

Visual Guide

Canon 400d and 450d

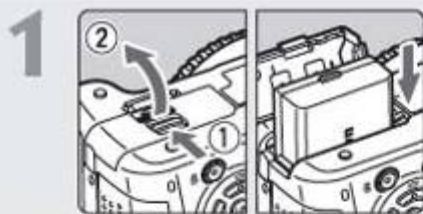
450d info: Camera info: This camera is compatible for SDHC memory cards. It is recommended that you purchase a 2 Gig (gigabyte) card.

400d info: The 400d works with this guide but this camera uses a different memory card a standard SD card.

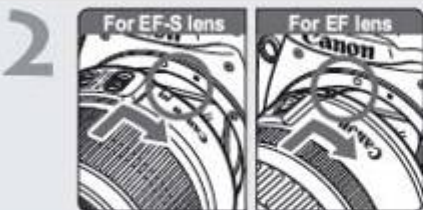
This handout is structured to work in conjunction with a Power point handout called “400d visual guide PP” that illustrates the techniques using differing photographic examples.

Spaces are provided in this guide for extra information to be added during the technical induction in class; so either print this guide before class, or have the guide open on a PC/Mac in class to add notes. A PDF version can be obtained.

Quick Start Guide



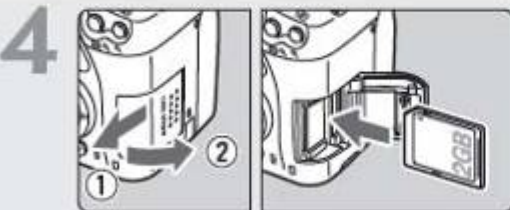
1 Insert the battery. (p.26)
To recharge the battery, see page 24.



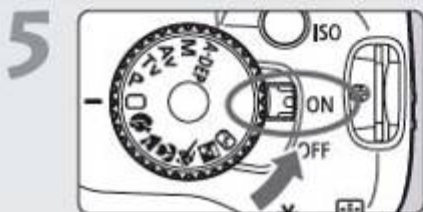
2 Attach the lens. (p.33)
When attaching an EF-S lens, align it with the white index on the camera. For other lenses, align it with the red index.



3 Set the lens focus mode switch to <AF>. (p.33)



4 Open the slot cover and insert a card. (p.31)
With the card's label facing you, insert it into the slot.



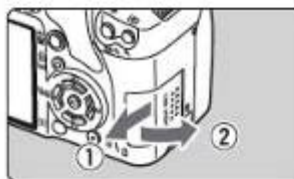
5 Set the power switch to <ON>. (p.27)
● When the LCD monitor displays the Date/Time setting screen, see page 29.

Installing and Removing the Card

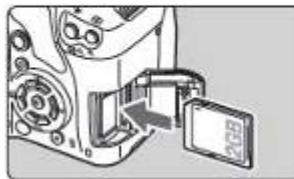
The captured image is recorded onto the card (sold separately).

● **Make sure the card's write protect switch is set upward to enable writing/erasing.**

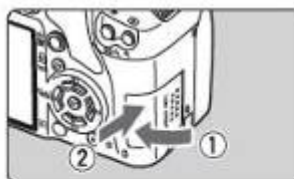
Installing the Card



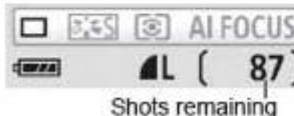
1 Open the cover.
● Slide the cover as shown by the arrow to open it.



2 Insert the Card.
● As shown by the illustration, face the card's label side toward you and insert it until it clicks in place.



3 Close the cover.
● Close the cover and slide it in the direction shown by the arrow until it snaps shut.
● When you set the power switch to <ON>, the number of remaining shots will be displayed on the LCD monitor.



Keep your memory cards stored in a holder and check the gold strips for dust or dirt before inserting into camera. Do not keep the memory cards near extreme heat or cold.

Class Notes:

6



Set the Mode Dial to <□> (Full Auto). (p.44)

All the necessary camera settings will be set automatically.

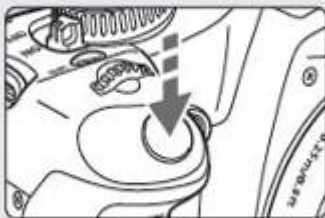
7



Focus the subject. (p.37)

Look through the viewfinder and aim the viewfinder center over the subject. Press the shutter button halfway, and the camera will focus the subject.

8



Take the picture. (p.37)

Press the shutter button completely to take the picture.

9



Review the picture. (p.108)

The captured image will be displayed for about 2 sec. on the LCD monitor. To display the image again, press the <▶> button. (p.54)

- The shooting settings displayed on the LCD monitor will turn off when your eye nears the viewfinder eyepiece.

The half pressing of the shutter button is used to navigate out of menus back to shoot mode. By half pressing the shutter button you will revert the camera from Menu, Display or any of the Arrow keys menus to be able to start shooting.

Class Notes:

Shutter Button

The shutter button has two steps. You can press the shutter button halfway. Then you can further press the shutter button completely.



Pressing halfway

This activates autofocus and automatic exposure metering that sets the shutter speed and aperture. The exposure setting (shutter speed and aperture) is displayed in the viewfinder. (p.4)



Pressing completely

This releases the shutter and takes the picture.

Preventing Camera Shake

Camera movement during the moment of exposure is called camera shake. Camera shake can cause blurred pictures. To prevent camera shake, note the following:

- Hold and steady the camera as shown on the previous page.
- Press the shutter button halfway to autofocus, then press the shutter button completely.

Always be aware of the AF/MF Auto Focus and Manual Focus of the side of the lens. Set to Auto Focus - you must never twist the focus ring on the front of the lens when in Auto Focus as this can damage the lens. Image stabilizer will be discussed in class:
Class Notes:

Installing and Removing the Battery

Installing the Battery

Load a fully charged Battery Pack LP-E5 into the camera.



- 1 Open the battery compartment cover.**
 - Slide the lever as shown by the arrow and open the cover.



- 2 Insert the battery.**
 - Insert the end with the battery contacts.
 - Insert the battery until it locks in place.



- 3 Close the cover.**
 - Press the cover until it snaps shut.

Removing the Battery



- Open the cover and remove the battery.**
 - Press the battery lock lever as shown by the arrow and remove the battery.
 - To prevent shorting, be sure to attach the protective cover to the battery.

Mounting and Detaching a Lens

Mounting a Lens

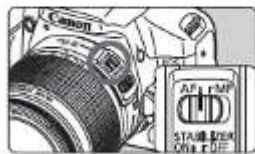


- 1 Remove the caps.**
 - Remove the rear lens cap and the body cap by turning them as shown by the arrow.

EF-S lens mount index



EF lens mount index



- 2 Attach the lens.**
 - Align the EF-S lens with the camera's white EF-S lens mount index and turn the lens as shown by the arrow until it clicks in place.
 - When attaching a lens other than an EF-S lens, align the lens with the red EF lens mount index.

- 3 On the lens, set the focus mode switch to <AF> (autofocus).**
 - If it is set to <MF> (manual focus), autofocus will not operate.



- 4 Remove the front lens cap.**

Image stabilizer will be discussed in class:
Class Notes:

Mounting and Detaching a Lens

About Zooming



To zoom, turn the zoom ring on the lens with your fingers.
If you want to zoom, do it before focusing. Turning the zoom ring after achieving focus may throw off the focus slightly.

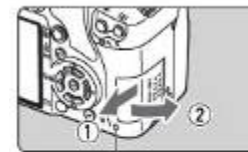
Detaching the Lens



While pressing the lens release button, turn the lens as shown by the arrow.
Turn the lens until it stops, then detach it.

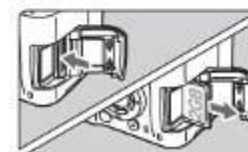
Class Notes:

Removing the Card



Access lamp

- 1 Open the cover.**
 - Set the power switch to <OFF>.
 - Check that "Recording..." is not displayed on the LCD monitor.
 - Make sure the access lamp is off, then open the cover.**

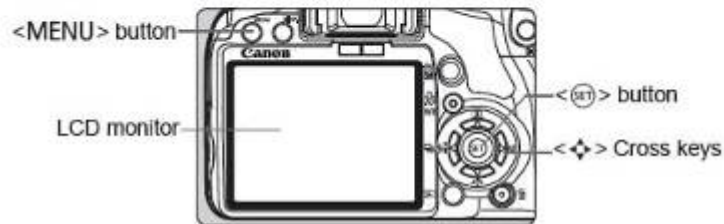


- 2 Remove the card.**
 - Gently push in the card, then let go. The card will stick out.
 - Pull the card straight out, then close the cover.

Navigating via the menu systems and arrow keys

Menu Operations and Settings

By setting various optional settings with the menus, you can set the image-recording quality, date/time, etc. While looking at the LCD monitor, you use the <MENU> button, <◀▶> cross keys, and <SET> button on the camera back.

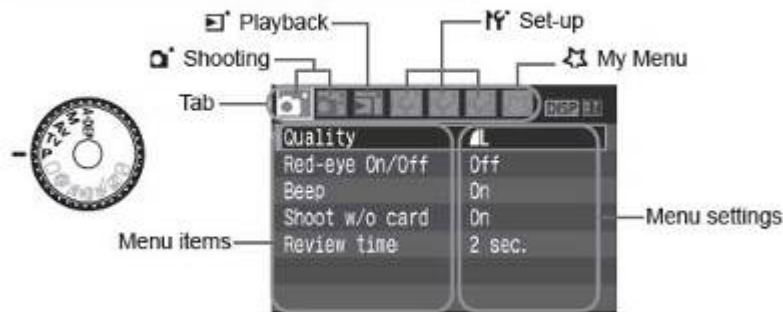


Basic Zone Mode Menu Screen



* The [P/Hi/L1] tabs are not displayed in the Full Auto and Basic Zone modes. When a Basic Zone mode is set, there are menu items which are not displayed.

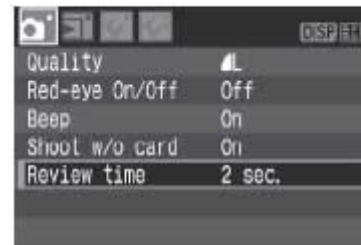
Creative Zone Mode Menu Screen



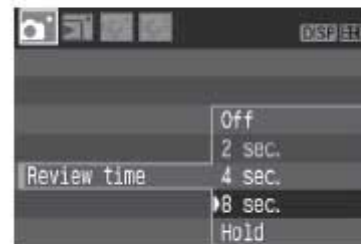
Menu Setting Procedure



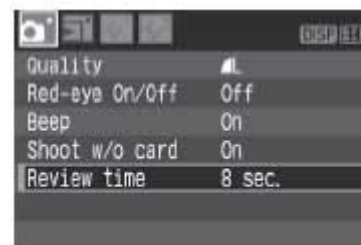
- 1 **Display the menu.**
 - Press the <MENU> button to display the menu.



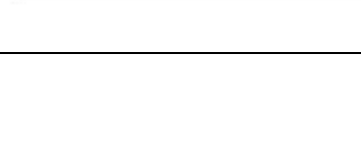
- 2 **Select a tab.**
 - Press the <◀▶> key to select a menu tab.
 - You can also turn the <◀▶> dial to select a tab.



- 3 **Select a menu item.**
 - Press the <▲▼> key to select the menu item, then press <SET>.



- 4 **Select the setting.**
 - Press the <▲▼> or <◀▶> key to select the setting. (Some settings require you to press either the <▲▼> or <◀▶> key to select it.)
 - Some menus will indicate the current setting in blue.



- 5 **Set the desired setting.**
 - Press <SET> to set it.
- 6 **Exit the menu.**
 - Press the <MENU> button to return to the shooting settings display.

ISO class notes:

ISO: Changing the ISO Speed*

Set the ISO speed (image sensor's sensitivity to light) to suit the ambient light level. In the Basic Zone modes, the ISO speed is set automatically.



- 1 Press the <ISO> button. (i6)
▶ [ISO speed] will appear.



- 2 Select the ISO speed.
 - Turn the <▲▼> dial or press the <▲▼> key to select the ISO speed.
 - You can also look at the ISO speed in the viewfinder while turning the <▲▼> dial.

ISO Speed Guide

ISO Speed	Normal (No flash)	Flash Range
100/200	Sunny outdoors	The higher the ISO speed, the farther the flash range will be. (p.58)
400/800	Overcast skies, evening	
1600	Night or dark indoors	

About Auto ISO

This mode sets the ISO speed automatically between ISO 100 - 800 to suit the shooting mode and ambient light level. For flash and <M> (manual) exposures, ISO 400 is set. When you press the shutter button halfway, the automatically-set ISO speed is displayed in the viewfinder and on the LCD monitor.

- Using a high ISO speed or shooting in high-temperature conditions may result in more grainy images. Long exposures can also cause irregular colors in the image.
- Under the [Fn] Custom Functions (C.Fn) menu, if [Highlight tone priority] (p.156) is set to [1: Enable], the settable ISO speed range will be ISO 200 - 1600.

MENU Setting the Image-recording Quality ■

You can select the pixel count (approx. 12.2, 6.3, or 3.4 megapixels) and the image quality.



- 1 Select [Quality].
 - Under the [Q] tab, select [Quality], then press <SET>.
 - ▶ [Quality] will appear.



- 2 Select the image-recording quality.
 - For your reference, the respective quality's megapixel count (****M), image size in pixels (****x****), and the number of possible shots [***] will be displayed. Select the desired quality, then press <SET>.
 - A different image-recording quality can be set separately for the Basic Zone modes and Creative Zone modes.
 - In the Basic Zone modes, RAW and RAW+L will not be displayed as an option.

Guide to Image-recording Quality Settings

Quality		Pixels	File Size (Approx. MB)	Possible Shots	Maximum Burst
L	High quality	Approx. 12.2 megapixels (12M)	4.3	460	53
L			2.2	880	880
M	Medium quality	Approx. 6.3 megapixels (6.3M)	2.5	770	770
M			1.3	1470	1470
S	Low quality	Approx. 3.4 megapixels (3.4M)	1.6	1190	1190
S			0.8	2290	2290
RAW	High quality	Approx. 12.2 megapixels (12M)	15.3	120	6
RAW+L			15.3+4.3	99	4

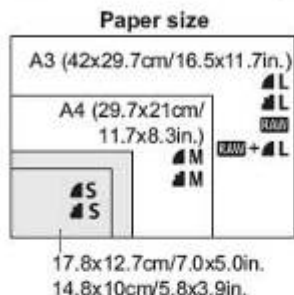
* Based on Canon's testing standards with a 2GB card, ISO 100, and Standard Picture Style.

* The file size, number of possible shots, and maximum burst will vary depending on the subject, card brand, ISO speed, Custom Functions, and other settings.

Class notes:

? FAQ

- I want to select the quality matching the paper size for printing.



Refer to the diagram on the left when choosing the image-recording quality. If you want to crop the image, selecting a higher quality (more pixels) such as L, RAW, or RAW + L is recommended.

- What's the difference between L and S? It indicates a different image quality due to a different compression rate. Even with the same number of pixels, the L image has higher image quality. If S is selected, the image quality will be slightly lower, but more images can be saved to the card.
- I took more shots than the number of possible shots indicated. Depending on the shooting conditions, you may be able to take more shots than was indicated. Or, you might be able to take fewer shots than indicated. The possible shots displayed is only an estimate.
- Does the camera display the maximum burst? The maximum burst is displayed in the viewfinder's right side. Since it is only a single-digit indicator 0 - 9, any number higher than 9 will be displayed only as "9." Note that this number will also be displayed even when no card is installed in the camera. Be careful not to shoot without a card in the camera.
- When do I use the RAW mode? RAW images require processing with your personal computer. For details, see "About RAW" and "About RAW + L" on the next page. Other than RAW, the images will be in the JPEG type commonly used by digital cameras.

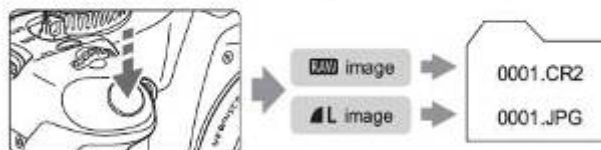
About RAW

RAW is the raw data before it is made into a L or other images. Although RAW images require software like Digital Photo Professional (provided) so they can be displayed on the computer, they also offer flexibility for image adjustments possible only with RAW. RAW is effective when you want to precisely create your own art or shoot an important subject.

For example, with a RAW image, you can use the provided software to create various versions of the same image having a different Picture Style. Also, if you took the picture with the wrong white balance (explained in Chapter 4), you can change the white balance without degrading the image quality. Note that RAW images will not work with direct printing or print ordering (DPOF).

About RAW + L

RAW + L records both a RAW and L image with a single shot. The two images are saved to the card. Since the L image is recorded as a processed image, you can view it as is on a personal computer without the bundled software or print it as is. With RAW + L, the two images are saved with the same file number in the same folder. You can distinguish between them with the image type or extension. The RAW image's extension is "CR2," and the L image's extension is "JPG."



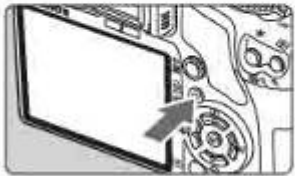
The Auto Lighting Optimizer (p.156) will not work with RAW and RAW + L images.

See RAW processing guides and editing images for films on LN

Class notes on print size:

WB: Setting the White Balance ★

White balance (WB) is for making the white areas look white. Normally, the <AWB> (Auto) setting will obtain the correct white balance. If natural-looking colors cannot be obtained with <AWB>, you can set the white balance manually to suit the respective light source. In the Basic Zone modes, <AWB> will be set automatically.



1 Press the <WB> button.

- ▶ [White balance] will appear.

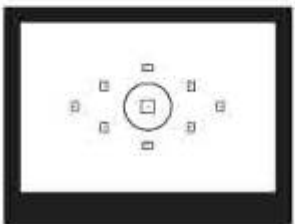
2 Select the white balance.

- Press the <◀▶> key to select the desired white balance, then press <SET>.
- The "Approx. ****K" (K: Kelvin) displayed for the selected white balance <☀> <🏠> <☁> <🌞> <🌧> is the respective color temperature.



Custom White Balance

Custom white balance enables you to manually set the white balance for a specific light source for better accuracy. Do this procedure under the actual light source to be used.



1 Photograph a white object.

- The plain, white object should fill the spot metering circle.
- Focus manually and set the standard exposure for the white object.
- You can set any white balance.



2 Select [Custom WB].

- Under the [OK] tab, select [Custom WB], then press <SET>.
- ▶ The SET screen will appear.



3 Import the white balance data.

- Select the image that was captured in step 1, then press <SET>.
- ▶ On the dialog screen which appears, select [OK] and the data will be imported.
- When the menu reappears, press the <MENU> button to exit the menu.



4 Select the custom white balance.

- Press the <WB> button.
- Press the <◀▶> key to select <☀>, then press <SET>.

See PowerPoint for differing effects on light.

Class Notes:

Same as setting white balance on mini DV or film camera

Class Notes: experiment with differing white balance settings in differing locations; break the rules; try a florescent setting out doors etc

Mode Dial

The Mode Dial has the Basic Zone modes and Creative Zone modes.

Creative Zone

These modes give you more control over the result.

- P** : Program AE (p.56)
- Tv** : Shutter-priority AE (p.70)
- Av** : Aperture-priority AE (p.72)
- M** : Manual exposure (p.75)
- A-DEP** : Automatic depth-of-field AE (p.75)

Full Auto



Basic Zone

All you do is press the shutter button. Fully automatic shooting for specific kinds of subjects

- Full Auto (p.44)

Image Zone

- Portrait (p.47)
- Landscape (p.48)
- Close-up (p.49)
- Sports (p.50)
- Night Portrait (p.51)
- Flash Off (p.52)

Using the Mode dial:

When using the Creative zone the flash will not automatically pop up, and you will need to manually use the flash release button. In basic Mode, the flash will pop up automatically if there is not enough light on the subject.

Class Notes:

P: Program AE

To obtain a good exposure of the subject, the camera sets the exposure (shutter speed and aperture) automatically. This is called Program AE.



1 Set the Mode Dial to <P>.



2 Take the picture.

- Press the shutter button halfway and the camera will focus.
- ▶ The exposure setting (shutter speed and aperture) set automatically is displayed in the viewfinder.
- Press the shutter button completely.



Shooting Tips

- **Changing the ISO speed and using the built-in flash.**
To match the subject and lighting level, you can change the ISO speed (p.57) or use the built-in flash (p.58). In the <P> mode, the built-in flash will not fire automatically. So under low light, press the <Flash> button to pop-up the flash.
- **The program can be shifted. (Program shift)**
After pressing the shutter button halfway, turn the <Program Shift> dial to change the shutter speed and aperture setting combination (program). After you take the picture, the program shift will be canceled. Program shift is not possible with flash.



In very low light or very bright light, the shutter speed and aperture display will blink when you press the shutter button halfway, as shown in the figure. In low light (30" 3.5), either increase the ISO speed (p.57) or use flash (p.58). In bright light (4000 22), decrease the ISO speed.

P mode Class Notes:

“Flashing” Shutter or Aperture (F-numbers) numbers class notes:

Tv: Action Shots

You can either freeze the action or create motion blur with the <Tv> (Shutter-priority AE) mode on the Mode Dial.

* <Tv> stands for Time value.



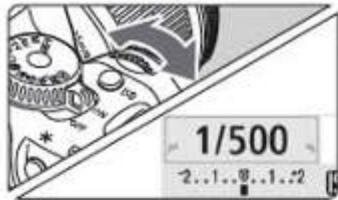
Frozen action



Blurred action



1 Set the Mode Dial to <Tv>.



2 Set the desired shutter speed.

- See "Shooting Tips" for advice on setting the shutter speed.
- Turning the <⏸> dial to the right sets a faster shutter speed, and turning it to the left sets a slower one.



3 Take the picture.

- When you focus and press the shutter button completely, the picture will be taken at the selected shutter speed.

About the Shutter Speed Display

The LCD monitor displays the shutter speed as a fraction. However, the viewfinder displays only the denominator. Also, "0"5" indicates 0.5 sec. and "15"" is 15 sec.

TV mode: Class Notes

See PP for images using TV mode.

Shutter Speed Display

The shutter speeds from "4000" to "4" indicate the denominator of the fractional shutter speed. For example, "125" indicates 1/125 sec. Also, "0"6" indicates 0.6 sec. and "15"" is 15 sec.

4000	3200	2500	2000	1600	1250	1000	800	640	500				
400	320	250	200	160	125	100	80	60	50	40	30		
25	20	15	13	10	8	6	5	4	0"3	0"4	0"5	0"6	0"8
1"	1"3	1"6	2"	2"5	3"2	4"	5"	6"	8"	10"	13"		
15"	20"	25"	30"										

Av: Changing the Depth of Field

To obtain a blurry background or to make everything near and far look sharp, set the Mode Dial to <Av> (Aperture-priority AE) to adjust the depth of field (range of acceptable focus).

* <Av> stands for Aperture value which is the size of the diaphragm hole inside the lens.



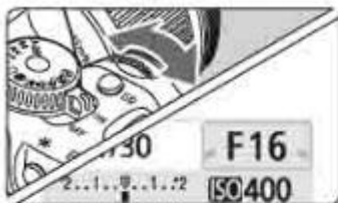
Blurred background



Sharp foreground and background



1 Set the Mode Dial to <Av>.



2 Set the desired aperture.

- The higher the aperture, the sharper the picture will look with a wider depth of field.
- Turning the <aperture dial> to the right will set a higher f-number, and turning it to the left will set a lower f-number.



3 Take the picture.

- Focus and press the shutter button completely. The picture will be taken with the selected aperture.

About the Aperture Display

The larger the f-number, the smaller the aperture opening will be. The apertures displayed will differ depending on the lens. If no lens is attached to the camera, "00" will be displayed for the aperture.

AV mode: Class Notes

See PP for images using AV mode.

Defining the audience/viewer gaze and point location definition



- If the "30" shutter speed blinks, it indicates underexposure. Turn the <aperture dial> to set a larger aperture (lower f-number) until the blinking stops or set a higher ISO speed.



- If the "4000" shutter speed blinks, it indicates overexposure. Turn the <aperture dial> to set a smaller aperture (higher f-number) until the blinking stops or set a lower ISO speed.



Aperture Value Display

The higher the f-number, the smaller the aperture opening will be. The aperture values displayed will differ depending on the lens. If no lens is attached to the camera, "00" will be displayed for the aperture value.

1.0	1.1	1.2	1.4	1.6	1.8	2.0	2.2	2.5	2.8	3.2	3.5	4.0
4.5	5.0	5.6	6.3	7.1	8.0	9.0	10	11	13	14	16	18
20	22	25	29	32	36	40	45	51	59	64	72	81
91												

Depth of Field Preview *



Press the depth-of-field preview button to stop down to the current aperture setting. The diaphragm in the lens will close to the current aperture and you can check the depth of field (range of acceptable focus) through the viewfinder.

M: Manual Exposure

You can set both the shutter speed and aperture as desired. With flash, the flash exposure will be set automatically to match the aperture that was set. The flash sync speed can be set to bulb, or from 30 sec. to 1/200 sec.

* <M> stands for Manual.



1 Set the Mode Dial to <M>.

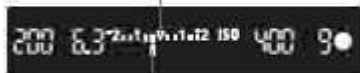


2 Set the shutter speed and aperture.

- To set the shutter speed, turn the <⌚> dial.
- To set the aperture, hold down the <Av/□> button and turn the <⌚> dial.



Standard exposure index



Exposure level mark.

3 Set the exposure and take the picture.

- The exposure level indicator in the viewfinder indicates the exposure level up to ±2 stops from the standard exposure index at the center. While you change the shutter speed and aperture, the exposure level mark will move. You can decide which exposure level to set.

Bulb Exposures

In step 2, turn the <⌚> dial left to set <BULB>. A bulb exposure keeps the shutter open for as long as you hold down the shutter button. It can be used to photograph fireworks, etc. The elapsed exposure time will be displayed on the LCD monitor.

M mode: Class Notes

Using M mode requires technical expertise in manipulating the camera, and is usually used in controlled locations i.e. studios. See PP for images using M mode.

Images of Bulb: see PP guide for breakdown of Bulb shooting and slow shutter settings and affects upon the image.

A-DEP: Automatic Depth-of-Field AE

Objects in the foreground and background will be in focus automatically. All the AF points will function to detect the subject, and the aperture required to attain the necessary depth of field will be set automatically.

* <A-DEP> stands for Auto-Depth of field. This mode sets the depth of field automatically.



1 Set the Mode Dial to <A-DEP>.



2 Focus the subject.

- Aim the AF points over the subjects and press the shutter button halfway (Ⓐ)
- All the subjects covered by the AF points flashing in red will be in focus.

3 Take the picture.

? FAQ

- **The shutter speed display in the viewfinder blinks.**
If the "30" shutter speed blinks, it means that the subject is too dark. Increase the ISO speed. If the "4000" shutter speed blinks, it means that the subject is too bright. Decrease the ISO speed.
- **The aperture display in the viewfinder blinks.**
The exposure is correct, but the desired depth of field cannot be obtained. Either use a wide-angle lens or move farther away from the subjects.
- **A slow shutter speed has been set.**
Use a tripod.
- **I want to use flash.**
Flash can be used, however, the result will be the same as using the <P> mode with flash. The desired depth of field will not be obtained.

A-DEP:

Class notes:

Setting Exposure Compensation *

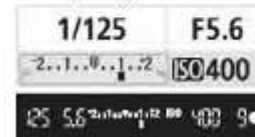
Exposure compensation is used to alter the standard exposure set by the camera. You can make the image look brighter (increased exposure) or darker (decreased exposure). This feature can be used in the Creative Zone modes (except <M>). The exposure compensation setting will not be automatically canceled when you turn off the camera. After taking the picture, reset the exposure compensation to zero.

Setting Exposure Compensation

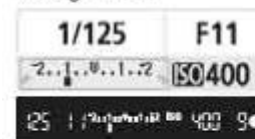
Set exposure compensation if the exposure (without flash) does not come out as desired.



Making it brighter



Making it darker



Making it brighter

Hold down the <Av/□> button and turn the <☺> dial to the right.

Making it darker

Hold down the <Av/□> button and turn the <☺> dial to the left.

- ▶ As shown in the figure, the exposure level is displayed on the LCD monitor and in the viewfinder.

- After taking the picture, hold down the <Av/□> button and turn the <☺> dial to reset the exposure compensation to zero.



Exposure is dark



Exposure compensation made it brighter

Digital cameras and all photographic film equipment read 18 percent grey scale the middle values in tonal ranges; so the camera is always trying to give a balanced tonal range to an image. Exposure compensation gives you the ability to alter the appearance to your desires. With the use of Photoshop it can be argued to always take the image in a balanced form and then alter afterwards on Photoshop. This will be discussed in class.

☰ Selecting the AF Point *

In the Basic Zone modes, all the AF points are active. Generally, the AF point covering the closest subject will be selected to focus. Therefore, the camera sometimes may not focus the subject you want. With the <P> (Program AE), <Tv>, <Av>, and <M> modes, you can select one AF point to focus where you want.



1 Press the <AF-ON> button. (p.6)

▶ The selected AF point is indicated on the LCD monitor and in the viewfinder.

- When all AF points light up, automatic AF point selection will be set.



2 Select the AF point.

- Press the <AF-ON> key to select the AF point.
- While looking at the viewfinder, you can select the AF point by turning the <AF-ON> dial until the desired AF point flashes in red.
- Pressing <AF-ON> toggles the AF point selection between the center AF point and automatic AF point selection.



3 Focus the subject.

- Aim the selected AF point over the subject and press the shutter button halfway to focus.

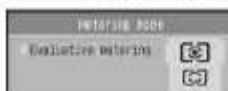
☰ Changing the Metering Mode *

The metering mode is the method of measuring the brightness of the subject. Normally, evaluative metering is recommended.



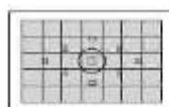
1 Press the <MFn> button.

- ▶ [Metering mode] will appear.



2 Select the metering mode.

- Press the <MFn> key to select the metering mode, then press <MFn>.



☰ Evaluative metering

This is an all-around metering mode suited for portraits and even backlit subjects. The camera sets the exposure automatically to suit the scene. This metering mode is set automatically in the Basic Zone modes.



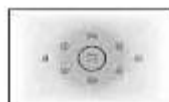
☰ Partial metering

Effective when the background is much brighter than the subject due to backlighting, etc. The gray area in the left figure is where the metering is weighted to obtain the standard exposure.



☰ Spot metering

This is for metering a specific part of the subject or scene. The gray area in the left figure is where the metering is weighted to obtain the standard exposure. This metering mode is for advanced users.



☰ Center-weighted average metering

The metering is weighted at the center and then averaged for the entire scene. This metering mode is for advanced users.

* AE Lock *

Use AE lock when the area of focus is to be different from the exposure metering area or when you want to take multiple shots at the same exposure setting. Press the <AE-L/AF-L> button to lock the exposure, then recompose and take the shot. This is called AE lock. It is effective for backlit subjects.



1 Focus, then press the <AE-L/AF-L> button. (p.4)

- Press the shutter button halfway.
- ▶ The exposure setting will be displayed.
- ▶ The <AE-L/AF-L> icon lights in the viewfinder to indicate that the exposure setting is locked (AE lock).
- Each time you press the <AE-L/AF-L> button, it locks the current exposure setting.



2 Recompose and take the picture.

AE Lock Effects

Metering Mode (p.77)	AF Point Selection Method	
	Automatic Selection	Manual Selection
☰*	AE lock is applied at the AF point that achieved focus.	AE lock is applied at the selected AF point.
☰☰☰	AE lock is applied at the center AF point.	

Setting an AF point
Class Notes:

Changing the Metering mode:
Class notes:

Using AE mode
Class Notes:

Full Auto Techniques

Recomposing the Shot



Depending on the scene, position the subject toward the left or right to create a balanced background and good perspective. In the \square (Full Auto) mode, while you press the shutter button halfway to focus a still subject, the focus will be locked. You can then recompose the shot and press the shutter button completely to take the picture. This is called "focus lock". Focus lock is also possible in other Basic Zone modes (except \rightarrow Sports).

Shooting a Moving Subject



In the \square (Full Auto) mode, if the subject moves (distance to camera changes) during or after you focus, AI Servo AF will take effect to focus the subject continuously. As long as you keep aiming the AF point on the subject while pressing the shutter button halfway, the focusing will be continuous. When you want to take the picture, press the shutter button completely.

Shooting Portraits

The \rightarrow (Portrait) mode blurs the background to make the human subject stand out. It also makes flesh tones and the hair look softer than with the \square (Full Auto) mode.



Shooting Tips

- **The farther the distance between the subject and background, the better.**
The farther the distance between the subject and background, the more blurred the background will look. The subject will also stand out better in front of a plain, dark background.
- **Use a telephoto lens.**
If you have a zoom lens, use the telephoto end to fill the frame with the subject from the waist up. Move in closer if necessary.
- **Focus the face.**
Check that the AF point covering the face flashes in red.

Shooting Landscapes

Use the \rightarrow (Landscape) mode for wide scenery, night scenes, or to have everything in focus from near to far. The greens and blues also become more vivid and sharp than with \square (Full Auto).



Shooting Tips

- **With a zoom lens, use the wide-angle end.**
When using a zoom lens, use the wide-angle end. This will have objects near and far in focus, better than at the telephoto end. It also adds breadth to landscapes.
- **Shooting night scenes.**
Since the built-in flash will be disabled, this mode is also good for night scenes. Use a tripod to prevent camera shake. If you want to photograph a person against a night scene, set the Mode Dial to \rightarrow (Night Portrait) and use a tripod. (p. 51)



Shooting Close-ups

When you want to photograph flowers or small things up close, use the \rightarrow (Close-up) mode. To make small things appear much larger, use a macro lens (sold separately).



Shooting Tips

- **Use a simple background.**
A simple background makes the flower, etc., stand out better.
- **Move to the subject as close as possible.**
Check the lens for its minimum focusing distance. Some lenses have indications such as \rightarrow 0.25m/0.8ft. The lens minimum focusing distance is measured from the \rightarrow (focal plane) mark on the camera to the subject. If you are too close to the subject, the focus confirmation light \rightarrow will blink. Under low light, the built-in flash will fire. If you are too close to the subject and the bottom of the picture looks dark, move away from the subject.
- **With a zoom lens, use the telephoto end.**
If you have a zoom lens, using the telephoto end will make the subject look larger.

Sports: 1/1000/1/4000

Portrait: F4 to F5.6

Landscapes: F16/F32

Close up:

Shooting Moving Subjects

To photograph a moving subject, whether it is a child running or a moving vehicle, use the \rightarrow (Sports) mode.



Shooting Tips

- **Use a telephoto lens.**
Using a telephoto lens is recommended so you can shoot from afar.
- **Use the center AF point to focus.**
Aim the center AF point over the subject, then press the shutter button halfway to auto focus. During autofocus, the beeper will continue beeping softly. If focus cannot be achieved, the focus confirmation light \rightarrow will blink. When you want to take the picture, press the shutter button completely. If you hold down the shutter button, continuous shooting (max. approx. 3.5 shots per sec.) and autofocus will take effect.

Shooting Portraits at Night

To shoot someone at night and obtain a natural-looking exposure in the background, use the \rightarrow (Night Portrait) mode.



Shooting Tips

- **Use a wide-angle lens and a tripod.**
When using a zoom lens, use the wide-angle end to obtain a wide night view. Use a tripod to prevent camera shake.
- **Keep the person within 5 meters/16.4 feet from the camera.**
Under low light, the built-in flash will fire automatically to obtain a good exposure of the person. The effective distance of the built-in flash is 5 meters/16.4 feet from the camera.
- **Shoot also with \square (Full Auto).**
Since camera shake is prone to occur with night shots, shooting also with \square (Full Auto) is recommended.

Disabling Flash

In places where flash photography is prohibited, use the \rightarrow (Flash Off) mode. This mode is also effective for candlelight scenes when you want to obtain the candlelight effect.



Shooting Tips

- **If the numeric display in the viewfinder blinks, take care to prevent camera shake.**
Under low light when camera shake is prone to occur, the viewfinder's shutter speed display will blink. Hold the camera steady or use a tripod. When using a zoom lens, use the wide-angle end to reduce blur caused by camera shake.
- **Taking portraits without flash.**
Under low light, the person must not move until the picture is taken. If the person moves during the exposure, he or she might look blurred in the picture.

The Basic modes:

These settings give you little control over the Shutter, Aperture and many aspects of the camera. They serve an important purpose in photographic work in defined locations.

Class notes:

Benefits of basic mode:

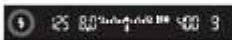
Using the Built-in Flash

In indoors, low light, or backlit conditions, just pop-up the built-in flash and press the shutter button to take flash pictures. In the <P> mode, the shutter speed (1/60 sec. - 1/200 sec.) will be set automatically to prevent camera shake.



1 Press the <F> button.

- In Creative Zone modes, you can press the <F> button anytime to take flash pictures.
- While the flash is recycling, "buSY" is displayed in the viewfinder, and [BUSY] is displayed on the upper left of the LCD monitor.



2 Press the shutter button halfway.

- In the bottom left of the viewfinder, check that the <F> icon is lit.



3 Take the picture.

- When focus is achieved and you press the shutter button completely, the flash will fire for the picture.

Effective Flash Range [Approx. in meters / feet]

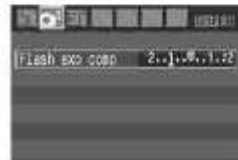
ISO Speed	EF-S18-55mm f/3.5-5.6 IS	
	Wide Angle: 18mm	Telephoto: 55mm
100	1 - 3.7 / 3.3 - 12.1	1 - 2.3 / 3.3 - 7.5
200	1 - 5.3 / 3.3 - 17.4	1 - 3.3 / 3.3 - 10.8
400/Auto	1 - 7.4 / 3.3 - 24.3	1 - 4.6 / 3.3 - 15.1
800	1 - 10.5 / 3.3 - 34.4	1 - 6.6 / 3.3 - 21.7
1600	1 - 14.9 / 3.3 - 48.9	1 - 9.3 / 3.3 - 30.5

Flash Exposure Compensation *

Set flash exposure compensation if the flash exposure of the subject does not come out as desired. This feature also works with external EX-series Speedlites.

1 Select [Flash exp comp].

- Under the [Fn] tab, select [Flash exp comp], then press <ENT>.



2 Set the exposure compensation amount.

- To make the flash exposure brighter, press the <R> key. Or to make it darker, press the <L> key.
- After setting the flash exposure compensation amount, press <ENT>.
- When you press the shutter button halfway, the <F> icon and flash exposure compensation amount will be displayed on the LCD monitor and the <F> icon will appear in the viewfinder.
- After taking the picture, do step 2 to reset the flash exposure compensation amount to zero.



A bright flash exposure



Flash exposure compensation making it darker

If the [Custom Functions (C.Fn)] menu's [Auto Lighting Optimizer] (p. 156) is set to [0: Enable], the exposure compensation and flash exposure compensation may not be effective. In such cases, set it to [1: Disable].

* FE Lock *

FE lock locks the flash exposure setting over the desired area of the subject. This feature also works with external EX-series Speedlites.

* FE stands for Flash Exposure.



1 Press the <F> button to pop-up the built-in flash.

- Press the shutter button halfway and look in the viewfinder to check that the <F> icon is lit.



2 Focus the subject.



3 Press the <F> button. (Fn)

- Aim the viewfinder center over the subject where you want to lock the flash exposure, then press the <F> button.
- The flash will fire a preflash and the required flash output is calculated and retained in memory.
- In the viewfinder, "FEL" is displayed for a moment and <F> will light.
- Each time you press the <F> button, a preflash is fired and the required flash output is calculated and retained in memory.



4 Take the picture.

- Compose the shot and press the shutter button completely.
- The flash is fired to take the picture.

If the subject is too far away and beyond the effective range of the flash, the <F> icon will blink. Get closer to the subject and repeat steps 2 to 4.

Class Notes: See PP:

Class Notes:

Class Notes:

MENU Auto Exposure Bracketing*

This feature takes exposure compensation a step further by varying the exposure automatically with three shots as shown below. You can then choose the best exposure. This is called AEB (Auto Exposure Bracketing).



Standard exposure



Darker exposure
(Decreased exposure)



Brighter exposure
(Increased exposure)

1 Select [AEB].

- Under the [AF] tab, select [AEB], then press <M/>>.

2 Set the AEB amount.

- Press the <◀▶> key to set the AEB amount, then press <M/>>.
- When you press the shutter button halfway, the AEB amount will be displayed on the LCD monitor.

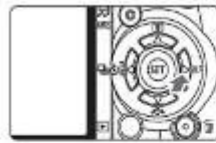


3 Take the picture.

- Focus and press the shutter button completely. The three bracketed shots will be taken in this sequence: Standard, decreased, and increased exposure.

AF: Changing the AF Mode*

You can change the AF mode to suit different subjects such as group photos, animals, and sports.



1 Press the <▶ AF> button.

- [AF mode] will appear.

2 Select the AF mode.

- Press the <◀▶> key to select the AF mode, then press <M/>>.

3 Focus the subject.

- Aim the AF point over the subject and press the shutter button halfway. The camera will then autofocus in the selected AF mode.



Selecting the Best AF Mode

● One-Shot AF

Suitable for still subjects. When you press the shutter button halfway, the camera will focus only once. You can also recompose the shot.

● AI Focus AF

Suitable when you cannot decide between One-Shot AF or AI Servo AF. Depending on the subject's movement, the camera will switch automatically to One-Shot AF or AI Servo AF.

* When focus is achieved in the AI SERVO AF mode, the beeper will sound softly. The focus confirmation light <●> in the viewfinder will not light.

* AI stands for Artificial Intelligence.

● AI Servo AF

Suitable for moving subjects. While you hold down the shutter button halfway, the focus and exposure setting will be adjusted continuously.

* Even when focus is achieved, the beeper will not sound. Also, the focus confirmation light <●> in the viewfinder will not light.

Continuous Shooting*

You can shoot up to about 3.5 shots per sec. This is effective for shooting your child running toward you and capturing the different facial expressions.



1 Press the <◀ M/ ▶> button.



2 Select <M/▶>.

- Press the <◀▶> key to select <M/▶>, then press <M/>>.

3 Take the picture.

- The camera shoots continuously while you hold down the shutter button fully.

Shooting Tips

- Also set the AF mode matching the subject.

For moving subject:

When AI Servo AF is set, focusing will be continuous during continuous shooting.

For still subjects:

When One-Shot AF is set, the camera will focus only once during continuous shooting.

- Flash can also be used.

Since the flash will require recharging time, the continuous shooting speed will be slower.

- If "buSY" is displayed in the viewfinder, wait a few seconds before resuming.

When you press the shutter button halfway and "buSY" is not displayed, you can start shooting again.

Class Notes:

Class Notes:

Class Notes:

Image Playback

The easiest way to playback images is explained below. For more details on image playback methods, see page 123.



1 Playback the image.

- When you press the **[▶]** button, the last captured image will be displayed.



2 Select the image.

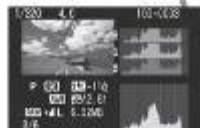
- To view images starting with the last image, press the **[◀]** key.
- To view images starting with the first (oldest) image, press the **[▶]** key.
- Press the **[DISP.]** button to change the display format.



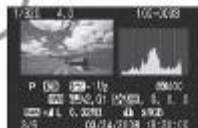
Single image display



Single image display + Image-recording quality



Histogram display



Shooting information display

3 Exit the image playback.

- Press the **[▶]** button to exit the image playback and return the shooting settings display.

Magnified View



Magnified area

Magnify the image.

- During image playback, press the **[Q]** button to magnify the image.
- If you keep pressing the **[Q]** button, you can magnify the image up to 10x.
- Use the **[◀]** / **[▶]** keys to scroll around the magnified image.
- Press the **[Q]** button to reduce the magnification. To exit the magnified image, press the **[▶]** button.



- You can turn the **[Q]** dial to view another image with the magnification maintained.
- Magnified view is not possible during the Image review immediately after the image is taken.

Rotating the Image



1 Select [Rotate].

- Under the **[E]** tab, select **[Rotate]**, then press **[ENT]**.



2 Select the image and rotate it.

- Press the **[◀]** / **[▶]** key to select the image to be rotated, then press **[ENT]**.
- Each time you press **[ENT]**, the image will rotate.
- To rotate another image, repeat the above procedure.
- To exit the image rotate and return to the menu, press the **[MENU]** button.



- If the rotated image is not displayed in the rotated orientation during image playback, set the **[Auto rotate]** menu to **[On]**.

Searching for Images Quickly

Display Multiple Images on One Screen (Index display)

Search for images quickly with the index display showing four or nine images on one screen.



1 Turn on the index display.

- During image playback, press the **[Q]** button.
- The 4-image index display will appear. The currently-selected image will be highlighted in a blue frame.
- Press the **[Q]** button again to switch to the 9-image index display.



2 Select the image.

- Turn the **[Q]** dial to select an adjacent image.
- Press the **[◀]** / **[▶]** key to move the blue frame to select another image.
- Press the **[Q]** button to display the selected image at full view.

Class Notes:

Class Notes:

Class Notes:

Erasing Images

You can either select and erase images one by one or erase them in one batch. Protected images (p. 129) will not be erased.

- Once an image is erased, it cannot be recovered. Make sure you no longer need the image before erasing it. To prevent important images from being erased accidentally, protect it. Erasing a **RAW+L** image will erase both the RAW and JPEG images.

Erasing a Single Image



1 Playback the image to be erased.

2 Press the **[M/DEL]** button.

- The erase menu will appear at the bottom of the screen.



3 Erase the image.

- Select **[Erase]**, then press **[OK]**. The image displayed will be erased.

MENU Checkmarking **[✓]** Images to be Erased in a Batch

By checkmarking the images to be erased, you can erase multiple images at one time. On the **[Erase images]** menu, select **[Select and erase images]**. With the **[▲/▼]** key, checkmark **[✓]** the images to be erased. Then press the **[M/DEL]** button.

MENU Erasing All Images in the Card

When the **[Erase images]** menu is set to **[All images on card]**, all the images in the card will be erased.

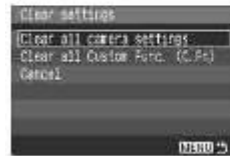
MENU Reverting the Camera to the Default Settings*

This is for reverting all the camera's shooting settings and Custom Functions to the default settings. This works in the **[P]** and other Creative Zone modes.



1 Select **[Clear settings]**.

- Under the **[Yi]** tab, select **[Clear settings]**, then press **[OK]**.



2 Select the desired setting.

- To revert the shooting settings to the default, select **[Clear all camera settings]**, then press **[OK]**.
- To revert the Custom Functions to the default settings, select **[Clear all Custom Func. (C.Fn)]**, then press **[OK]**.



3 Select **[OK]**.

- Select **[OK]**, then press **[OK]** to clear the camera settings.
- When **[Clear all camera settings]** is set, the camera will be reset as shown in the table below.

Shooting Settings

AF mode	One-Shot AF
AF point selection	Automatic selection
Metering mode	<input checked="" type="checkbox"/> (Evaluative metering)
Drive mode	<input type="checkbox"/> (Single shooting)
Exposure compensation	0 (Zero)
AEB	Canceled
Flash exposure compensation	0 (Zero)
Live View shooting	Disable

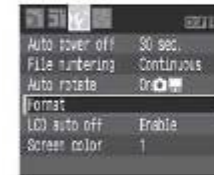
Image Settings

Quality	L
ISO speed	Auto
File numbering	Continuous
Color space	sRGB
White balance	AWB (Auto WB)
WB correction	Canceled
WB bracketing	Canceled
Picture Style	Standard

MENU Formatting the Card

If the card is new or was previously formatted by another camera or personal computer, format the card with the camera.

- Formatting the card will erase everything in the card. Even protected images will be erased, so make sure there is nothing you need to keep. If necessary, transfer the images to a personal computer before formatting the card.



1 Select **[Format]**.

- Under the **[Yi]** tab, select **[Format]**, then press **[OK]**.



2 Format the card.

- Select **[OK]**, then press **[OK]**.
- The card will be formatted.
- When the formatting is completed, the menu will reappear.
- For low-level formatting, press the **[M/DEL]** button, checkmark **[Low level format]** with **[✓]**, then select **[OK]**.

Sometimes a camera SD card can be corrupt or have hidden folders and files, and have extra folders created when using a MAC or PC. If the camera informs you of a corrupt card and you have images on the card you wish to save. Do not format/delete the card or take any more shots on the card. Take the card to a photography shop and ask for a recovery. (Many new cards come with recovery programs you can install on computers) once this is done, then format your card and clear all files from the card.

Class Notes:

Before you hand the camera back to the media centre make sure to revert the "Camera Settings" back to the default settings: do not reset the "Custom Functions" unless you have altered them.

Class Notes:

Class Notes:

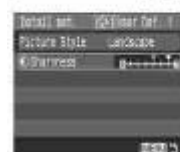
Customizing your camera to act like Photoshop

On most new digital cameras; there will be settings to alter various aspects of the picture before taking an image, these ranges from Monochrome to altering colours, adding filters etc. This is not recommended as the image is then set and cannot be changed i.e. setting the camera to take a black and white image means you cannot revert that image to a colour image later. All adjustments to images should be performed on Photoshop.

☰ Registering the Picture Style *

You can select a base Picture Style such as [Portrait] or [Landscape], adjust its parameters as desired and register it under [User Def. 1], [User Def. 2], or [User Def. 3]. You can also select a Picture Style already set with the provided software.

- Select [Picture Style].**
 - Under the [CF] tab, select [Picture Style], then press <DISP>.
 - The Picture Style selection screen will appear.
- Select [User Def.].**
 - Select [User Def. 1], then press the <DISP> button.
 - The Detail set. screen will appear.
- Press <MENU>.**
 - With [Picture Style] selected, press <MENU>.
- Select the base Picture Style.**
 - Press the <▲▼> key to select the base Picture Style, then press <DISP>.
 - If you already have a Picture Style set with the provided software, select it here.



- Select a parameter.**
 - Select a parameter such as [Sharpness], then press <DISP>.
- Set the parameter.**
 - Press the <◀▶> key to adjust the parameter as desired, then press <DISP>.
 - For details, see "Customizing the Picture Style" on pages 82-84.
 - Press the <MENU> button to register the new Picture Style. The Picture Style selection screen will then reappear.
 - The base Picture Style will be indicated on the right of [User Def. 1].
 - The name of the Picture Style having any modified settings (different from the default) registered under [User Def. 1] will be displayed in blue.

☰ Customizing the Picture Style *

You can customize a Picture Style by adjusting individual parameters like [Sharpness] and [Contrast]. To see the resulting effects, take test shots. To customize [Monochrome], see page 84.

- Select [Picture Style].**
 - Under the [CF] tab, select [Picture Style], then press <DISP>.
 - The Picture Style selection screen will appear.
- Select a Picture Style.**
 - Select a Picture Style, then press the <DISP> button.
 - The Detail set. screen will appear.
- Select a parameter.**
 - Select a parameter such as [Sharpness], then press <DISP>.
- Set the parameter.**
 - Press the <◀▶> key to adjust the parameter as desired, then press <DISP>.
 - Press the <MENU> button to save the adjusted parameter. The Picture Style selection screen will reappear.
 - Any parameter settings different from the default will be displayed in blue.



Monochrome Adjustment

For Monochrome, you can also set [Filter effect] and [Toning effect] in addition to [Sharpness] and [Contrast] explained on the preceding page.

Filter Effect

With a filter effect applied to a monochrome image, you can make white clouds or green trees stand out more.

Filter	Sample Effects
N: None	Normal black-and-white image with no filter effects.
W: Yellow	The blue sky will look more natural, and the white clouds will look crisper.
OR: Orange	The blue sky will look slightly darker. The sunset will look more brilliant.
R: Red	The blue sky will look quite dark. Fall leaves will look crisper and brighter.
G: Green	Skin tones and lips will look fine. Tree leaves will look crisper and brighter.

☑ Setting the [Contrast] to the plus side will make the filter effect more pronounced.

Toning Effect

By applying a toning effect, you can create a monochrome image in that color. It can make the image look more impressive.

The following can be selected: [N:None] [S:Sepia] [B:Blue] [P:Purple] [G:Green].

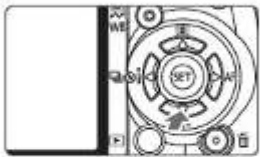



Parameter Settings and Effects

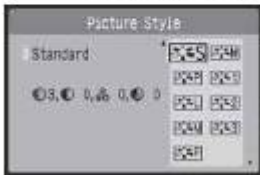
- Sharpness**
Adjusts the sharpness of the image.
To make it less sharp, set it toward the [0] end. The closer it is to [0], the softer the image will look.
To make it sharper, set it toward the [7] end. The closer it is to [7], the sharper the image will look.
- Contrast**
Adjusts the image contrast and the vividness of colors.
To decrease the contrast, set it toward the minus end. The closer it is to [0], the blander the image will look.
To increase the contrast, set it toward the plus end. The closer it is to [7], the crisper the image will look.
- Saturation**
The image's color saturation can be adjusted.
To decrease the color saturation, set it toward the minus end. The closer it is to [0], the lighter the colors will look.
To increase the color saturation, set it toward the plus end. The closer it is to [7], the more saturated the colors will look.
- Color tone**
The skin tones can be adjusted.
To make the skin tone redder, set it toward the minus end. The closer it is to [0], the redder the skin tone will look.
To make the skin tone less red, set it toward the plus end. The closer it is to [7], the more yellow the skin tone will look.

Selecting a Picture Style [★]

By selecting a Picture Style, you can obtain the desired image effects matching your photographic expression or the subject.



- 1 Press the **<▼>**  button.
▶ [Picture Style] will appear.



- 2 Select a Picture Style.
 - Press the **<▲>** key to select the Picture Style, then press **<SET>**.
- 3 Take the picture.
 - Focus and press the shutter button completely. The picture will be taken with the selected Picture Style applied.

Picture Style Effects

Standard

The image looks vivid, sharp, and crisp. This is a general-purpose Picture Style suitable for most scenes.

Portrait

For nice skin tones. The image looks slightly sharp and crisp. Effective for close-ups of women or children. This Picture Style is also selected automatically when the Mode Dial is set to **<P>**. By changing the [Color tone] (p.83), you can adjust the skin tone.

Landscape

For vivid blues and greens, and very sharp and crisp images. Effective for impressive landscapes. This Picture Style is also selected automatically when the Mode Dial is set to **<L>**.

Selecting a Picture Style [★]

Neutral


This is for users who prefer to process images with their personal computer. For natural colors and subdued images.

Faithful

This is for users who prefer to process images with their personal computer. When the subject is captured under a color temperature of 5200K, the color is adjusted colorimetrically to match the subject's color. The image is dull and subdued.

Monochrome

For black-and-white images.

 Other than with **[RAW]**, the black-and-white image cannot be reverted to color. If you want to later shoot pictures in color, make sure the [Monochrome] setting has been canceled. When [Monochrome] is selected, **<B/W>** will appear in the viewfinder.

User Def. 1-3

You can register your own Picture Style settings for [Portrait], [Landscape], etc. (p.85) Any User Defined Picture Style which has not been set will have the same settings as the Standard Picture Style.

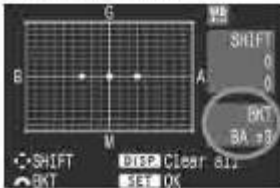
Class Notes:

White Balance Auto Bracketing

With just one shot, three images having a different color tone can be recorded simultaneously. Based on the color temperature of the current white balance setting, the image will be bracketed with a blue/amber bias or magenta/green bias. This is called white balance bracketing (WB-BKT). White balance bracketing is possible up to ± 3 levels in single-level increments.



B/A bias ± 3 levels



Set the white balance bracketing amount.

- In step 2 for white balance correction, when you turn the dial, the "■" mark on the screen will change to "■■■" (3 points). Turning the dial to the right sets the B/A bracketing, and turning it to the left sets the M/G bracketing.
- ▶ On the right side of the screen, "BKT" indicates the bracketing direction and the bracketing amount is also displayed.
- Pressing the <DISP.> button will cancel all the [WB SHIFT/BKT] settings.
- Press <SET> to exit the setting and return to the menu.

Bracketing Sequence

The images will be bracketed in the following sequence: 1. Standard white balance, 2. Blue (B) bias, and 3. Amber (A) bias, or 1. Standard white balance, 2. Magenta (M) bias, 3. Green (G) bias.

- During WB bracketing, the maximum burst for continuous shooting will be lower and the number of possible shots will also decrease to one-third the normal number. If the [Custom Functions (C.Fn)] menu's [High ISO speed noise reduction] (p.155) is set to [1: On], WB bracketing will not be possible.
- Since three images are recorded for one shot, the card will take longer to record the shot.
- "BKT" stands for Bracketing.

Class Notes:

MENU White Balance Correction ★

You can correct the white balance that has been set. This adjustment will have the same effect as using a commercially-available color temperature conversion filter or color compensating filter. Each color can be corrected to one of nine levels. This is for advanced users who are familiar with using color temperature conversion or color compensating filters.

White Balance Correction



1 Select [WB SHIFT/BKT].

- Under the [WB] tab, select [WB SHIFT/BKT], then press <SET>.
- ▶ The WB correction/WB bracketing screen will appear.



Sample setting: A2, G1

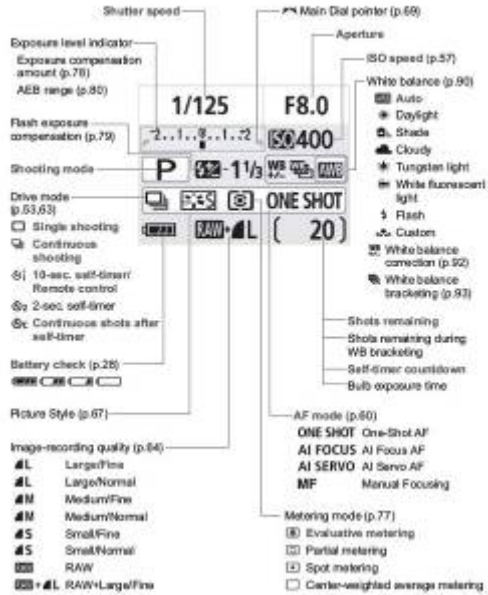


2 Set the white balance correction.

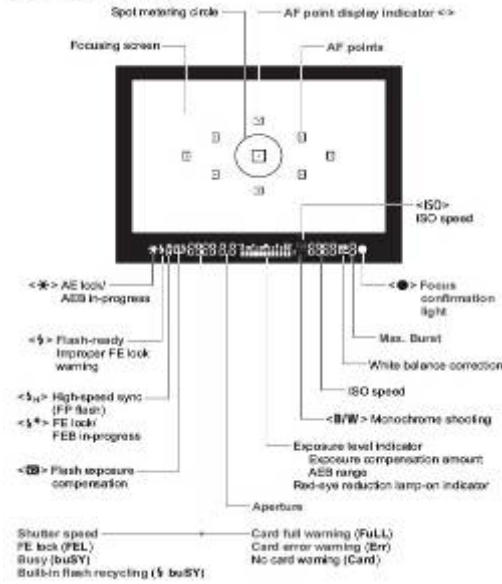
- Press the key to move the "■" mark to the desired position.
- B is for blue, A is amber, M is magenta, and G is green. The color in the respective direction will be corrected.
- On the upper right, "SHIFT" indicates the direction and correction amount.
- Pressing the <DISP.> button will cancel all the [WB SHIFT/BKT] settings.
- Press <SET> to exit the setting and return to the menu.

- During the white balance correction, <WB> will be displayed in the viewfinder and on the LCD monitor.
- One level of the blue/amber correction is equivalent to 5 mireds of a color temperature conversion filter. (Mired: A measurement unit indicating the density of a color temperature conversion filter.)

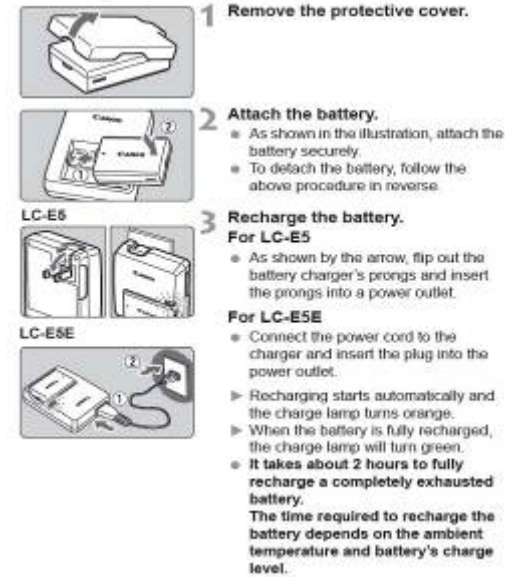
Shooting Settings Display



Viewfinder Information



Recharging the Battery



Extra information for students to try out; try to keep a clear record of your experiments using the differing facilities on the 450 d and document these within your workbook.

Handy Features

MENU Silencing the Beeper

You can prevent the beeper from sounding when focus is achieved or during self-timer operation.



Under the [D] tab, select [Beep], then press \leftarrow. Select [OFF], then press \rightarrow.

MENU Card Reminder

This prevents shooting if there is no card in the camera.



Under the [D] tab, select [Shoot w/o card], then press \leftarrow. Select [OFF], then press \rightarrow. If there is no card installed and you press the shutter button, "Card" will be displayed in the viewfinder, and you cannot release the shutter.

MENU Setting the Image Review Time

How long the image is displayed on the LCD monitor immediately after capture can be set. If [OFF] is set, the image review will not be displayed. If [Hold] is set, the image review will be displayed up until the [Auto power off] time. The LCD monitor display will turn off when your eyes nears the viewfinder eyepiece, press the shutter button, or do any camera operation.



Under the [D] tab, select [Review time], then press \leftarrow. Set the time, then press \rightarrow.

MENU Setting the Auto Power-off Time

To save battery power, the camera turns off automatically after the set time of idle operation elapses. You can set this auto power-off time. When the camera has turned off due to auto power off, you can wake up the camera by pressing the shutter button halfway or any of the following buttons: \leftarrowMENU> \leftarrowDISP> \rightarrow \rightarrow etc.

If [OFF] has been set, either turn off the camera yourself or press the \leftarrowDISP> button to turn off the shooting settings display to save battery power. If [OFF] has been set and the camera is not used for 30 min., the LCD monitor will turn off automatically. To turn on the LCD monitor again, press the \leftarrowDISP> button.



Under the [F] tab, select [Auto power off], then press \leftarrow. Set the time, then press \rightarrow.

MENU Setting the LCD Monitor Brightness

You can adjust the brightness of the LCD monitor to make it easier to read.



Under the [F] tab, select [LCD brightness], then press \leftarrow. With the adjustment screen displayed, press the \leftarrow \rightarrow key to adjust the brightness, then press \rightarrow.



When checking the exposure of an image, prevent the ambient light from affecting the reviewed image. Also, setting the LCD monitor brightness at the center of the adjustment scale is recommended.

MENU File Numbering Methods

The file number is like the frame number on a roll of film. The captured images are assigned a sequential file number from 0001 to 9999 and saved in one folder. You can change how the file number is assigned. The file number will appear on the personal computer in this format: IMG_0001.JPG.

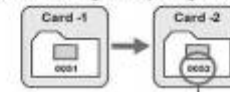


Under the [F] tab, select [File numbering], then press \leftarrow. Follow the steps below to select a file numbering method, then press \rightarrow.

- [Continuous]:** The file numbering continues in sequence even after the card is replaced.

Even after you replace the card, the file numbering continues in sequence up to 9999. This is convenient when you want to save the images numbered anywhere between 0001 to 9999 in one folder in your personal computer. However, if the replacement card contains images recorded previously, the file numbering of the new images might continue from the file numbering of the existing images in the card. If you want to use continuous file numbering, you should use a newly-formatted card each time.

File numbering after replacing the card



Next sequential file number

Class Notes:

MENU Auto Image Rotation



Vertical images are rotated automatically so they are displayed vertically on the camera's LCD monitor and on the personal computer. The setting of this feature can be changed.



Under the [I] tab, select [Auto rotate], then press <OK>. Follow the steps below to select the desired setting, then press <OK>.

- [On] : The vertical image is automatically rotated on both the camera's LCD monitor and on the personal computer.
- [On] : The vertical image is automatically rotated only on the personal computer.
- [Off] : The vertical image is not automatically rotated at all.

FAQ

- **The vertical image is not rotated during the image review immediately after it is captured.**
The vertical image is rotated only for playback.
- **[On] is set, but the image does not rotate during playback.**
Auto rotate will not work with vertical images captured while [Auto rotate] was set to [Off]. Also, if the vertical image is taken while the camera is pointed up or down, the image might not rotate for playback. In such a case, see "Rotating the Image" on page 126.
- **On the camera's LCD monitor, I want to rotate an image captured when [On] had been set.**
Set [On], then playback the image. It will be rotated.
- **The vertical image does not rotate on the personal computer screen.**
The software used is not compatible with image rotation. Use the camera's bundled software instead.

Preparing for Live View Shooting *

Set the camera for Live View shooting.

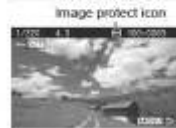


- Set the shooting mode.**
 - Set the shooting mode to a Creative Zone mode.
 - **Live View shooting does not work in Basic Zone modes.**
- Select [Live View function settings].**
 - Under the [I] tab, select [Live View function settings], then press <OK>.
- Select [Live View shoot.].**
 - Select [Live View shoot.], then press <OK>. Select [Enable], then press <OK>.
- Exit the menu.**
 - Press the <MENU> button to exit.
- Display the Live View image.**
 - Press <LIVE VIEW>.
 - The Live View image will appear on the LCD monitor.
 - The Live View image will reflect the brightness level of the actual image you capture.
 - If the image is too bright, turn the <W> dial to the right. If it is too dark, turn the <W> dial to the left.



MENU Protecting Images

Protecting the image prevents it from being erased accidentally.



- Select [Protect images].**
 - Under the [I] tab, select [Protect images], then press <OK>.
 - The protect setting screen will appear.
- Protect the image.**
 - Press the <LIVE VIEW> key to select the image to be protected, then press <OK>.
 - When an image is protected, the <LIVE VIEW> icon will appear on the screen.
 - To cancel the image protection, press <LIVE VIEW> again. The <LIVE VIEW> icon will disappear.
 - To protect another image, repeat step 2.
 - To exit the image protection, press the <MENU> button. The menu will reappear.

⚠ If you format the card, the protected images will also be erased.

- Once an image is protected, it cannot be erased by the camera's erase function. To erase a protected image, you must first cancel the protection.
- If you erase all the images (p. 130), only the protected images will remain. This is convenient when you want to erase unnecessary images all at once.

Remote Control Shooting

Remote Controller RC-1/RC-5 (Sold separately)

Remote controller to shoot wirelessly up to about 5 meters/16.4 feet from the camera. The RC-1 can trip the shutter immediately or after a 2-sec. delay, and the RC-5 trips the shutter after a 2-sec. delay.



- Set the self-timer to <5> (p.53)
- Point the remote controller toward the camera's remote control sensor and press the transmit button.
- The camera will autofocus.
- When focus is achieved, the self-timer lamp will light and the picture will be taken.

⚠ Camera misoperation may occur near certain types of fluorescent lights. During wireless remote control, try to keep the camera away from fluorescent light.

Remote Switch RS-60E3 (Sold separately)

Remote switch with a 60 cm/2.0 feet cord for pressing the shutter button halfway or completely. It connects to the camera's remote control terminal.

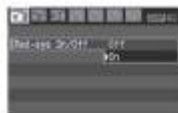


Shooting Tips

- **If the subject is far away, increase the ISO speed.**
This will increase the flash range.
- **In bright light, decrease the ISO speed.**
If the exposure setting in the viewfinder blinks, decrease the ISO speed.
- **Detach the lens hood and keep at least 1 meter/3.3 feet away from the subject.**
If the lens hood is attached or if you are too close to the subject, the bottom portion of the picture might turn out dark. For important shots, check the image on the LCD monitor to make sure the flash exposure looks good (not dark at the bottom).

MENU Using Red-eye Reduction

Using the red-eye reduction lamp before taking a flash picture can reduce red eye. Red-eye reduction will work in any shooting mode except <A>, <S>, <M>, <P>.



- Under the [I] tab, select [Red-eye On/Off], then press <OK>. Select [On], then press <OK>.
- For flash photography, when you press the shutter button halfway, the red-eye reduction lamp will light. Then when you press the shutter button completely, the picture will be taken.

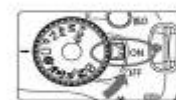
- The red-eye reduction feature is most effective when the subject looks at the red-eye reduction lamp, when the room is well lit, or when you go closer to the subject.
- When you press the shutter button halfway, the viewfinder display on the bottom will gradually turn off. For best results, take the picture after this display turns off.
- The effectiveness of red-eye reduction varies from subject to subject.

Transferring Images to a Personal Computer

By connecting the camera to a personal computer, you can transfer images from the camera's card by operating the camera. This is called direct image transfer.

- **Before connecting the camera to the personal computer, be sure to install the bundled software (EOS DIGITAL Solution Disk/CD-ROM) in the personal computer.** For instructions on how to install the software, see "CD-ROM Guide."

Preparation for Image Transfer



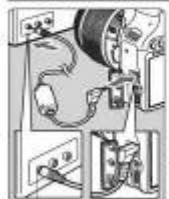
- Connect the camera to the personal computer.**
 - Turn off the camera's power switch before connecting it.
 - Use the interface cable that came with the camera.
 - When connecting the cable plug to the camera's <C> terminal, the cable plug's <C> icon must face the front side of the camera.
 - To the personal computer's USB port, connect the plug on other end of the cable.
- Set the camera's power switch to <ON>.**
 - When the program selection screen appears on the personal computer, select [EOS Utility]. When the camera model selection screen appears, select your camera's model.
 - The [EOS Utility] screen will appear on the computer, and the direct image transfer screen will appear on the camera's LCD monitor.

Extra information for students to try out; try to keep a clear record of your experiments using the differing facilities on the 450 d and document these within your workbook.

Class Notes:

Viewing the Images on TV

With the video cable provided with the camera, you can connect the camera to a TV set and view images on the TV screen. Turn off the camera and the television before connecting them.



1 Connect the camera to the TV.

- Open the camera's terminal cover.
- Use the video cable (provided) to connect the camera's <VIDEO> video OUT terminal to the TV monitor's VIDEO IN terminal.
- Insert the cable plug all the way in.

2 Turn on the TV and switch the TV's line input to VIDEO IN.

3 Set the camera's power switch to <ON>.

4 Press the <DISP> button.

- The image will appear on the TV screen. (Nothing will be displayed on the camera's LCD monitor.)

- After you finish, set the camera's power switch to <OFF>, turn off the TV, then disconnect the video cable.

- If the video system format does not match the TV's, the images will not be displayed properly. Set the proper video system format with [VF Video system].
- Do not use any video cable other than the one provided. Images might not be displayed if you use a different video cable.
- Depending on the TV monitor, part of the image might be cut off.

Shooting Tips

- When using a high aperture, note that camera shake can occur in low light scenes.**

A higher aperture will make the shutter speed slower. Under low light, the shutter speed can be as long as 30 sec. In such cases, increase the ISO speed and hold the camera steady or use a tripod.

- The depth of field depends not only on the aperture, but also the lens and subject distance.**

Since wide-angle lenses have a wide depth of field, you need not set a high aperture to obtain a sharp picture from the foreground to the background. On the other hand, a telephoto lens has a narrow depth of field.

And the closer the subject, the narrower the depth of field. A farther subject will have a wider depth of field.

- Set the aperture so that the shutter speed display does not blink in the viewfinder.**

If you press the shutter button halfway and change the aperture while the shutter speed is displayed, the shutter speed display will also change to maintain the same exposure (amount of light reaching the image sensor). If you exceed the adjustable shutter speed range, the shutter speed display will blink to indicate that the standard exposure cannot be obtained.

If the picture will be too dark, the 30" (30 sec.) shutter speed display will blink. If this happens, turn the <DISP> dial to the left to set a lower aperture or increase the ISO speed.

If the picture will be too bright, the 4000 (1/4000 sec.) shutter speed display will blink. If this happens, turn the <DISP> dial to the right to set a higher aperture or decrease the ISO speed.



Tips for Using the Battery and Charger

- Recharge the battery on the day before or on the day it is to be used.**

Even during non-use or storage, a charged battery will gradually discharge and lose its power.

- After recharging the battery, detach it and unplug the charger from the power outlet.**

- When not using the camera, remove the battery.**

If the battery is left in the camera for a prolonged period, a small amount of power current is released, resulting in excess discharge and shorter battery life. Store the battery with the protective cover attached. Storing the battery after it is fully charged can lower the battery's performance.

- The battery charger can also be used in foreign countries.**

The battery charger is compatible with a 100 V AC to 240 V AC 50/60 Hz power source. If necessary, attach a commercially-available plug adapter for the respective country. Do not attach any portable voltage transformer to the battery charger. Doing so can damage the battery charger.

- If the battery becomes exhausted quickly even after being fully charged, the battery has worn out.**

Purchase a new battery.

Setting the Auto Power-off Time

To save battery power, the camera turns off automatically after the set time of idle operation elapses. You can set this auto power-off time.

When the camera has turned off due to auto power off, you can wake up the camera by pressing the shutter button halfway or any of the following buttons: <MENU> <DISP> <DISP> <DISP> etc.

If [OFF] has been set, either turn off the camera yourself or press the <DISP> button to turn off the shooting settings display to save battery power. If [ON] has been set and the camera is not used for 30 min., the LCD monitor will turn off automatically. To turn on the LCD monitor again, press the <DISP> button.



Under the [VF] tab, select [Auto power off], then press <DISP>. Set the time, then press <DISP>.

Setting the LCD Monitor Brightness

You can adjust the brightness of the LCD monitor to make it easier to read.



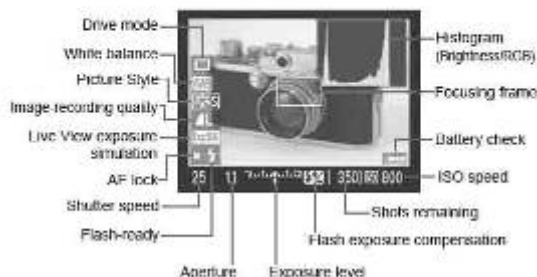
Under the [VF] tab, select [LCD brightness], then press <DISP>. With the adjustment screen displayed, press the <DISP> key to adjust the brightness, then press <DISP>.



When checking the exposure of an image, prevent the ambient light from affecting the reviewed image. Also, setting the LCD monitor brightness at the center of the adjustment scale is recommended.

About the Information Display

- Each time you press the <DISP> button, the information display will change.



Shooting Tips

- To freeze the action or moving subject.**

Use a fast shutter speed such as 1/500 sec. to 1/4000 sec.

- To blur a running child or animal giving the impression of fast movement.**

Use a medium shutter speed such as 1/30 sec. to 1/250 sec. Follow the moving subject through the viewfinder and press the shutter button to take the picture. If you use a telephoto lens, hold it steady to prevent camera shake.

- How to blur a flowing river or water fountain.**

Use a slow shutter speed to 1/15 sec. or slower. Use a tripod to prevent camera shake.

- Set the shutter speed so that the aperture display does not blink in the viewfinder.**

If you press the shutter button halfway and change the shutter speed while the aperture is displayed, the aperture display will also change to maintain the same exposure (amount of light reaching the image sensor). If you exceed the adjustable aperture range, the aperture display will blink to indicate that the standard exposure cannot be obtained.

If the exposure will be too dark, the lowest aperture will blink. If this happens, turn the <DISP> dial to the left to set a slower shutter speed or increase the ISO speed.

If the exposure will be too bright, the highest aperture will blink. If this happens, turn the <DISP> dial to the right to set a faster shutter speed or decrease the ISO speed.



Using the built-in flash

To obtain a correct flash exposure, the flash output will be set to match the automatically-set aperture (autoflash exposure). The flash sync speed can be set from 30 sec. to 1/200 sec.

Extra information for students to try out; try to keep a clear record of your experiments using the differing facilities on the 450 d and document these within your workbook.