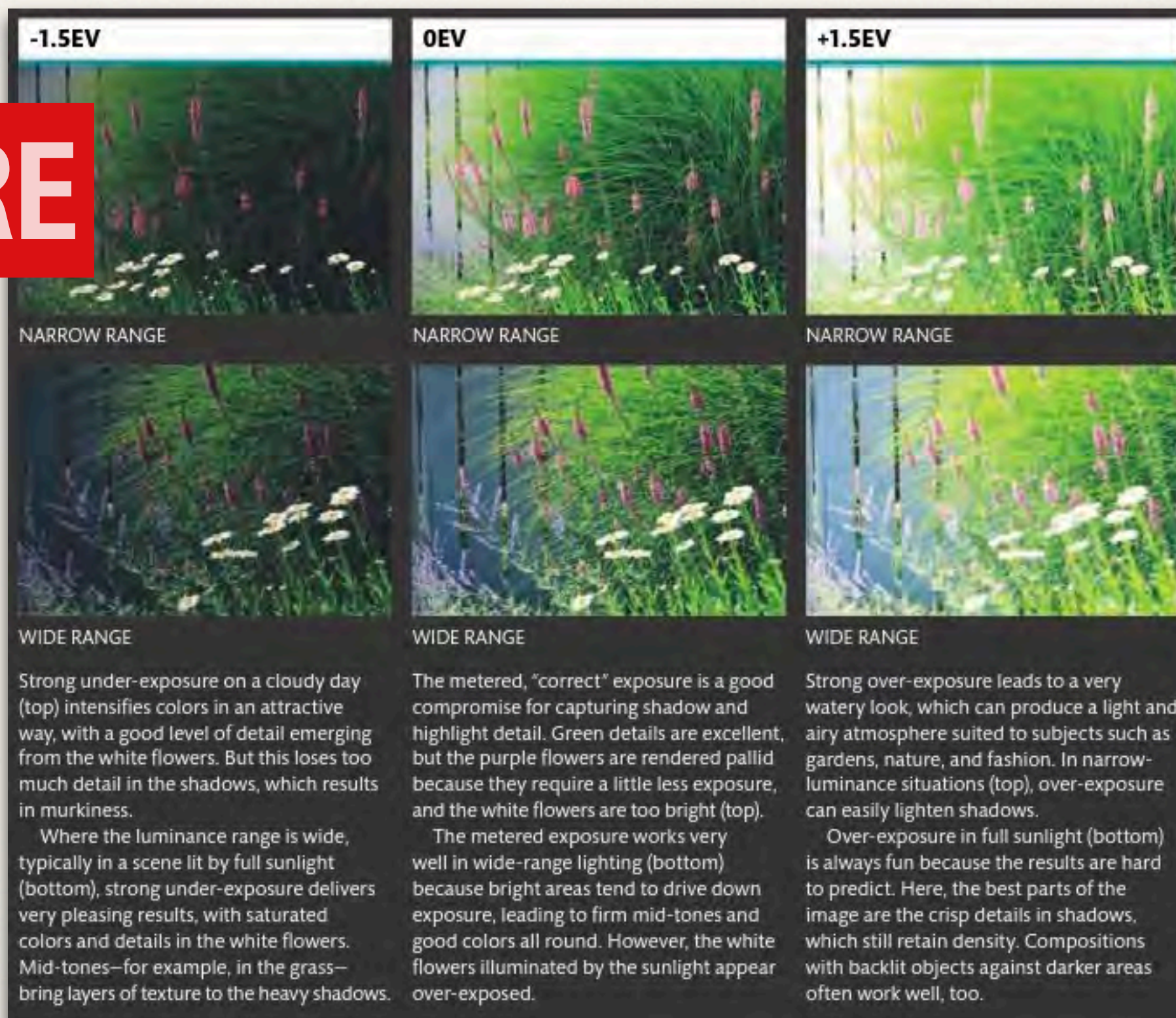
CREATIVE

EXPOSURE

+ A SLIDING SCALE

SOMETIMES BEST MANIPULATED

(Sometimes CAN'T IN SCENE MODES)



CREATIVE

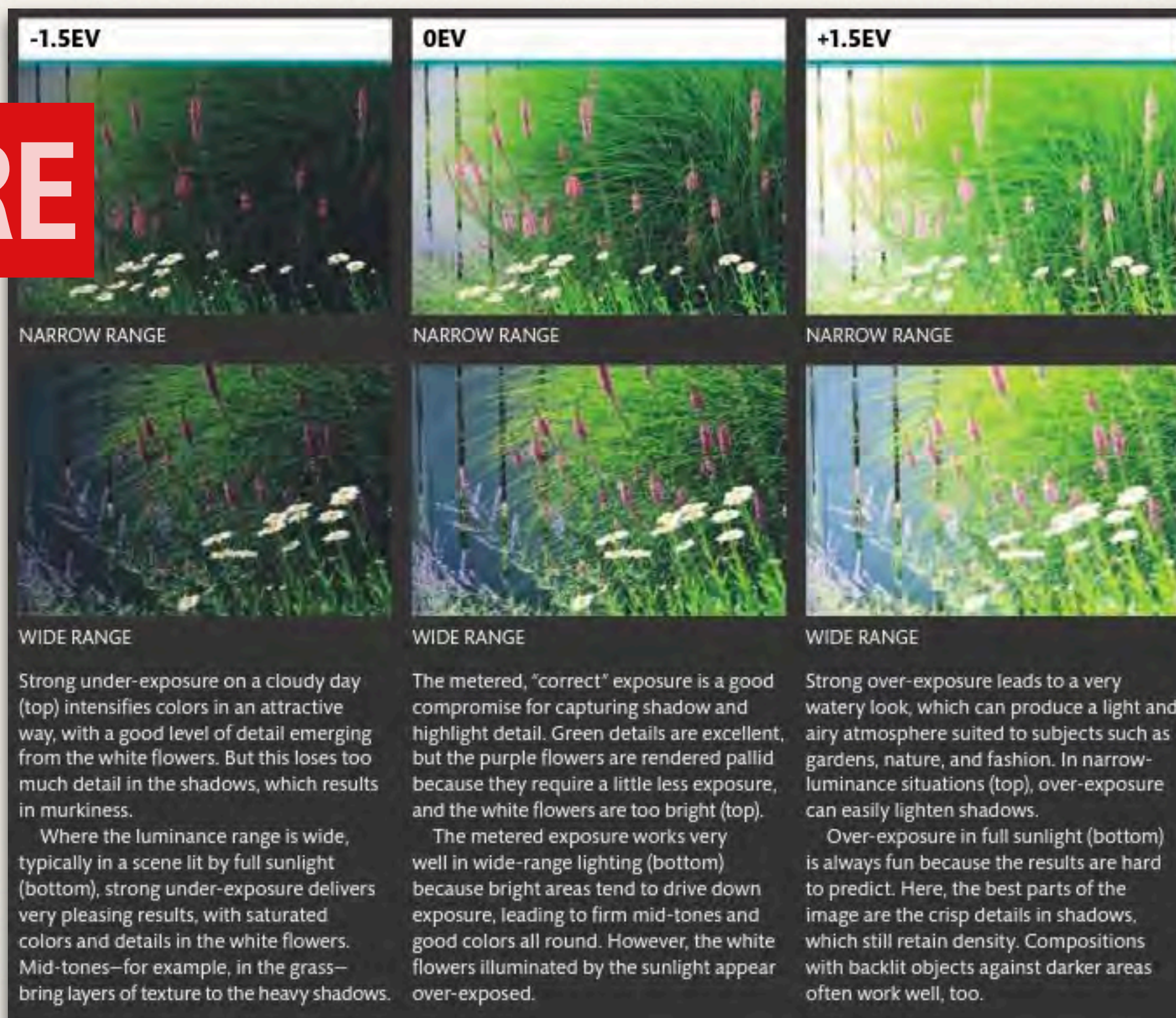
EXPOSURE

+ A SLIDING SCALE

SOMETIMES BEST MANIPULATED

USE IN APERTURE or SHUTTER PRIORITY

(Av or A / Tv or S)



CREATIVE

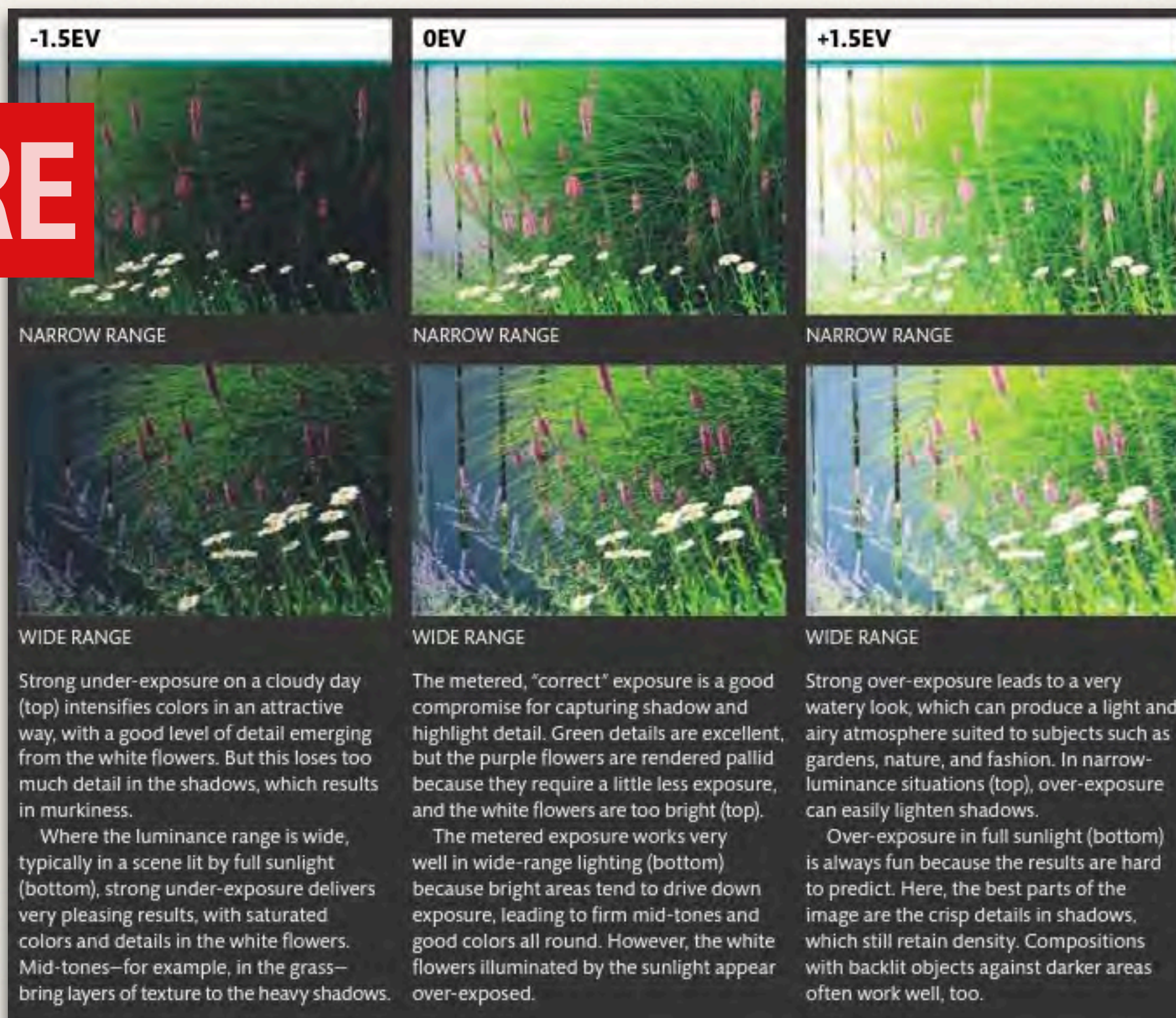
EXPOSURE

+ A SLIDING SCALE

SOMETIMES BEST MANIPULATED

MORE LATITUDE IN BRIGHT LIGHT

(LESS IN SOFT / CLOUDY)









CREATIVE

EXPOSURE

+ TRY THE dSLR SIMULATOR ON BLOG

+ EXPERIMENT ON YOUR OWN

WITH EXPOSURE & SCENE MODES

-1.5EV	0EV	+1.5EV
		
NARROW RANGE	NARROW RANGE	NARROW RANGE
		
WIDE RANGE	WIDE RANGE	WIDE RANGE
<p>Strong under-exposure on a cloudy day (top) intensifies colors in an attractive way, with a good level of detail emerging from the white flowers. But this loses too much detail in the shadows, which results in murkiness.</p> <p>Where the luminance range is wide, typically in a scene lit by full sunlight (bottom), strong under-exposure delivers very pleasing results, with saturated colors and details in the white flowers. Mid-tones—for example, in the grass—bring layers of texture to the heavy shadows.</p>	<p>The metered, “correct” exposure is a good compromise for capturing shadow and highlight detail. Green details are excellent, but the purple flowers are rendered pallid because they require a little less exposure, and the white flowers are too bright (top).</p> <p>The metered exposure works very well in wide-range lighting (bottom) because bright areas tend to drive down exposure, leading to firm mid-tones and good colors all round. However, the white flowers illuminated by the sunlight appear over-exposed.</p>	<p>Strong over-exposure leads to a very watery look, which can produce a light and airy atmosphere suited to subjects such as gardens, nature, and fashion. In narrow-luminance situations (top), over-exposure can easily lighten shadows.</p> <p>Over-exposure in full sunlight (bottom) is always fun because the results are hard to predict. Here, the best parts of the image are the crisp details in shadows, which still retain density. Compositions with backlit objects against darker areas often work well, too.</p>