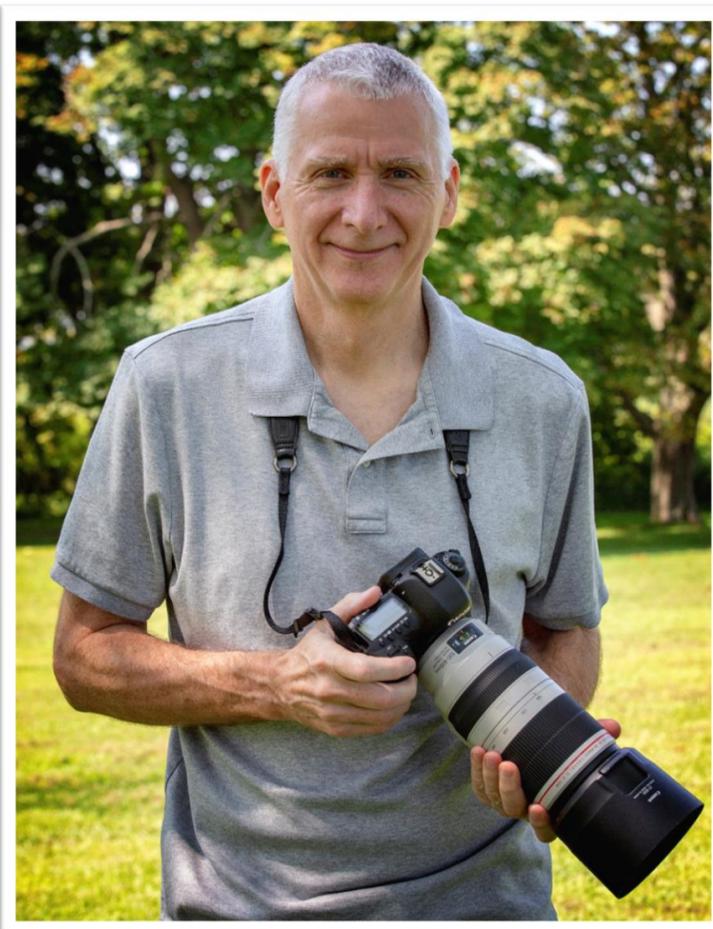


Leveraging Your Camera's Intelligence



Chane Cullens

Master Member, New England Camera Club Council (MNEC)

Where To Start?

The camera manual?
The internet library?
Ask a friend?
A specific task?



Advanced User Guide



Focus
Landscape Example

Motion
Action Example

Light
Family Example

Auto
Camera Example

Where To Start?

The camera manual?
The internet library?
Ask a friend?
A specific task?

Today let's map camera
smarts to accomplishing tasks



Advanced User Guide



Plan

Often, “basics” workshops focus on the camera buttons and not the goal of capturing better photos. Instead, this presentation focuses on capturing better photos in everyday situations. Along the way, you will learn a lot about your camera settings and how to better leverage camera capabilities to create better results.

Objectives

- Landscape Photos, Focusing - Choosing what should be in focus and how much should be in focus
- Action Photos, Motion - Deciding to freeze or blur the action
- Family Photos, Lighting - Where lighting is often poor and eliminating distractions in your photo is
- More Camera Smarts - Using the built-in intelligent auto camera modes



Universe

Camera intelligence varies by brand and model and, at the same time, has considerable overlap. This presentation targets the 75% of the intelligence that probably exists within your camera. There will be lots of Canon examples since I've been using Canon SLR cameras since 1987. However, there is also a mix of Nikon and Fujifilm examples.

Was this photo taken with Manual or Smart camera settings?

- Long exposure for silky water
- Lots in focus
- Nice blue sky



Was this photo taken with Manual or Smart camera settings?

- Long exposure for silky water
- Lots in focus
- Nice blue sky

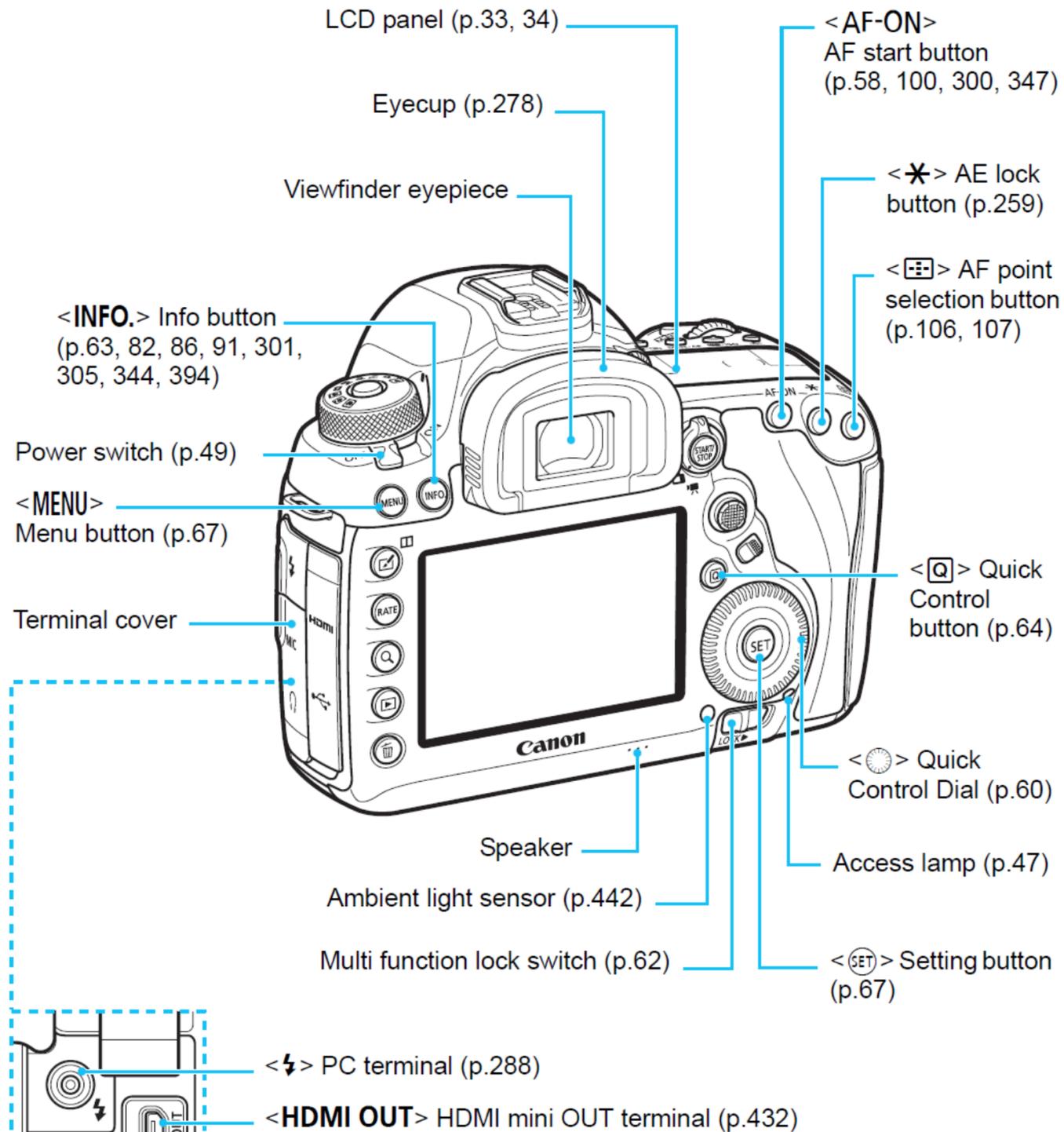


A large part of a camera's intelligence is metering the light then adjusting settings *you have not locked down*.

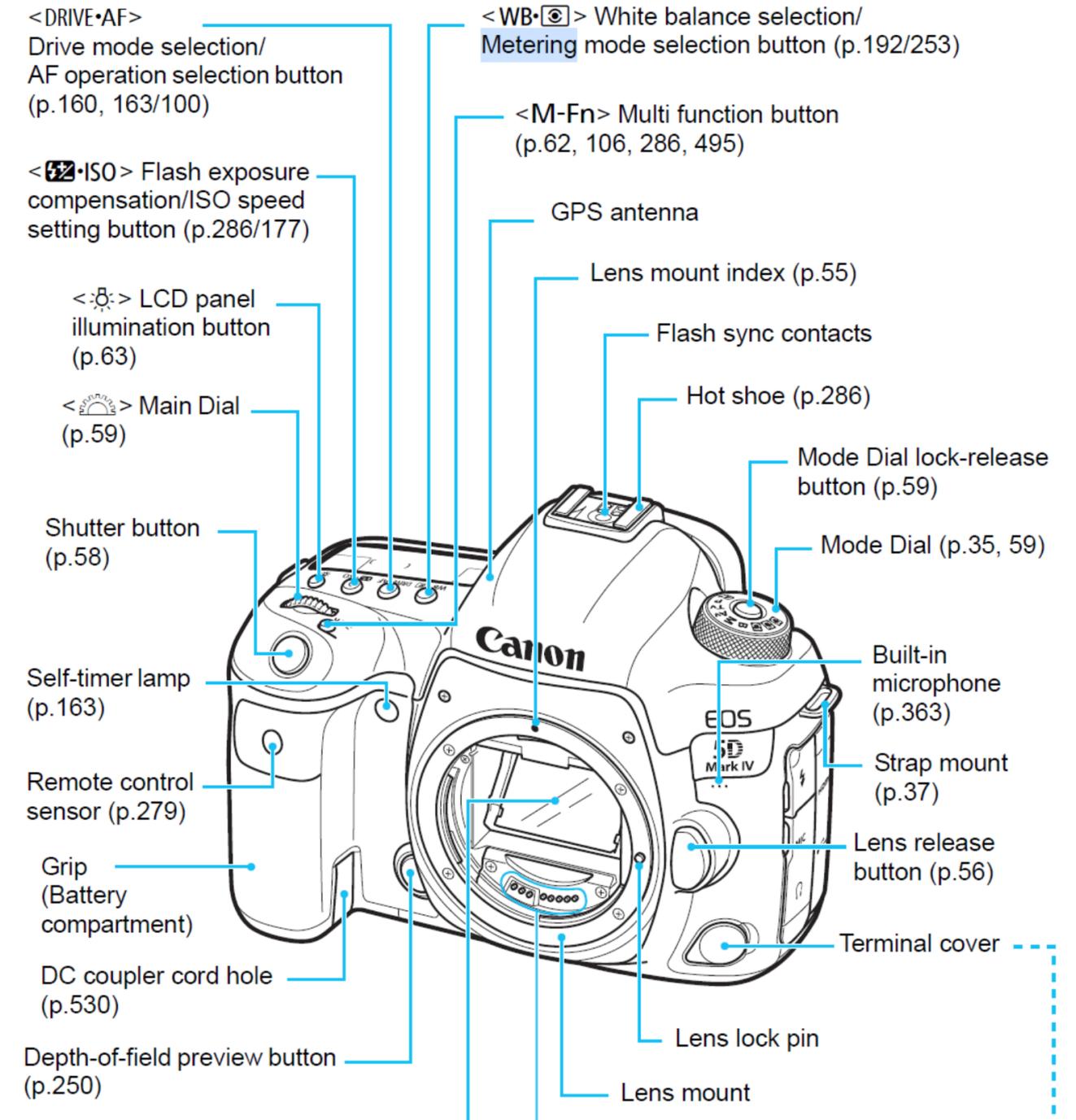
Work together to be smarter yet!

*I chose Aperture priority at f/22 and ISO 100
The Camera chose the Shutter Speed of 0.6 seconds*

Buttons, Buttons and more Buttons

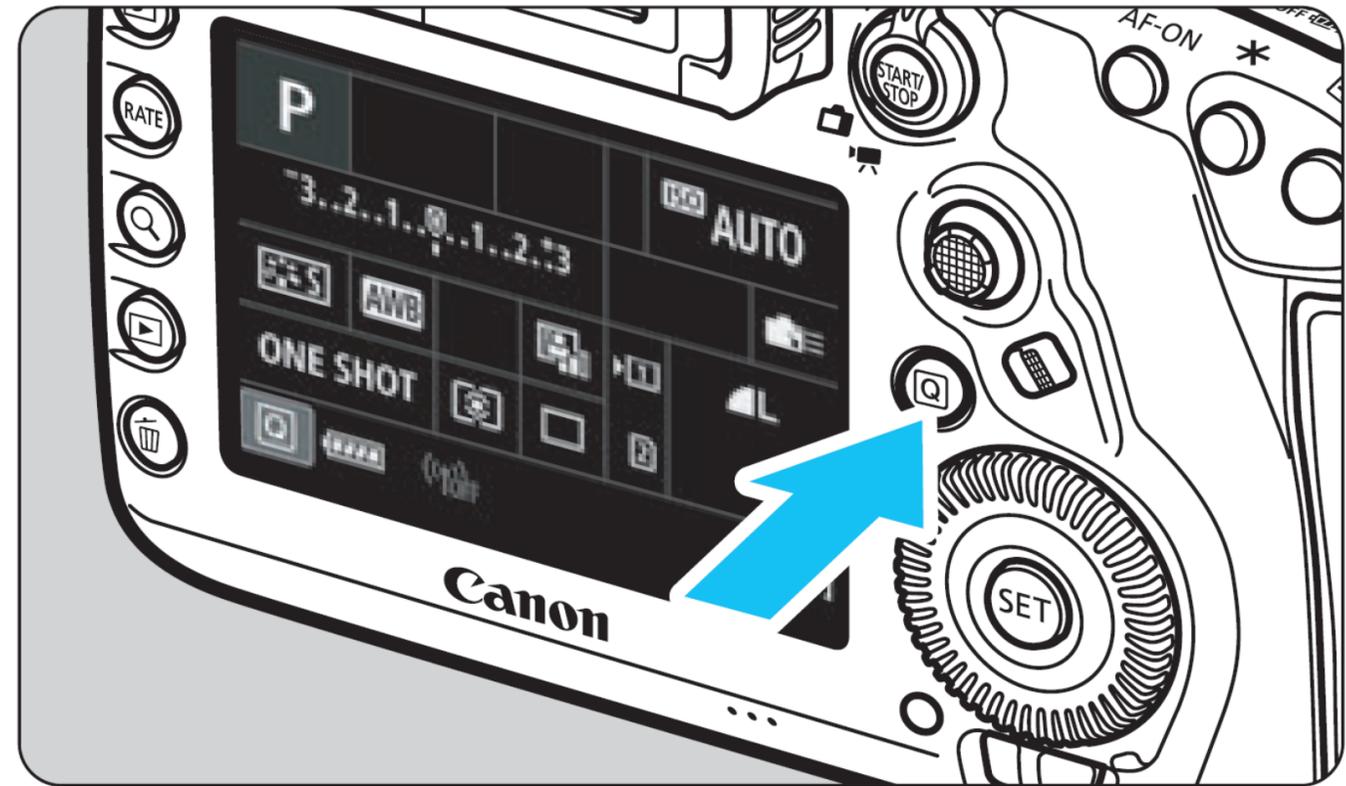


Nomenclature

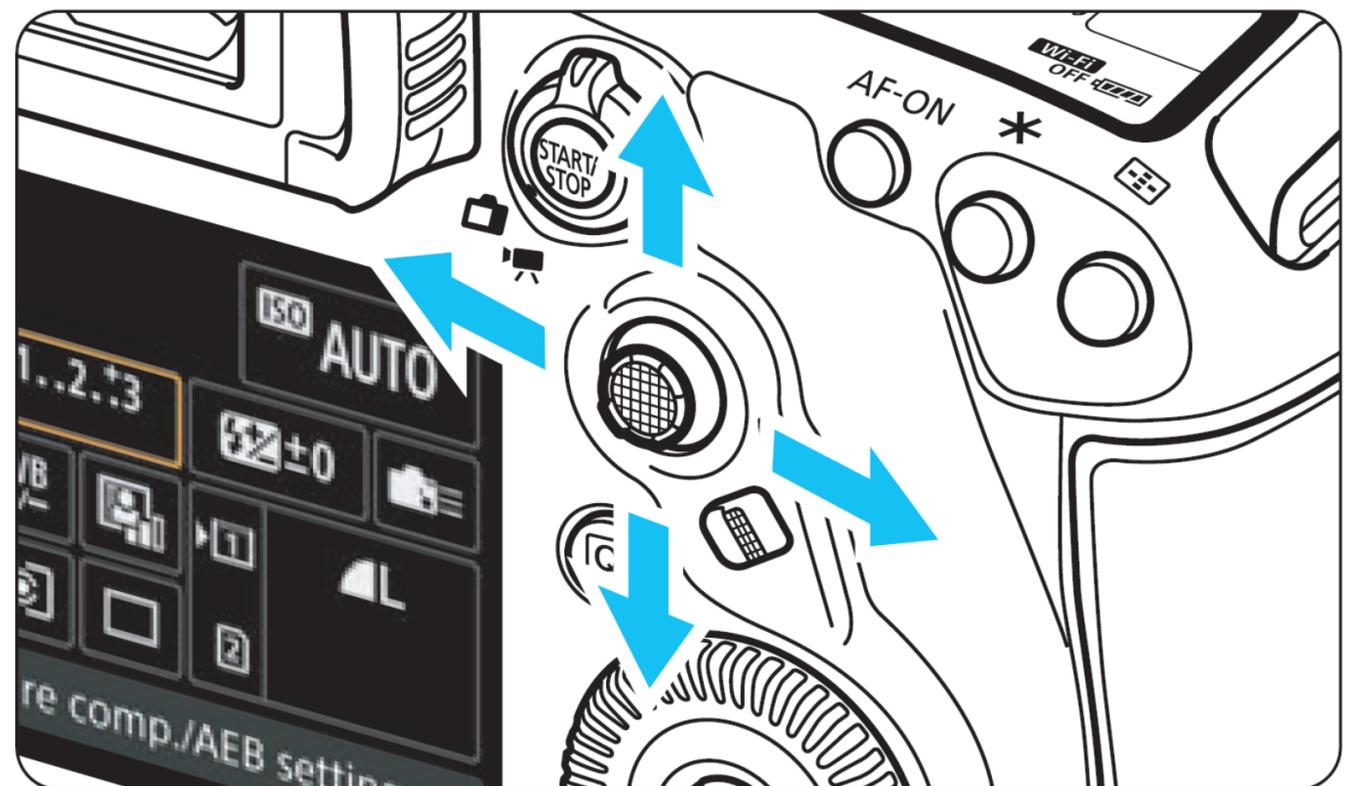


Nikon i, Canon Q, Fujifilm Q Buttons

Amazing power
without
remembering
which button
does what



1



2

Focus
Landscape Example

Motion
Action Example

Light
Family Example

Auto
Camera Example

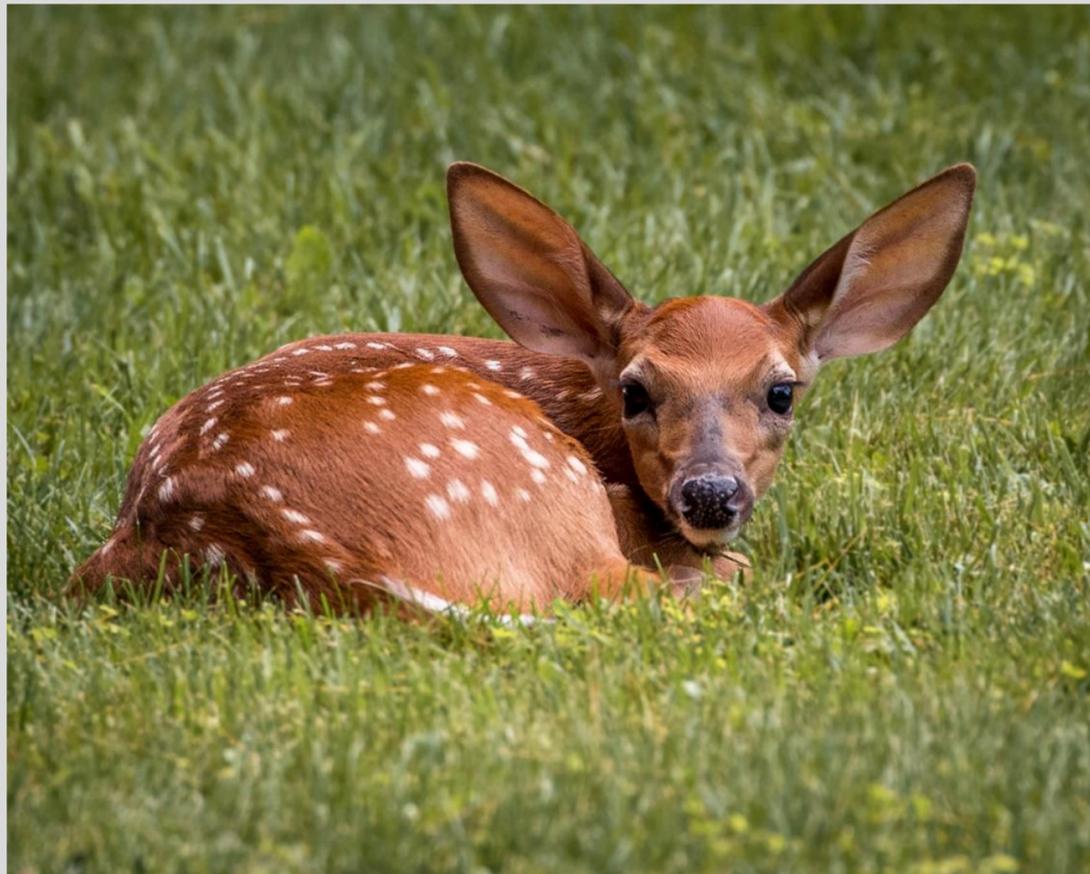
Focus

With a Landscape Example



1/10 second, f/14, ISO 400, 24mm

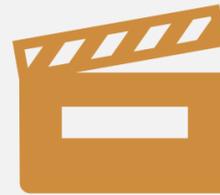
Choosing what should be in focus and how much should be in focus



1/500 second, f/6.3, ISO 800, 400mm



Focus Point Selection
Where is the sharpest spot?



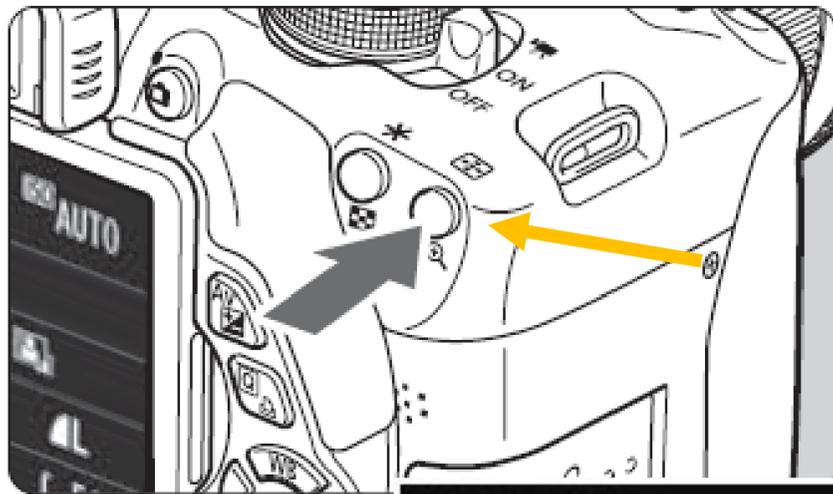
Directing Your Viewers
Using composition techniques.



Focus Range
How much should be in focus?

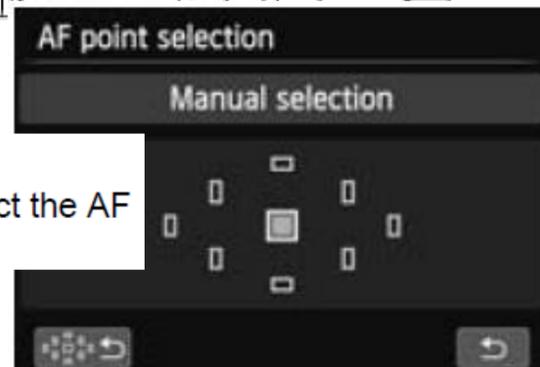
1. Landscape - choose a focus point about one-third of the way into the scene
2. Still life focus stacking - Without changing lights or moving the camera, move the focus point to each main item, reshoot
3. Tip - Set default autofocus point to high center to keep feet in the photo when focusing on the eyes

Canon

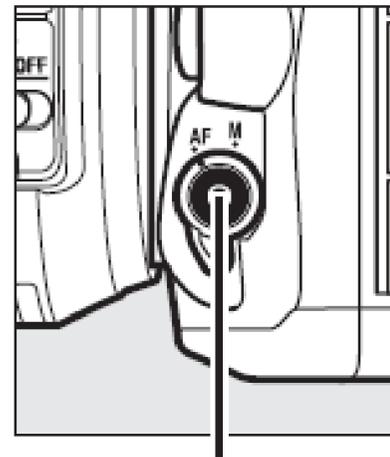


Select the AF point.

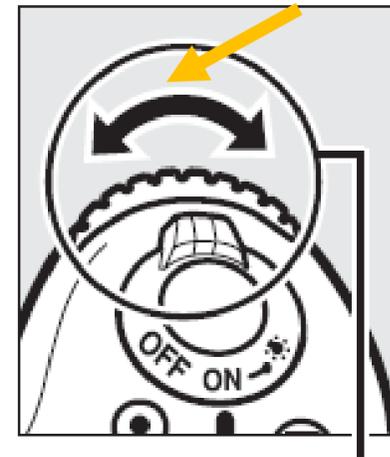
- Use the <directional pad> key to select the AF point.



Nikon

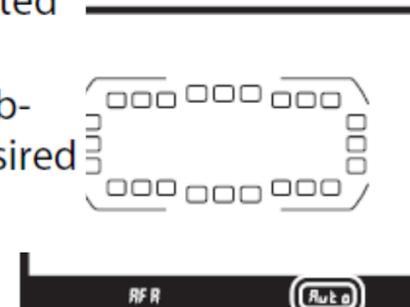


AF-mode button



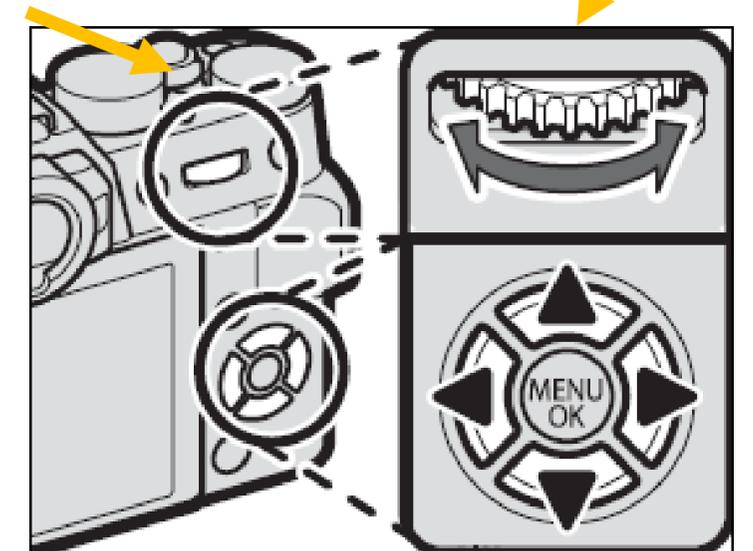
Sub-command dial

AF-area mode can be selected by pressing the AF-mode button and rotating the sub-command dial until the desired setting is displayed.

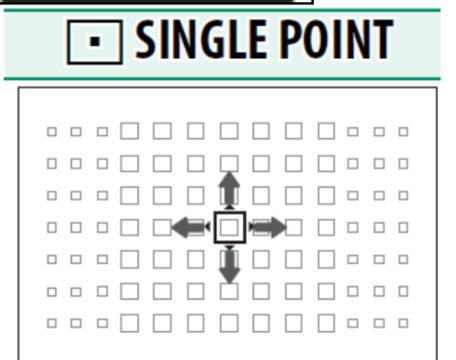


Viewfinder

Fujifilm



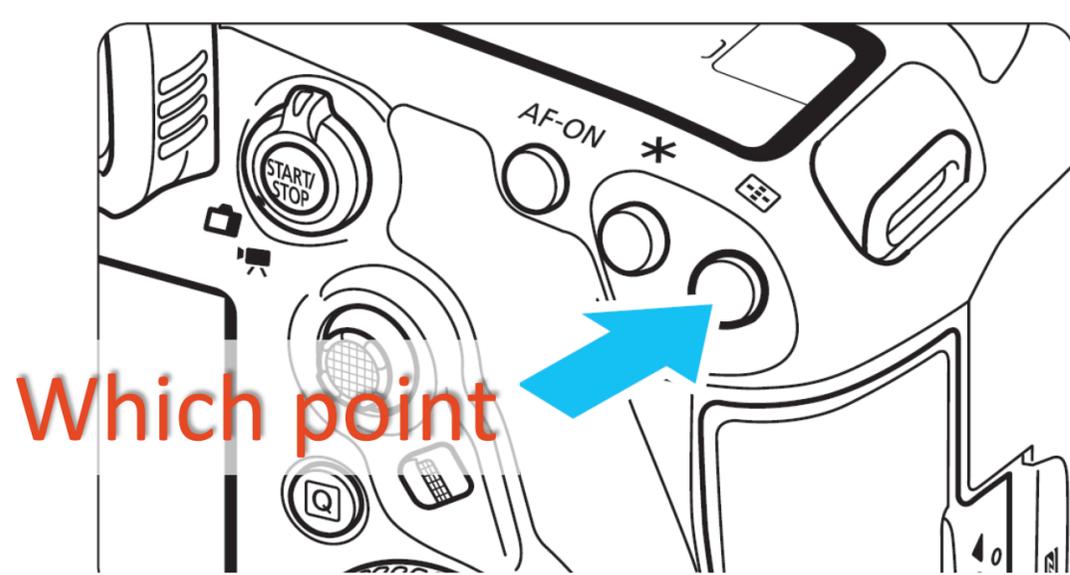
Select focus point



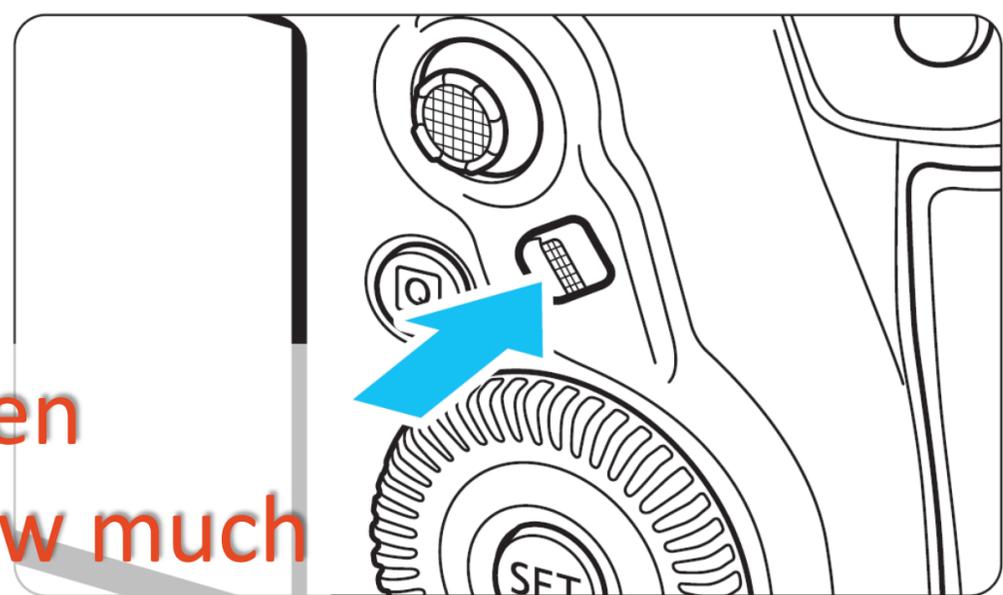
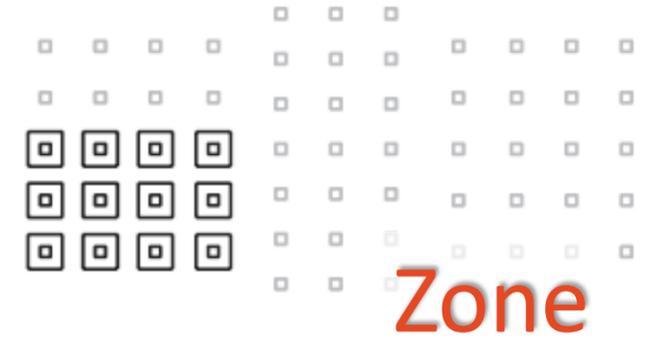
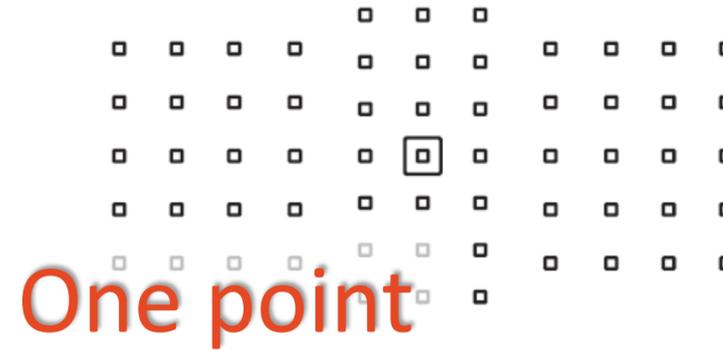
Landscape - Focus Point + Size of Focus Area

Focus smarts extends beyond “which point”, to how many points in the focus point area to use on most cameras

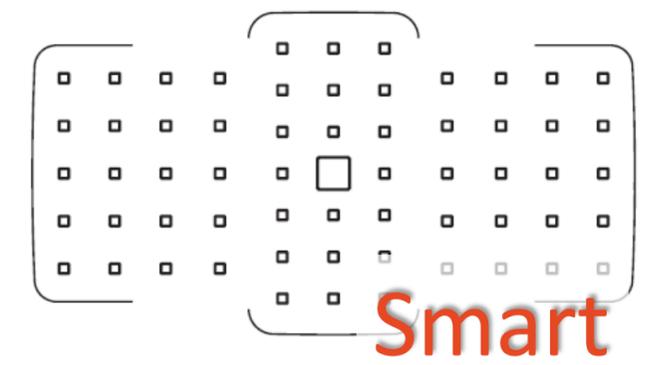
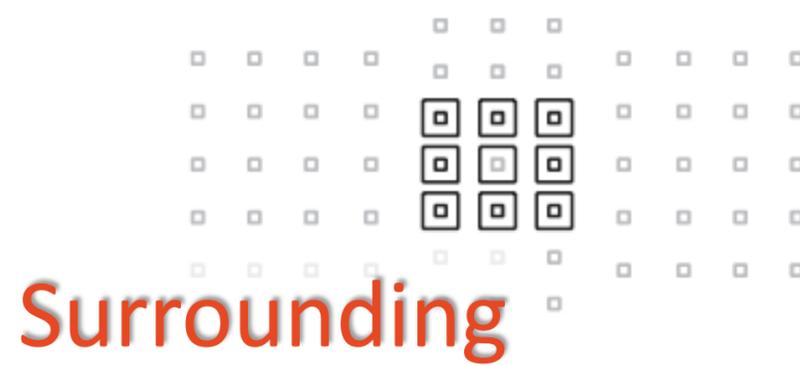
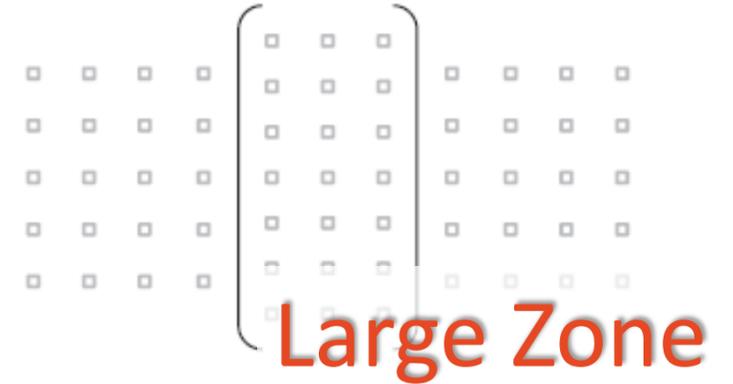
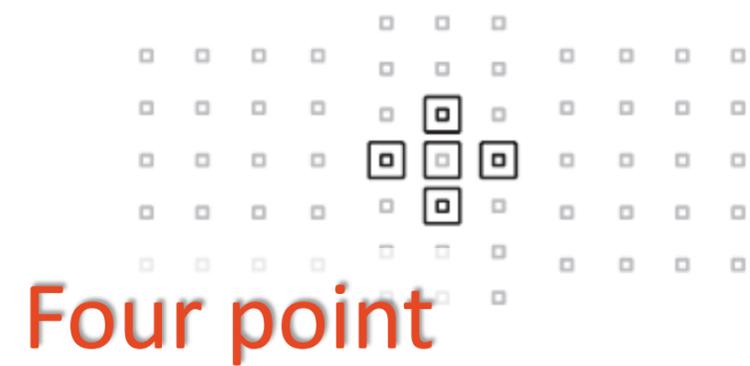
Canon



1

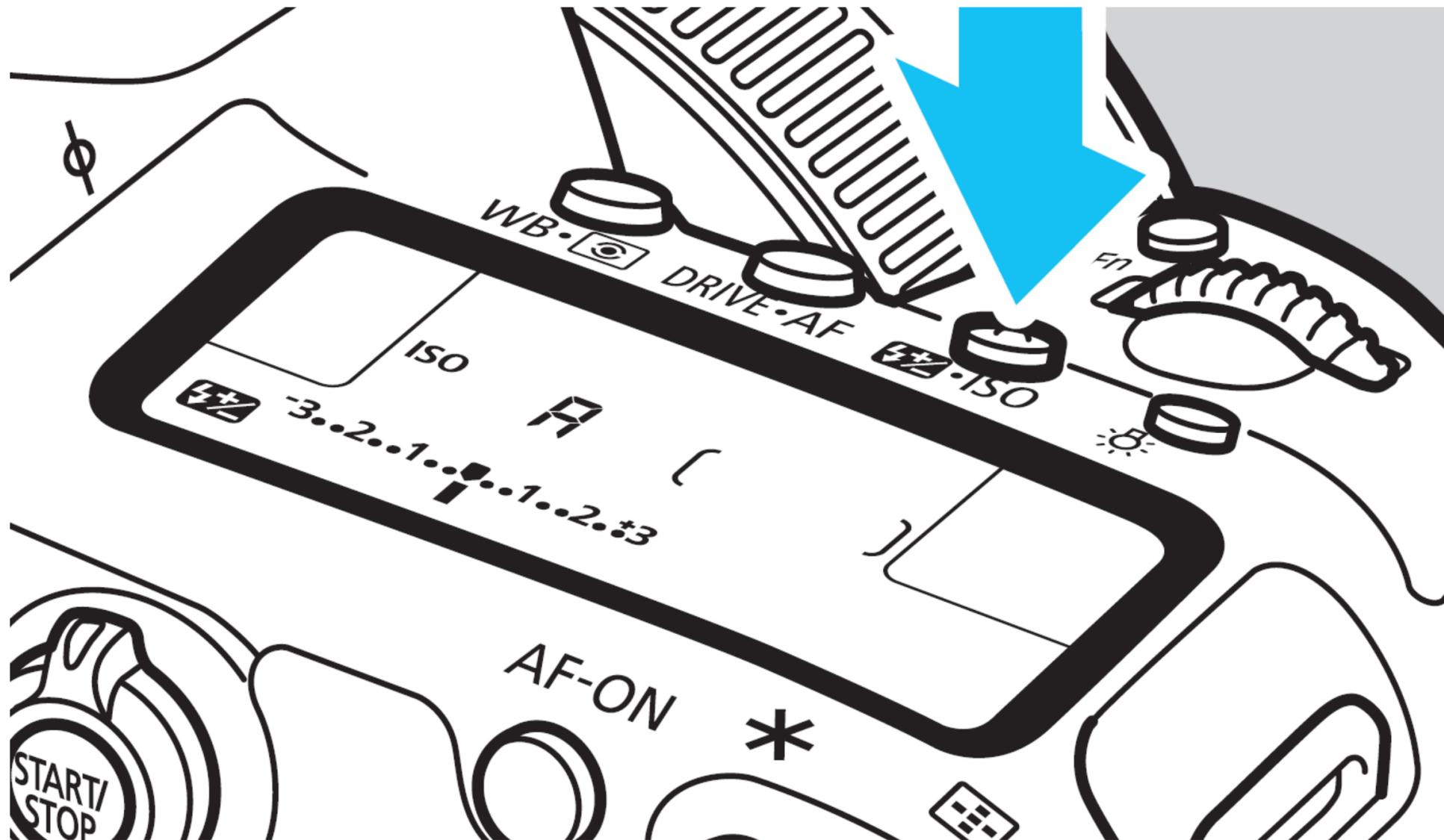


2



Handy Tip

If there is a button, it's quicker than using the touch screen or menus



Canon LCD buttons

- White Balance
- Metering Mode
- Drive Mode
- Auto Focus Mode
- ISO
- Flash Exposure Comp

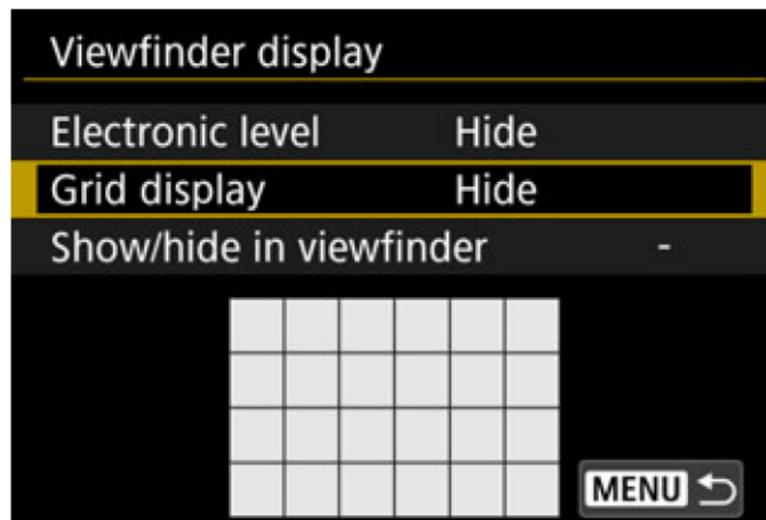
Landscape - Composition - Display Grid Lines



1

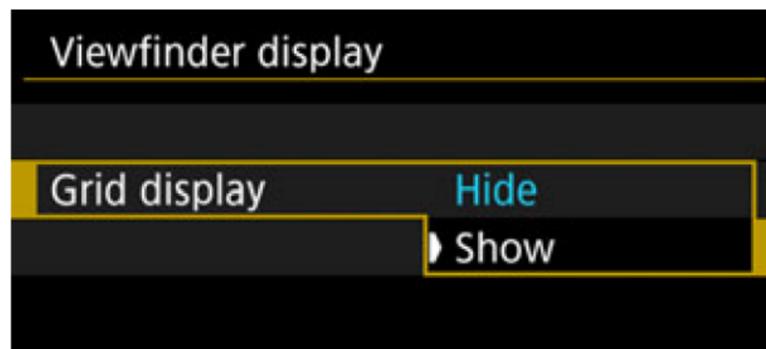
Select **[Viewfinder display]**.

- Under the [**Y**2] tab, select **[Viewfinder display]**, then press **< (SET) >**.



2

Select **[Grid display]**.



3

Select **[Show]**.

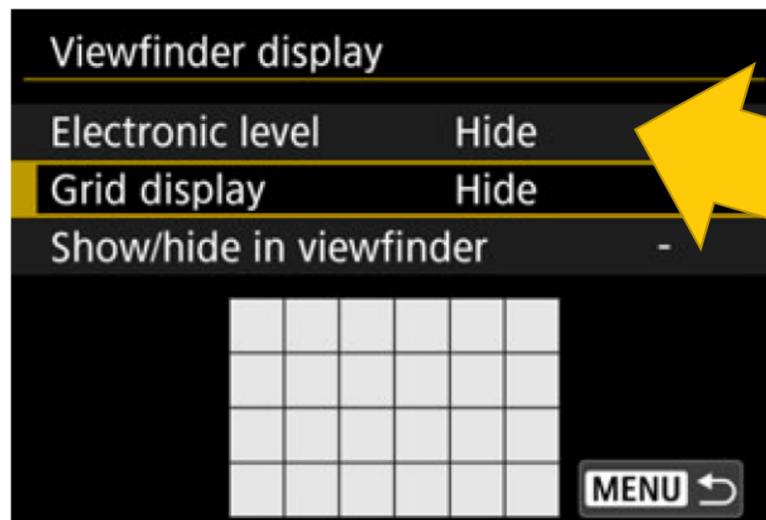
- When you exit the menu, the **grid** will appear in the viewfinder.

Providing immediate feedback on the *Rule of Thirds*

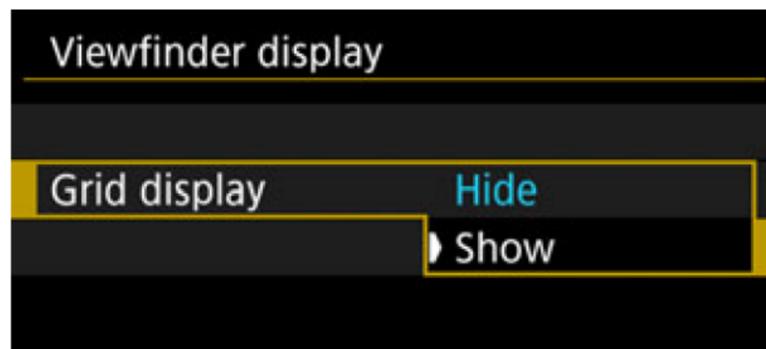
Landscape - Composition - Display Grid Lines



- 1 **Select [Viewfinder display].**
 - Under the [**Y** 2] tab, select **[Viewfinder display]**, then press **< (SET) >**.



- 2 **Select [Grid display].**



- 3 **Select [Show].**
 - ▶ When you exit the menu, the **grid** will appear in the viewfinder.

Providing immediate feedback on the *Rule of Thirds*

Did you notice the option to view a "level"? Rare, but handy!

Landscape - Range of Focus - Depth-of-Field Preview Button

The larger the Aperture number (F-stop)
the larger the number of items in focus

f/4 - a few items in focus

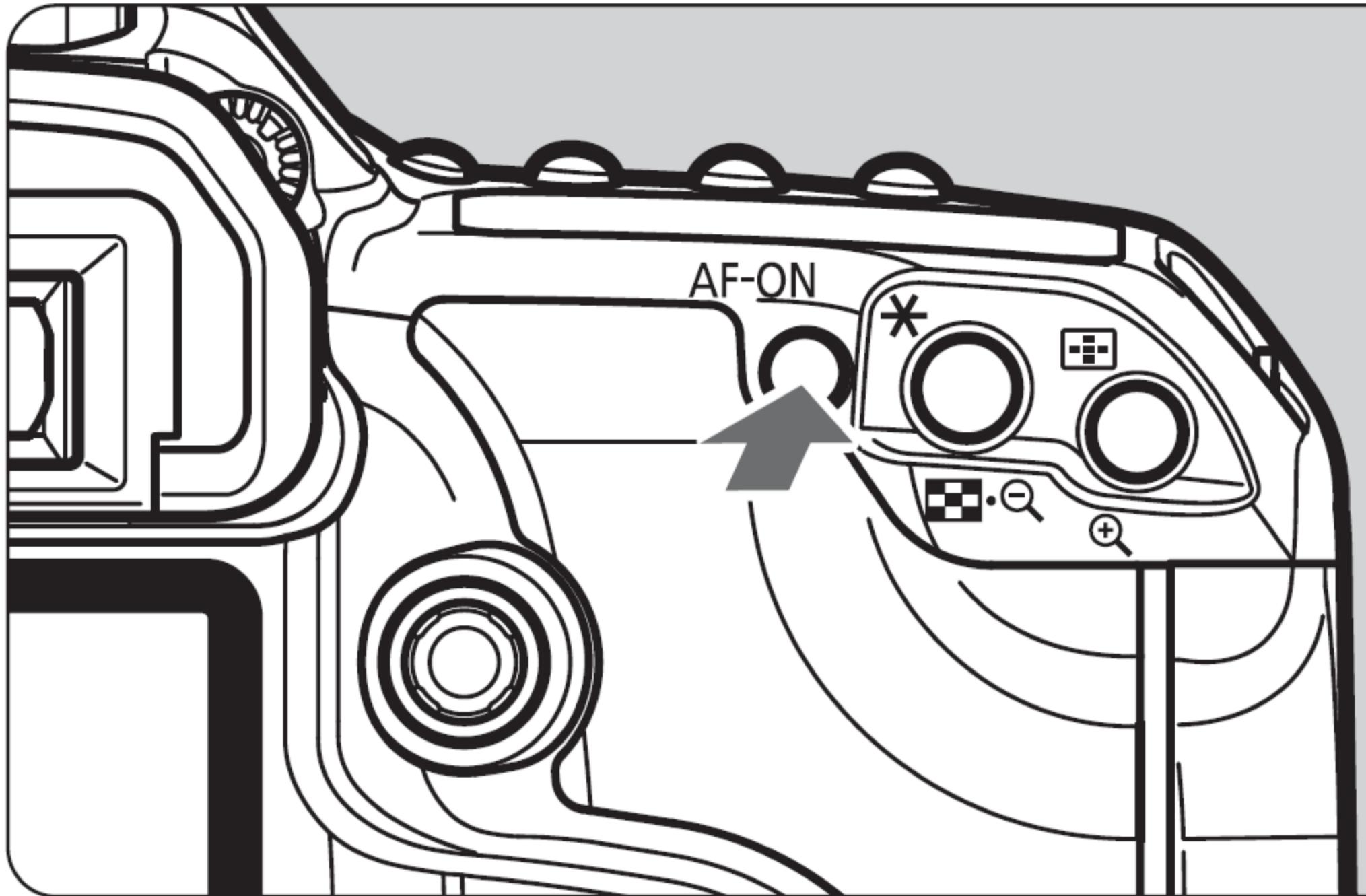
f/20 - lots of items in focus

Depth-of-Field Preview Button

Alters the the viewfinder and
screen to reflect the actual
aperture setting



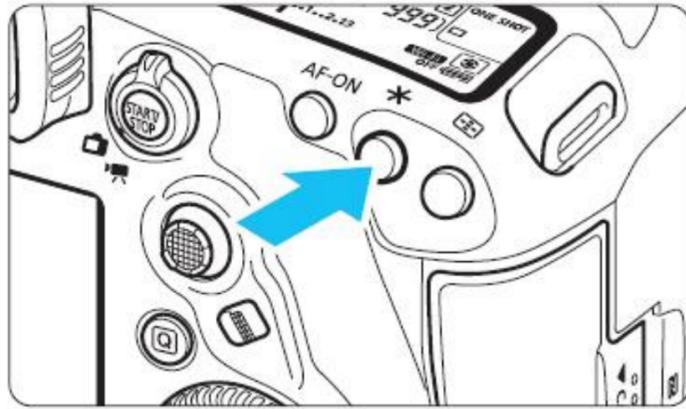
Landscape - Focus on scene - AF-ON Button



Auto Focus - ON

The same as pressing the shutter button halfway.

Landscape - Lock Exposure - Multiple Shots same Exposure Level



1/20 second, f/14, ISO 100, 24mm

1 Focus on the subject.

- Press the shutter button halfway.
- ▶ The exposure setting will be displayed.

2 Press the < * > button (* 4).

- ▶ The < * > icon lights up in the viewfinder to indicate that the exposure setting is locked (AE lock).
- Each time you press the < * > button, the current exposure setting is locked.

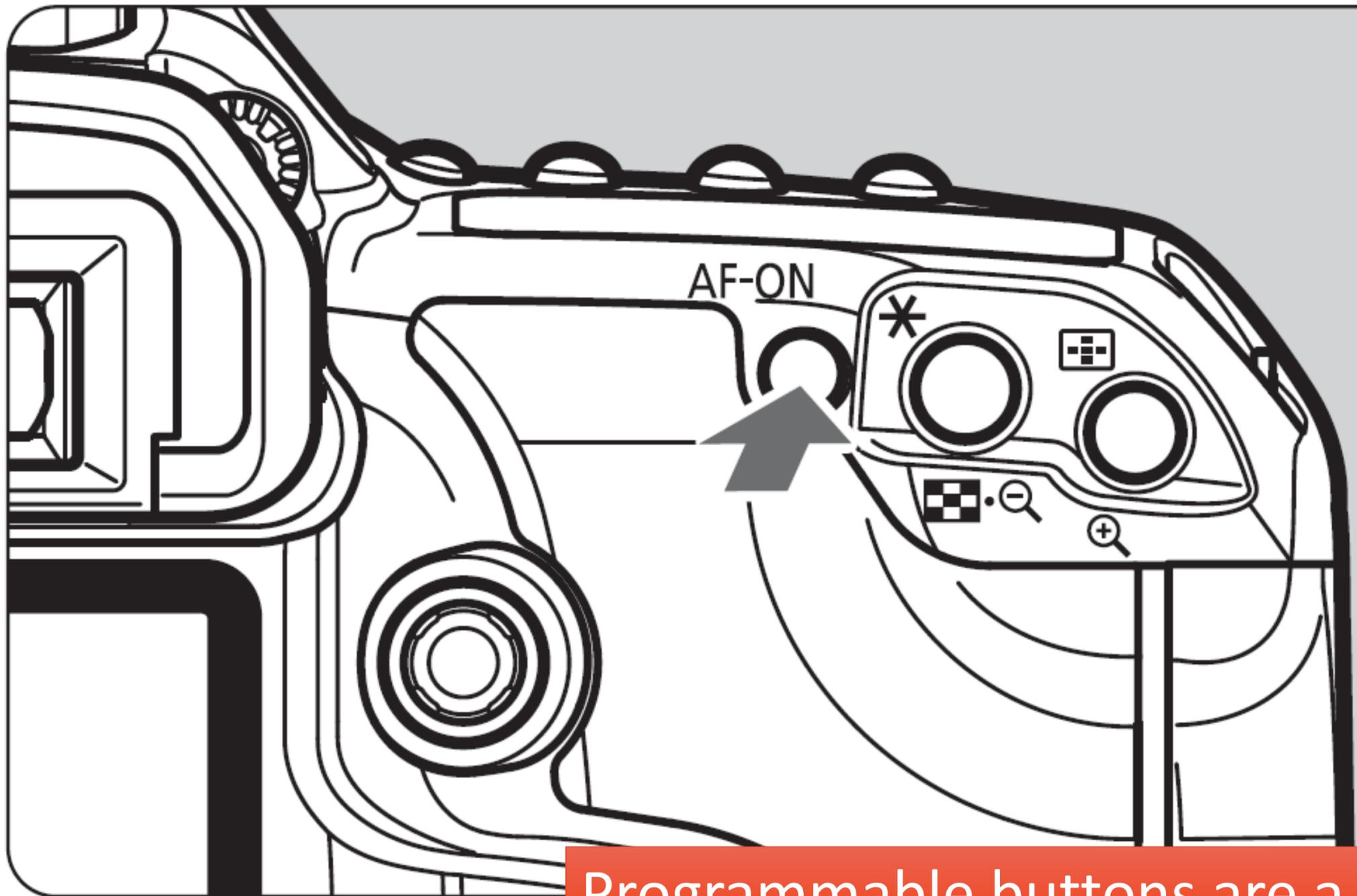
3 Recompose and take the picture.

- If you want to take more pictures while maintaining the AE lock, keep holding down the < * > button and press the shutter button to take another picture.

Auto Exposure Lock

AE lock *may* be applied at the selected AF point

Programmable Buttons?



Programmable buttons are a double-edge sword



5 seconds, f/7.1, ISO 100, 75mm

Landscape
Focus

Action
Motion

Family
Light

Smart
Auto

Motion

With an Action Example



1/640 second, f/2.8, ISO 400, 70mm

Motion - Deciding to freeze or blur the action



2.5 seconds, f/22, ISO 100, 11mm

Focus tracking - letting your camera change focus as the subject moves

Using composition techniques - leaving room ahead of the motion

Drive mode - high-speed continuous shooting

Capturing motion - putting you in control of the look

Action - Auto Focus Characteristics

1. Provide your camera hints on how to focus on the subject in the scene
2. For moving objects, use Continuous
3. When in a moving car, a fixed subject is “moving”, use Continuous



Single

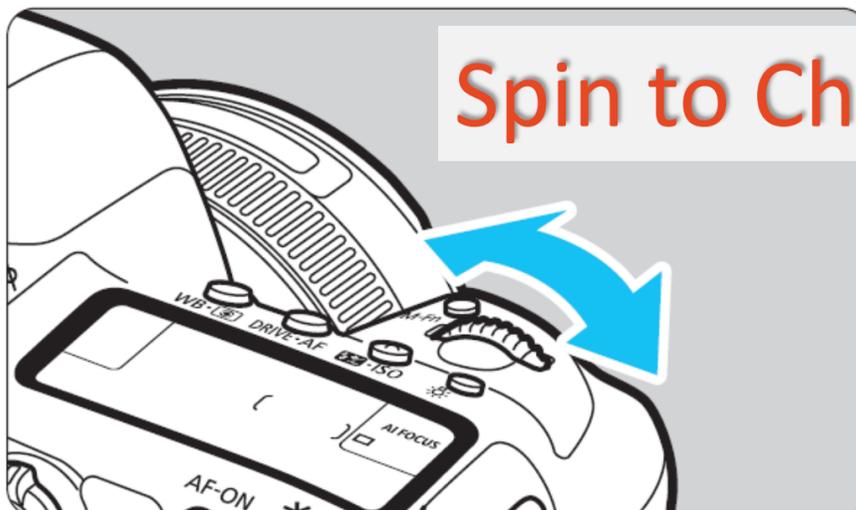
- Best for still subjects
- Canon - One-Shot, Nikon - Single-servo

Hybrid

- Switches to Continuous if subject moves
- Canon - AI Focus, Nikon - Auto-servo

Continuous

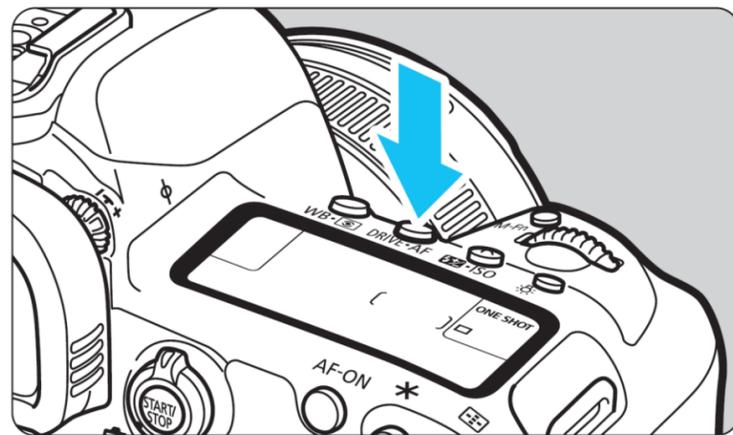
- For moving subjects
- Canon - AI Servo, Nikon - Continuous-servo



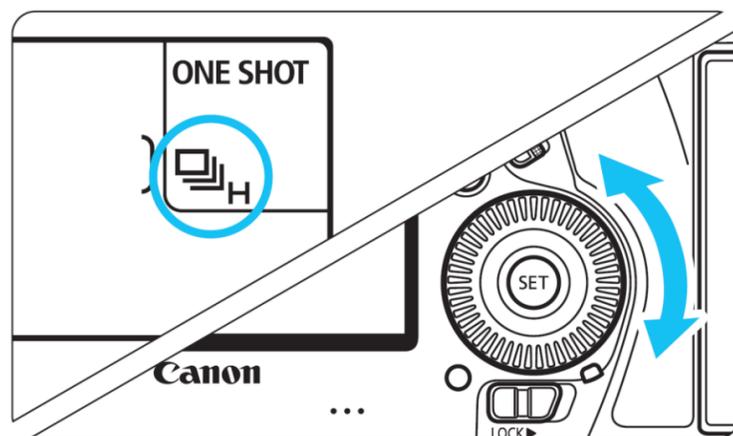
Set your camera to drive/release mode to

Canon - Continuous, Nikon - Continuous, Fujifilm - Burst

Canon – “Drive-AF”

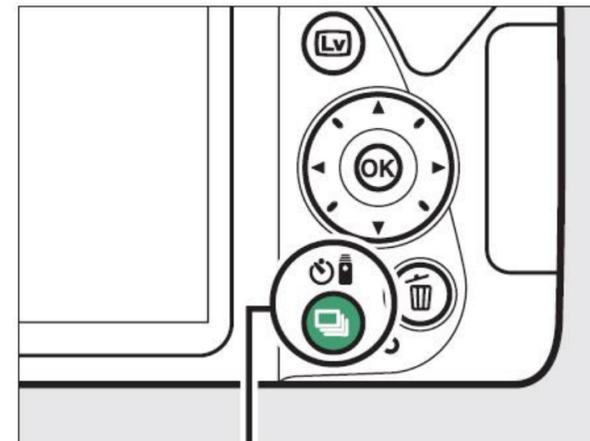


1

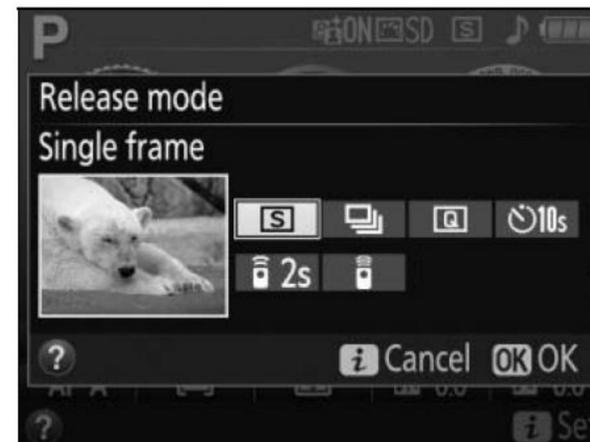


2

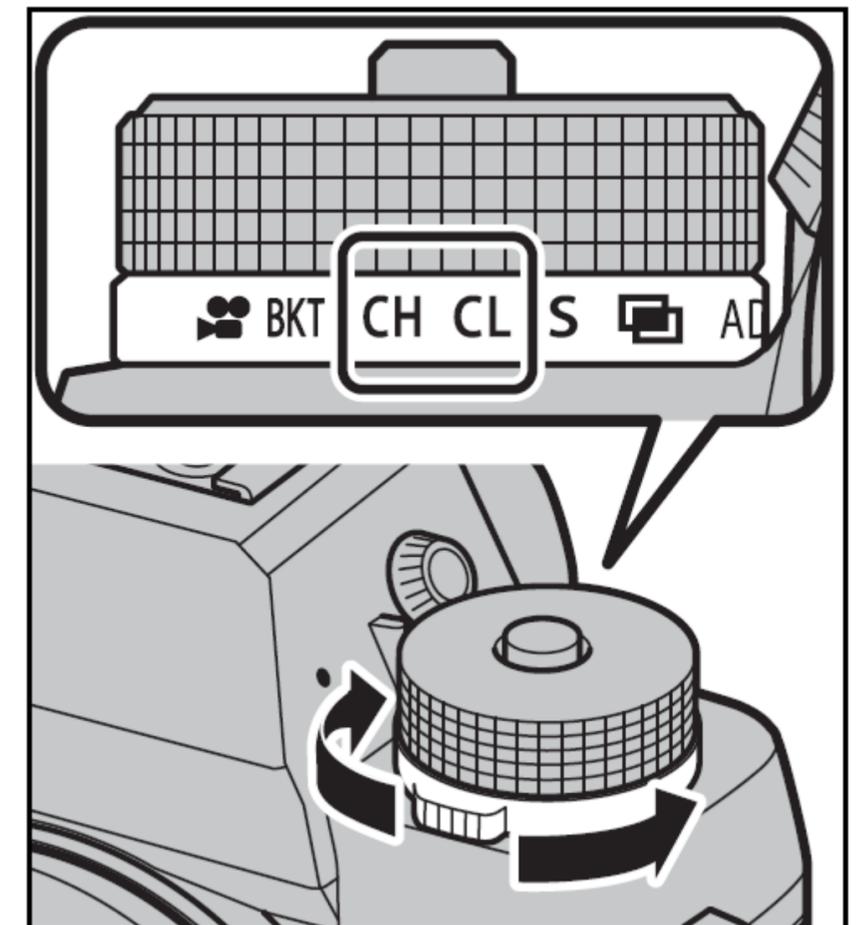
Nikon – “Release”



() button



Fujifilm – “Drive”



Action Activity - Setting mode to “Shutter Priority”

Activity

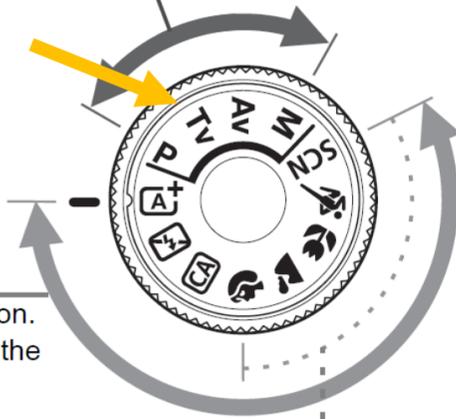
- Choosing a fixed shutter speed and letting the camera automatically adjust aperture & ISO for a good exposure
- Set your camera to use Shutter Speed as the top priority

Canon – “Tv”

Creative Zone

These modes give you more control for shooting various subjects.

- P** : Program AE (p.86)
- Tv** : Shutter-priority AE (p.110)
- Av** : Aperture-priority AE (p.112)
- M** : Manual exposure (p.115)



Basic Zone

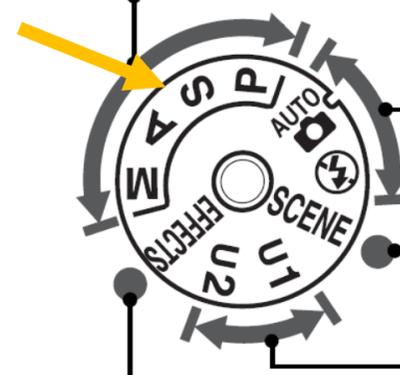
All you do is press the shutter button. The camera sets everything to suit the subject or scene.

- A+** : Scene Intelligent Auto (p.58)
- ☒** : Flash Off (p.63)
- CA** : Creative Auto (p.64)

Nikon – “S”

P, S, A, and M modes:

- P** — Programmed auto (p. 52)
- S** — Shutter-priority auto (p. 53)
- A** — Aperture-priority auto (p. 54)
- M** — Manual (p. 56)



Auto modes:

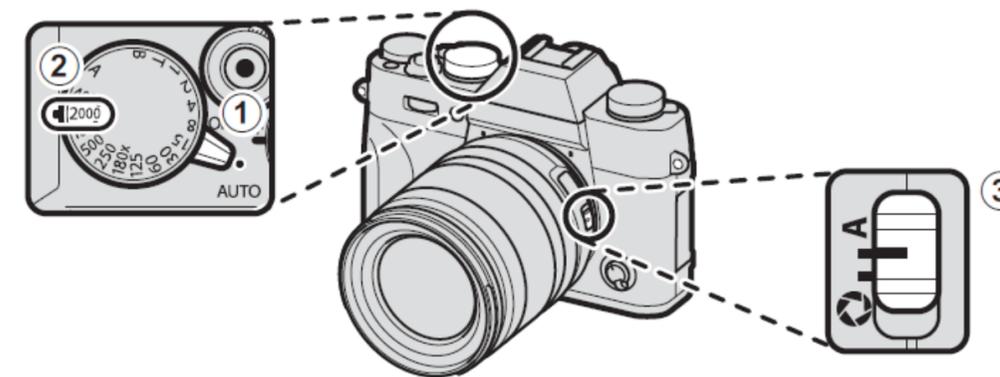
- AUTO** Auto (p. 30)
- ☒** Auto (flash off) (p. 30)

Scene modes (p. 41)

U1 and U2 modes (p. 62)

Special effects modes (p. 44)

Fujifilm – “S”



Adjust settings as follows:

- ① **Auto mode selector lever:** ●
- ② **Shutter speed:** Choose a shutter speed
- ③ **Aperture:** A (auto)

Action - Putting it all together

Select speed. Select ISO. Camera chooses aperture (f-stop)



Shutter/Speed - 1/2000 of a second - freeze motion

Focus - AI Servo/continuous - ISO 400, f/6.3

Drive/Release - Single - already had 20+ photos



Shutter/Speed - 1/8000 of a second - freeze motion a running Cheetah

Focus - AI Servo/continuous, ISO 1250, f/5.6

Drive/Release - Continuous - gone in an instance, 1 second opportunity



20170505 110732 5D4.cr2



20170505 110732a 5D4.cr2



20170505 110732b 5D4.cr2



20170505 110732c 5D4.cr2



20170505 110732d 5D4.cr2



20170505 110732e 5D4.cr2

FYI

There was a
fence between
me and the
cheetah

**Zoom In Close,
Small Number Aperture**
Help the camera ignore the fence



Using Manual Focus

Known Subject
Location
&

Pre-Focusing Is Easy



1/250 second, f/5, ISO 200,
48mm, Sports, Flash



1/640 second, f/4, ISO 400,
135mm, Sports



1/1600 second, f/6.3, ISO 400,
200mm, Sports

Action Handy Tip

Using Manual Focus

Known Subject
Location
&

Pre-Focusing Is Easy

**Danger!!!
Reset to
Auto Focus
before
moving**



Landscape
Focus

Action
Motion

Family
Light

Smart
Auto

Light

With a Family Example



1/60 second, f/7.1, ISO 200, 70mm

Family Photos Lighting

Where lighting is often poor and eliminating distractions in your photo is key for moving the result from OK to great

Lighting options – metering mode, exposure compensation, altering the light sources – what should be dark (underexposed) or bright (overexposed)

Perspective – changing your point of view to improve results

Arranging people – subtle changes to improve composition

Light sensitivity – adding light by changing camera settings

Ask yourself

Would different lighting work better?



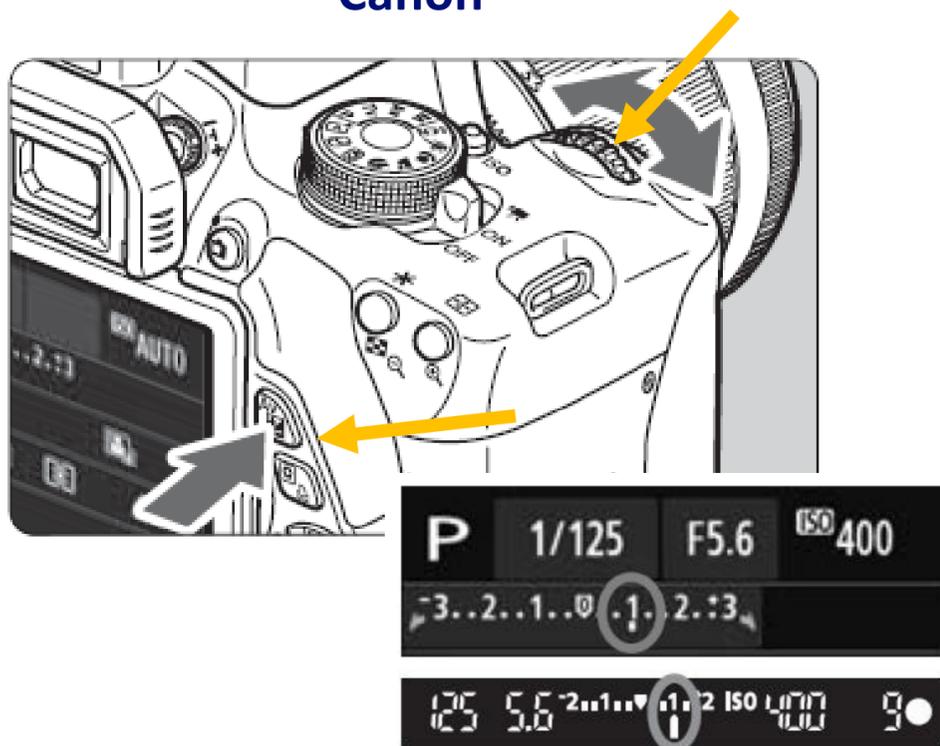
20 seconds, f/14, ISO 100, 100mm

- **What is the light source?**
Where is the light coming from in relation to your scene and to your camera
- **How strong is the light?**
Is it diffused (sun behind a cloud), are there many sources (multiple windows)
- **What color is the light?**
Bright white from snow, more yellow at sunset, more blue right after sunset
- **How to change the light?**
Wait, change the scene angle, move to a new location (under a tree), artificial light ... *camera settings*

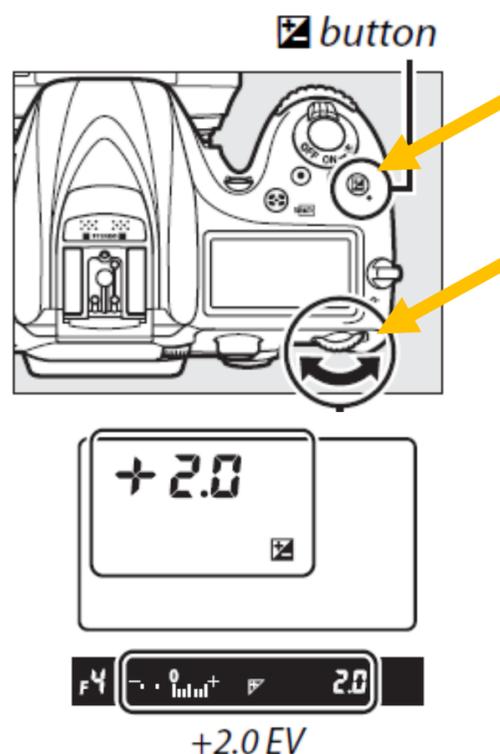
ACTIVITY Light - Exposure - Forcing Underexposure and Overexposure

- When the camera does not understand what you are trying to accomplish
- Use when you can't control of the light (can't move, add flash or add shadow ...)
- **Underexpose** (darken) is to the left of center. **Overexpose** (lighten) is to the right of center
- Backlit - overexpose if you need to see the subject
- Too bright - underexpose to save detail in the subject

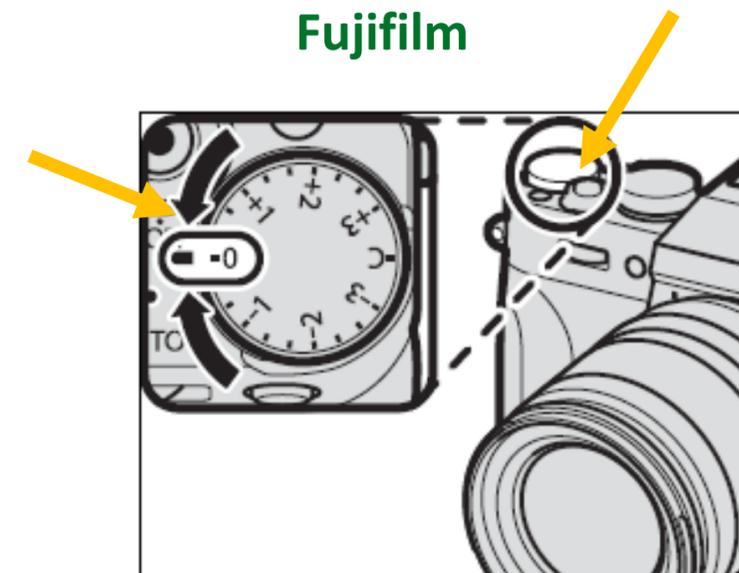
Canon



Nikon



Fujifilm



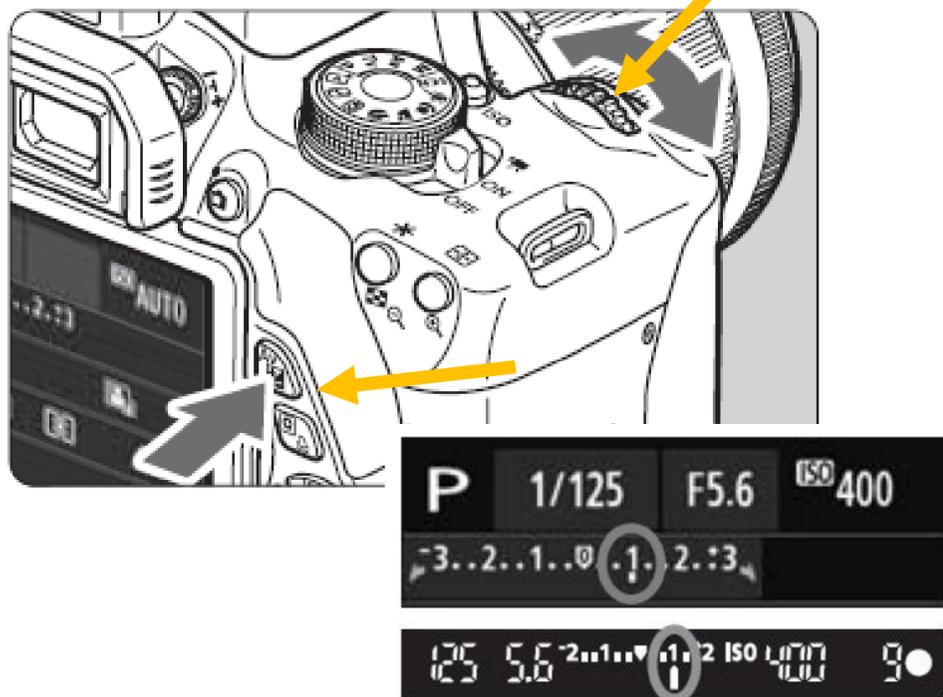
Rotate the dial to choose an exposure compensation amount.

ACTIVITY Light - Exposure - Forcing Underexposure and Overexposure

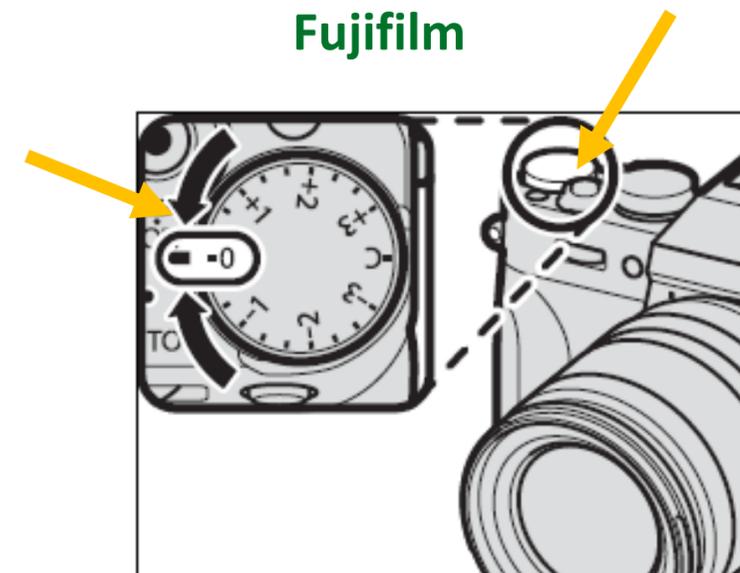
- When the camera does not understand what you are trying to accomplish
- Use when you can't control of the light (can't move, add flash or add shadow ...)
- **Underexpose** (darken) is to the left of center. **Overexpose** (lighten) is to the right of center
- Backlit - overexpose if you need to see the sky
- Too bright - underexpose to save detail in the shadows

Danger!!!
Reset exposure when finished

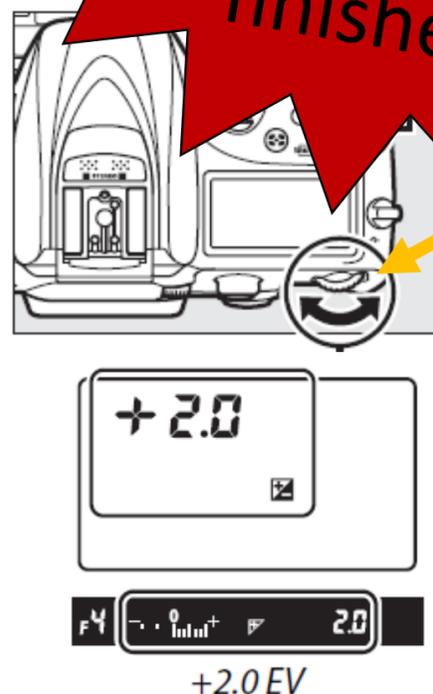
Canon



Fujifilm



Rotate the dial to choose an exposure compensation amount.



Light - Sensitivity

Changing light using ISO

- Increasing brightness using ISO is like turning up TV volume - too loud degrades quality
- ISO ranges from around 100 to 10,000 and even 100,000
- Setting ISO to 'Auto' allows the camera smarts to include ISO in exposure calculations
- Don't avoid high ISO, instead understand your camera abilities

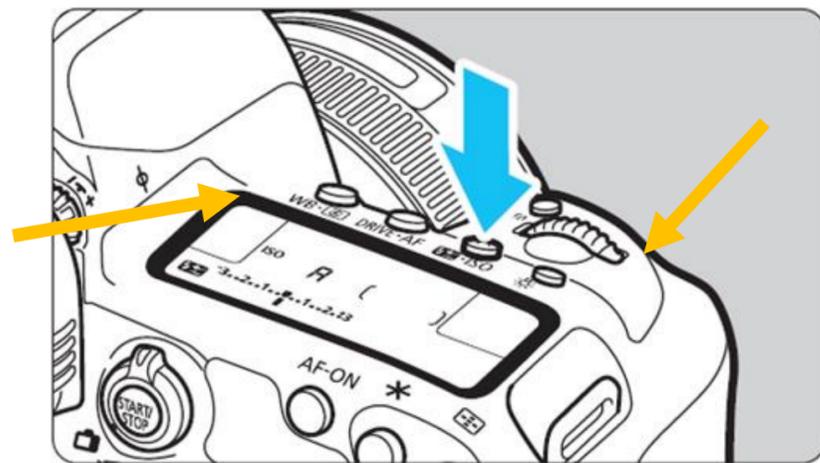
1/125 of a second, f/5.6, ISO 3200, 371mm



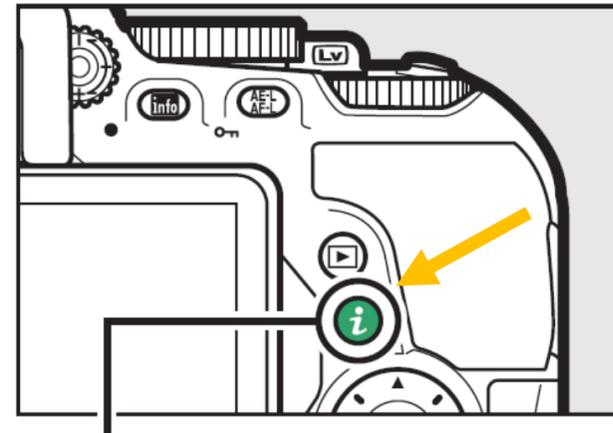
ACTIVITY - Light - Sensitivity - Adjusting your ISO setting

- Find 'Auto', Find '400', Find '6400'

Canon



Nikon

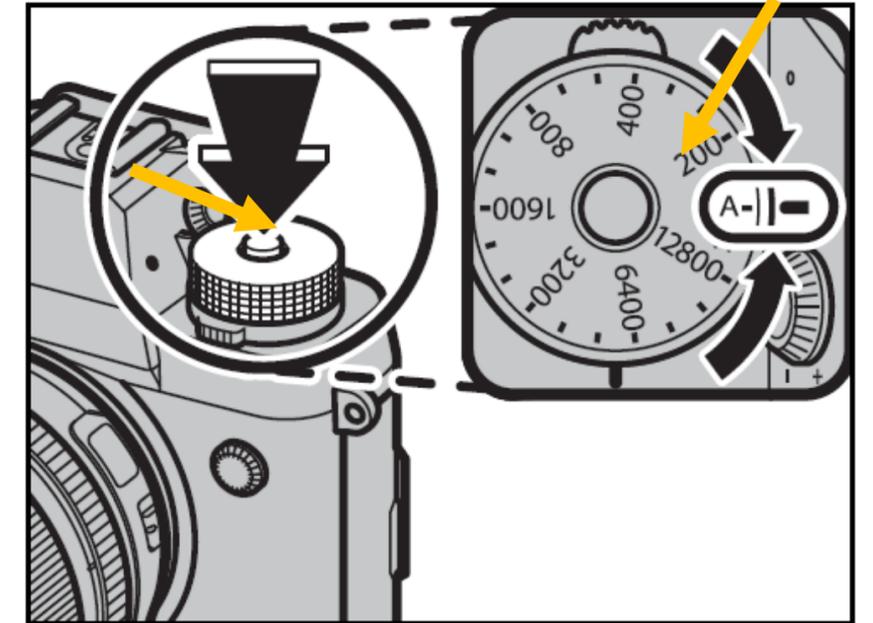


i button



Information display

Fujifilm



Press the sensitivity dial lock release, rotate the dial to the desired setting, and press the release again to lock the dial in place.

ACTIVITY - Light - Sensitivity - Adjusting your ISO setting

- Find 'Auto', Find '400', Find '6400'

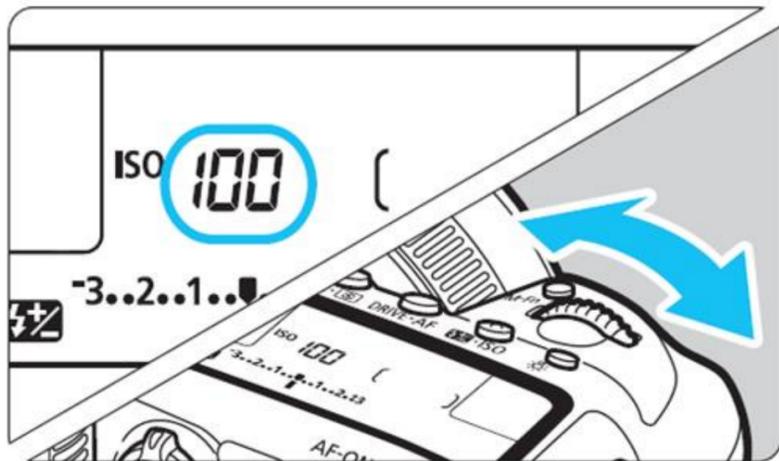
Some cameras use smarts to override a fixed ISO

Canon

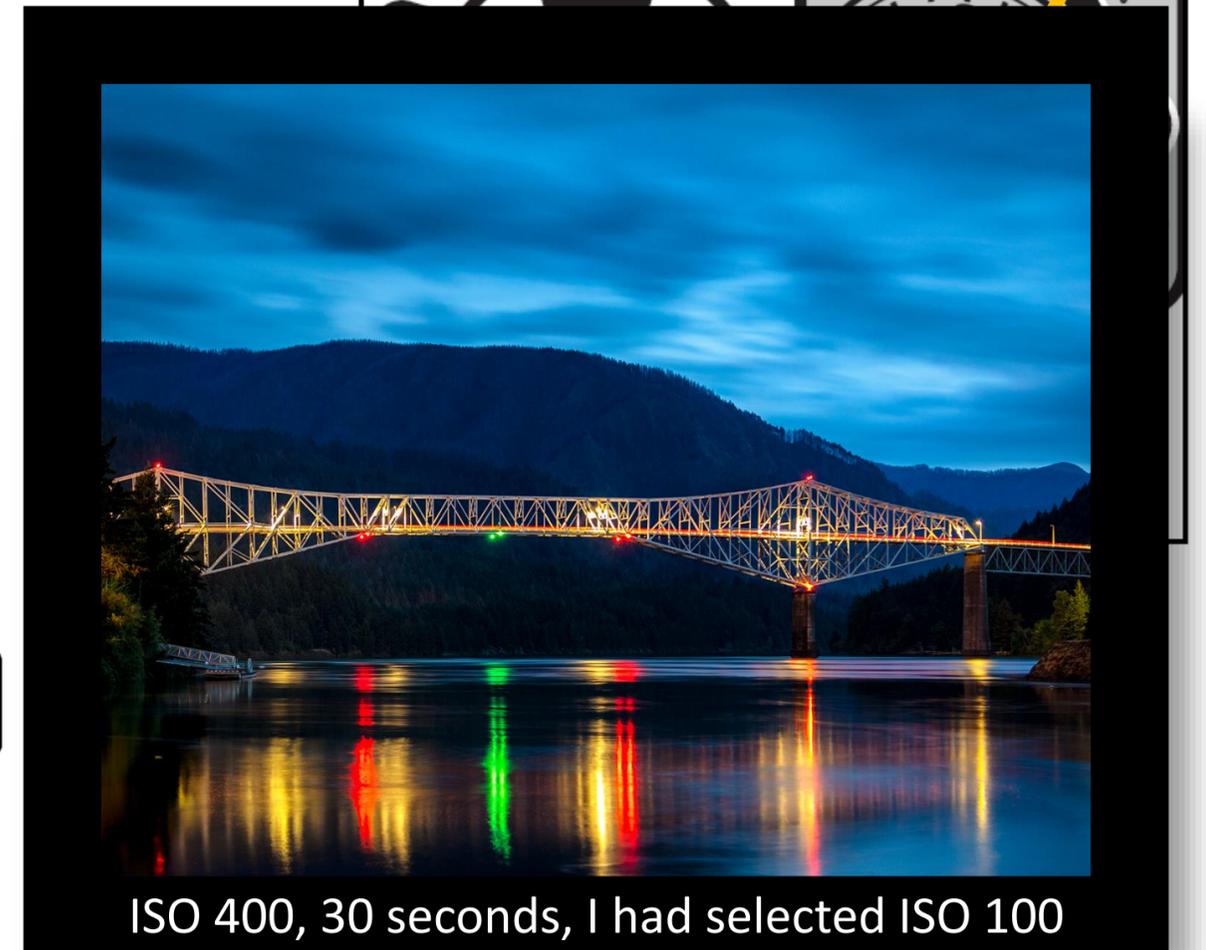


i button

Fujifilm



Information display

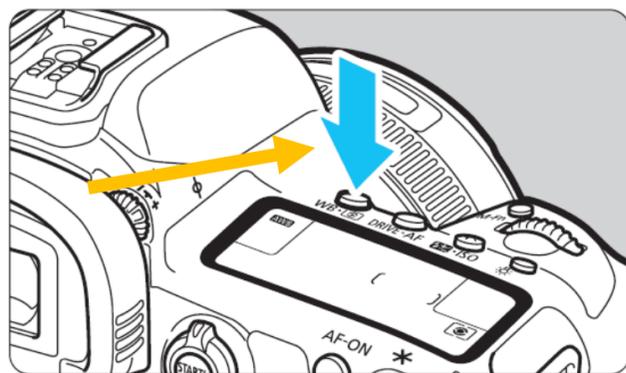


ISO 400, 30 seconds, I had selected ISO 100

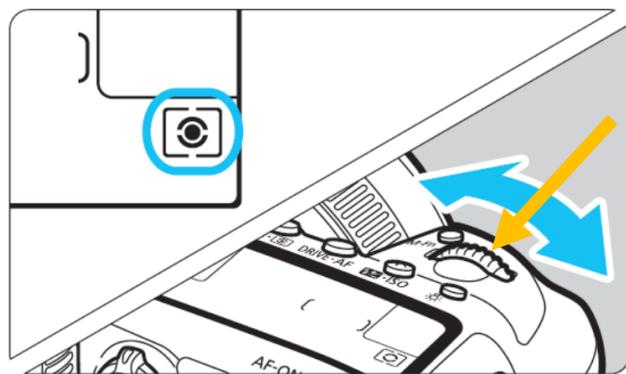
Light - Metering - Instructing the camera on how to determine the exposure

- **Evaluative/Matrix/Multi** - camera smarts calculate what is best for the whole scene
- **Center-weighted** - increase the importance of the center when calculating
- **Spot** - use only a very small area (1% to 3%) in the center when calculating
- Note - generally, the focus location is ignored

Canon

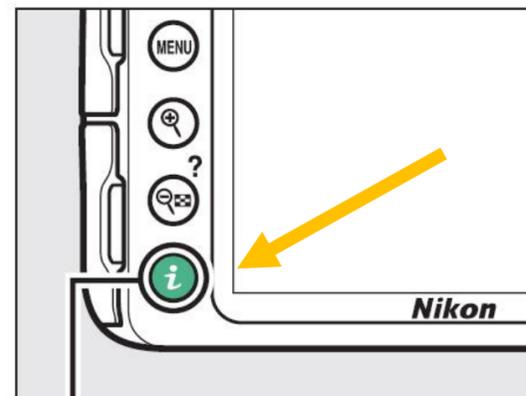


1



2

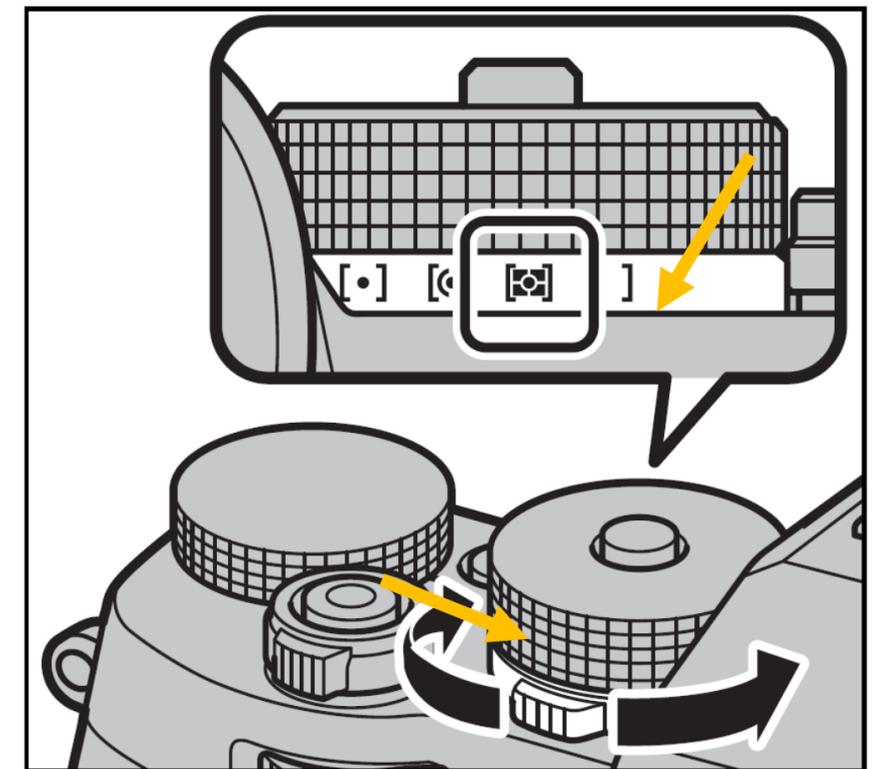
Nikon



i button



Fujifilm



Rotate the metering dial

Auto

Many other settings exist!

Cases 1 to A are five combinations of settings for “[Tracking sensitivity](#)” and “[Accel./decel. tracking](#).” Referring to the following table, select the case for your subject and shooting situation.

Case	Icon	Description	Examples of Shooting Situations
Case 1		Versatile multi purpose setting	Moving subjects in general
Case 2		Continue to track subjects, ignoring possible obstacles	Tennis, freestyle skiing
Case 3		Instantly focus on subjects suddenly entering AF points	Start of a cycling race, downhill skiing
Case 4		For subjects that accelerate or decelerate quickly	Soccer, rhythmic gymnastics, motorsports, basketball
Case A		Tracking automatically adapts to subject movement	Moving subjects in general, especially in dynamic shooting situations

Auto - Other Smarts

Using “scene” modes

Camera manufacturers have optimized the scene modes to create amazing photos. They know the strengths and weakness of the camera model to make great setting choices.

Auto	Newer cameras are very smart. Works great when someone uses your camera to take a photo of you!
Sports	Focus AI servo, drive continuous, high shutter speed to freeze motion, flash disabled
Portrait	Face focus, drive continuous, small number aperture (few in focus), natural skin tones, flash enabled
Landscape	Focus single shot, large number aperture (lots in focus), boost greens & blues
Night Portrait	Balance light between subject and background, flash enabled, higher ISO
Others ...	Modes vary by camera model

Auto

Using “scene” modes

Camera manufacturers have optimized the scene modes to create amazing photos. They know the strengths and weakness of the camera model to make great setting choices.

100K

Auto

Newer cameras are very smart. Works great when someone uses your camera to take a photo of you!

100K

Sports

Focus AI servo, drive continuous, high shutter speed to freeze motion, flash disabled

Portrait

Face focus, drive continuous, small number aperture (few in focus), natural skin tones, flash enabled

Landscape

Focus single shot, large number aperture (lots in focus), boost greens & blues

Night Portrait

Balance light between subject and background, flash enabled, higher ISO

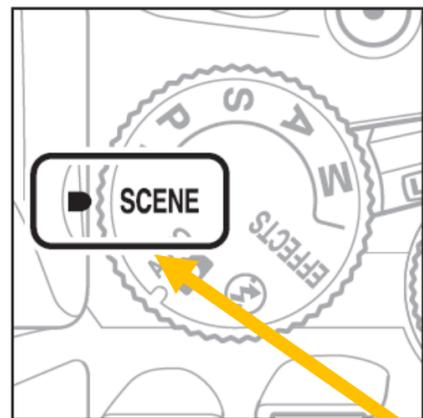
Others ...

Modes vary by camera model

Finding “scene” modes

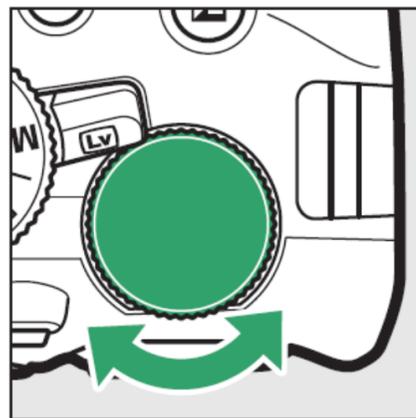
Scene list from Nikon D5600

Portrait, Landscape, Child, Sports, Close up, Night Portrait, Night Landscape, Part/Indoor, Beach/Snow, Sunset, Dusk/Dawn, Per Portrait, Candlelight, Blossom, Autumn Colors, Food



Mode dial

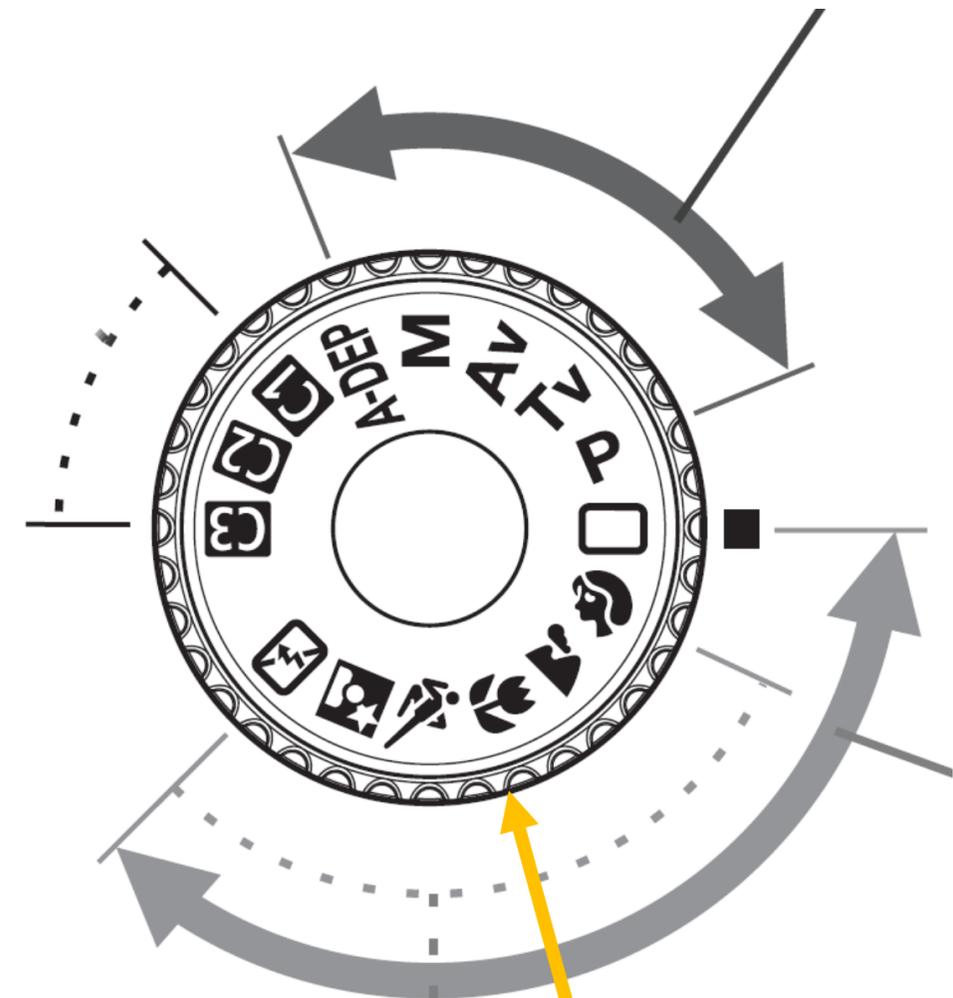
+



Command dial



Monitor

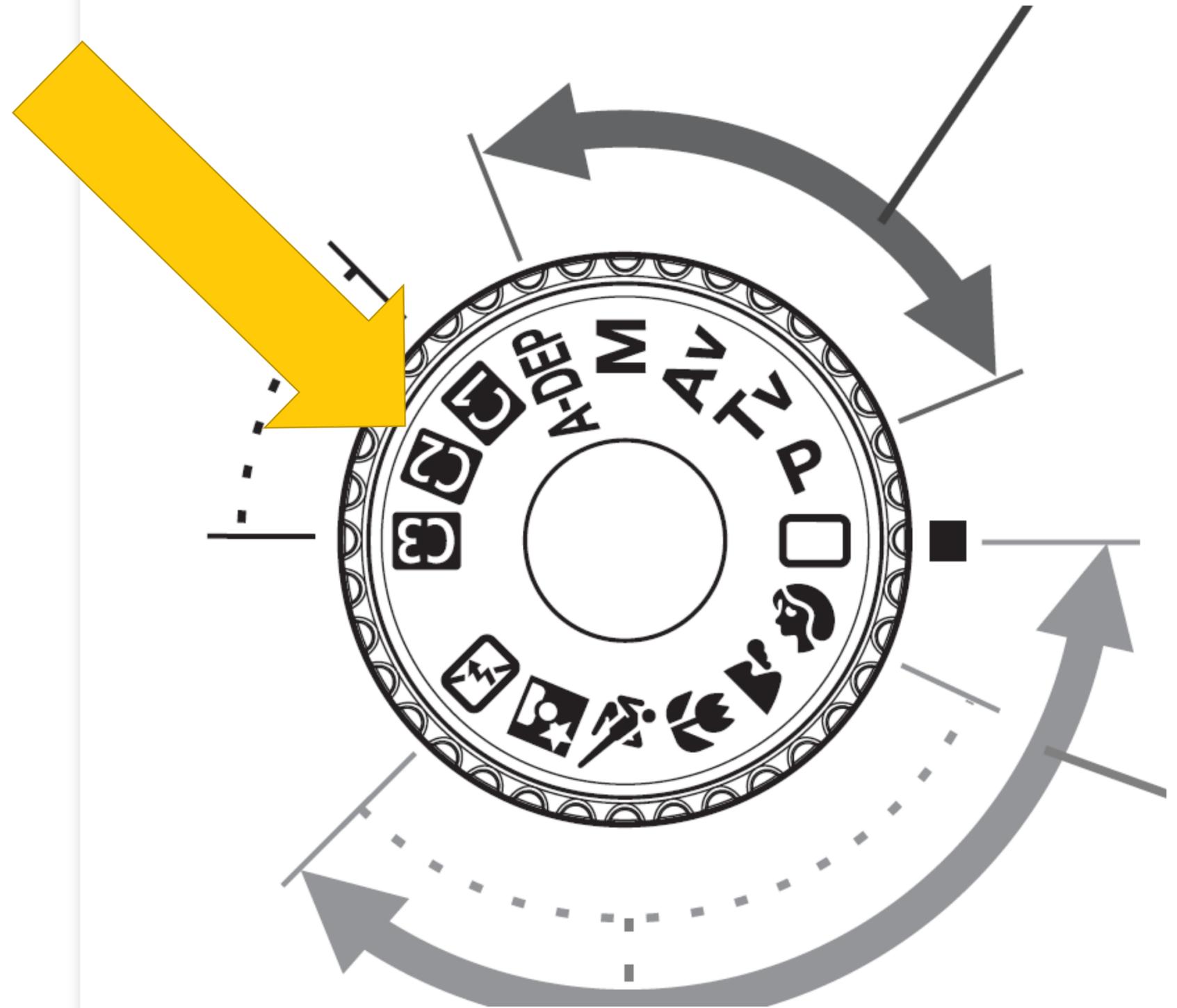


Individual scenes on dial

Top level scene mode provides access to all scenes

What are Canon C1, C2, C3 Modes?

- For saving favorite settings
- Camera's typical usage
 - C1 - today's landscape guess
 - C2 - backup landscape, ND ...
 - C3 - AI Servo, Continuous Drive, Spot metering
Always ready for wildlife



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Why? Two Tripods - Three Camera Bodies - Who Has Time For Camera Settings!

There is always more
to learn

As my dad would say,
“Always sharpen your tools!”

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“Always sharpen your tools!”

- Browse your camera manual. This session only covers 20% of what is possible.
- Search the internet to find articles and videos on your camera.
- For questions and answers leverage Flagpole Photographers Facebook page.
- Challenge - every month use a new button, quick setting or menu item.