LESS GUESSING. MORE UNDERSTANDING

PHOTOGRAPHY BASICS

PHOTOGRAPHERS THAT EXPERIMENT THE MOST,
GROW THE FASTEST.

LESSON 1: The lens cap should be removed from the lens BEFORE proceed to capture photographs.
- A.T.

HOW TO USE THIS GUIDE

ONE THING AT A TIME

You can learn this with a camera, a window and a few everyday objects.

Start in Auto if that is what you know. As you read, try taking control of one setting. Keep the camera nearby and make a few photographs before moving on.

Camera brands use different names and buttons. Your manual will show you where a setting Lives. The ideas here apply across brands.

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> **During a lesson:** use the blue exercise boxes as a starting point for a conversation. Make a photograph, describe what you see, then change one thing.

Using a phone? Light, framing and timing still matter. Most phones let you tap to focus or adjust brightness. Manual controls vary, and most phones lenses have a fixed aperture.

BEFORE THE SETTINGS

WHAT IS A PHOTO ABOUT?

Give the viewer something clear to look at.

Your subject is the main thing in the photograph. It might be a person, a car, a building or a small detail. Start by deciding what matters.



Lots competing for attention



One clear subject

Look behind it

Check for bright objects, bins, signs or lines that seem to grow out of the subject. A small step to one side can help.

Look around the edges

Is something cut off by accident? Does an object at the edge pull your eye away? Fix it before you press the shutter button.

You do not always need a plain background. A useful background can tell us where the subject is or what is happening. Keep what adds to the photograph.

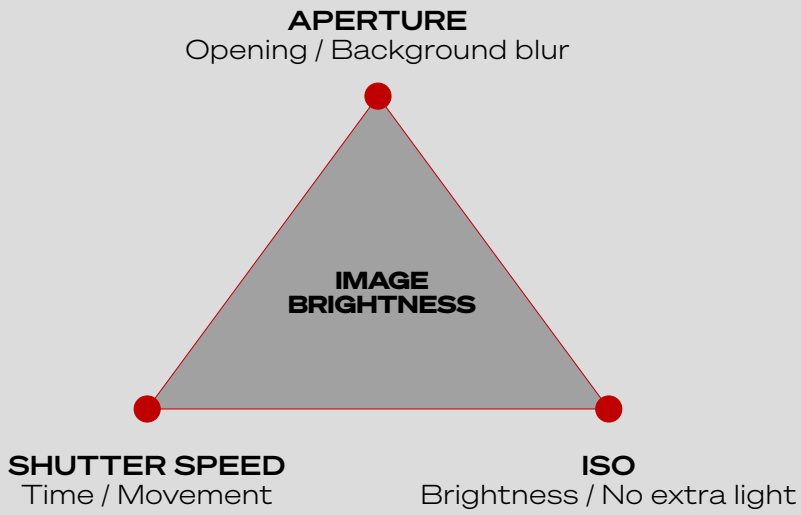
Try it / Three positions

Photograph a cup from where you are. Then move left, right, lower or higher. Keep the same cup as your subject. Which background helps it stand out ?

THREE SETTINGS TO GET TO KNOW

THE EXPOSURE TRIANGLE

All tree affect brightness. Each also comes with a choice.



Aperture is the diaphragm opening inside the lens. **Shutter speed** is how long the camera collects light for a photograph. Together, they control how much light reaches the camera's sensor, the part that records the image.

ISO changes how the camera turns that captured light into image brightness. It does not open the lens wider, collect light for longer or add light to the scene.

> The triangle is a memory aid. These are not three identical controls. Choose the look you need, then balance the settings around it.

When we say a photograph is too bright or too dark, we are judging how it looks. There is no single correct brightness for every scene. But capturing too much or too little light can mean losing detail. Fully blown-out highlights cannot be recovered, while very dark shadows may reveal noise rather than useful detail when brightened.

THE OPENING IN YOUR LENS

APERTURE

Small f-number. Big opening.

Aperture is written as an f-number, such as f/2.8 or f/11. The number can feel backwards at first: a smaller number means a wider opening. Think of it as a fraction: 1/2.8 is larger than 1/11.



f/2.8 **f/5.6** **f/11**

A lower number

Often useful for a softer background or in low light. Less of a scene may look sharp, so focus carefully.

A higher number

Can keep more of the scene looking sharp. The smaller opening lets in less light, so another setting may need to change.

The area that looks acceptably sharp is called **depth of field.** Aperture affects it, but so do your distance, lens and camera. *More on page 12.*

Try it / A subject and a background

Put a cup in front of a bookshelf. In A (or Av) mode, use Auto ISO (if available). Take one photo at your lowest available f-number and another at f/8, without moving. Focus on the cup both times. Compare the bookshelf behind it.

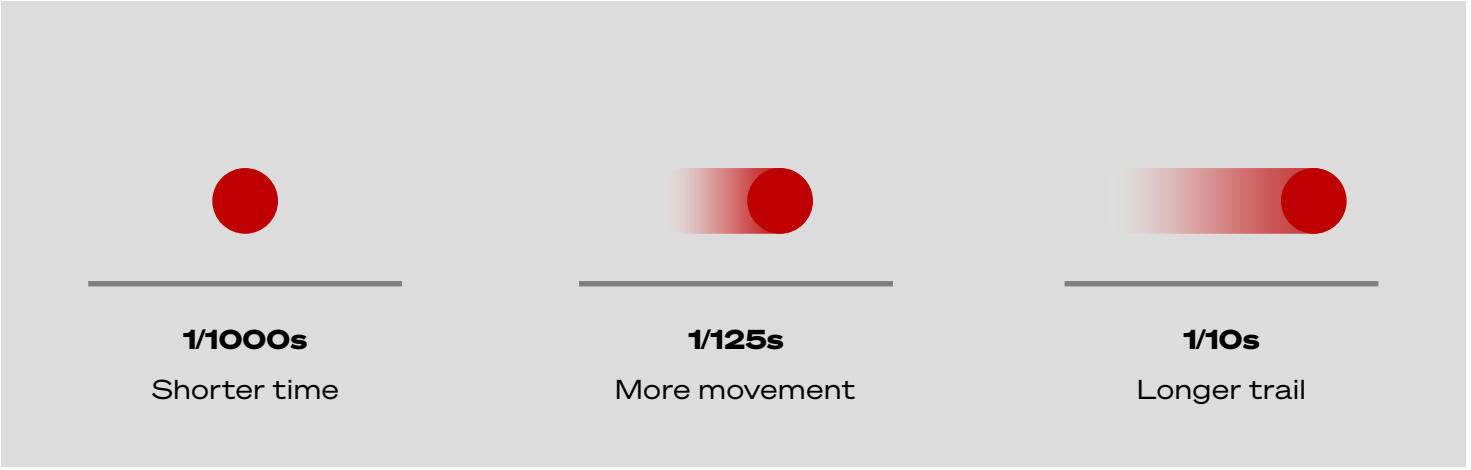
Your lens may not reach f/2.8. Use what it offers. The highest f-number is not automatically best: very small openings can soften fine detail.

HOW LONG THE CAMERA COLLECTS LIGHT

SHUTTER SPEED

Freeze movement, or let it show.

Shutter speed is usually shown as a fraction of a second. **1/1000** is a much shorter time than **1/30**. Some cameras display just the bottom number, such as 1000 or 30.



A fast shutter speed helps freeze movement. A slow shutter speed collects light for longer, but anything that moves during that time may blur.

Subject movement

A walking person can blur even when the camera is steady. A fast shutter speed may help.

Camera movement

If your hands move during the exposure, much of the picture may blur. Hold the camera steadily or use support.

Try it / Running water

In good light, use S (Tv) mode and Auto-ISO. Photograph a running tap at 1/500 and 1/30. Keep the camera dry and steady. Compare the water. If the camera cannot make the photo bright enough, move to better light or try a slower shutter speed.

BRIGHTNESS WITHOUT ADDING LIGHT

ISO

Do not let a low ISO ruin a useful shutter speed.

ISO is shown as a number, such as 100, 400 or 1600. With the same light, aperture and shutter speed, raising the ISO usually makes the image brighter.

f/3.5
1/400s
ISO 3200





f/3.5
1/400s
ISO 6400

ISO does not collect extra light.

What about grainy-looking photos?

The speckles you sometimes see are called **noise**. High-ISO photos often look noisier because they were taken with little captured light. ISO is not the whole story: camera, exposure and editing all matter.

A sharp photo at ISO 3200 can be more useful than a blurred photo at ISO 1000. Raising ISO is not a failure. But a higher ISO can leave less room for very bright details before they turn plain white.

> **A useful order**: choose the aperture and shutter speed you need. Then use an ISO that gives you a suitable brightness. Auto-ISO can do that last part for you, within the camera's limits.

Try it / Watch Auto-ISO work

Set M mode, f/4 if available, 1/250 and Auto-ISO. Point at the same object near a window, then move it into a darker part of the room. Watch the ISO change. These are exercise settings, not a rule for every photograph.

DIFFERENT SETTINGS, SIMILAR BRIGHTNESS

BALANCE THE TRADE-OFFS

Start with what the photograph needs.

If a person is moving, you may need a faster shutter speed. If several objects must look sharp, you may need a narrower aperture. One change can mean adjusting something else.

What is a stop?

A stop is a doubling or halving. Changing from 1/250 to 1/500 collects light for half as long: one stop less light. Changing ISO 400 to 800 is one stop higher ISO, not twice as much captured light.

Example	Settings	What changes?
Starting point	f/4 1/250 ISO 400	A starting combination for this example.
Freeze more movement	f/4 1/500 ISO 800	Half the shutter time, higher ISO to keep similar brightness.
More depth of field	f/5.6 1/125 ISO 400	A smaller opening, twice the shutter time to balance it.

Same scene and light. These combinations give roughly similar brightness, not identical motion blur, depth of field or Noise. They are examples, not ready-made settings for every situation.

Aperture numbers work differently

Each step in this sequence is about one stop less light:

f/2.8 > f/4 > f/5.6 > f8 > f11

Your camera may show smaller steps in between. You don't need to memorize them all now.

> If the result is not working, change the setting linked to the problem. A brighter picture will not fix motion blur.

YOU DO NOT HAVE TO CONTROL EVERYTHING

CHOOSE A CAMERA MODE

Let the camera help with the choices that matter less right now.

Mode	Your main choice	Useful when ...
Auto	The camera makes most choices. It may also use the flash.	You want to concentrate on the subject and framing.
P / Program	The camera balances aperture and shutter speed.	You want automatic exposure with more control over other settings.
A / Av Aperture priority	You choose the aperture. The camera chooses the shutter speed.	Background blur or depth of field matters most.
S / Tv Shutter priority	You choose the shutter speed. The camera chooses the aperture.	You want to freeze movement or deliberately show it.
M / Manual	You choose the aperture and the shutter speed.	You need to hold both steady or want direct control of both.

ISO is a separate choice in all modes. You can usually set it yourself or use Auto-ISO. With Auto-ISO in M, brightness can still be adjusted automatically.

In A/Av, watch the shutter speed: it can become too slow. In S/Tv, the lens may not open wide enough for a fast shutter speed in low light. A flashing value or warning often means the camera has reached a limit.

Try it / Start with aperture priority

Use A/Av and Auto-ISO for a still subject in good light. Change aperture and watch the shutter speed and ISO. Notice what the camera adjust for you.

> Manual is not a badge of skill. Use the mode that helps you make the photograph.

THE CAMERA MAKES A GUESS

TOO BRIGHT OR TOO DARK?

You are allowed to disagree with the meter.

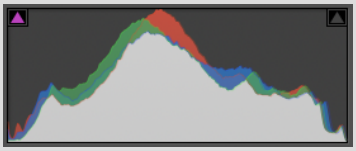
The camera's light meter estimates a suitable exposure. A very bright or very dark scene can fool it. A white wall may look grey; a dark room may look brighter than you intended.

Exposure compensation: usually marked "+/-", tells automatic exposure to aim brighter or darker. Try +0.7 if the result is too dark, or -0.7 if it is too bright. Take another photo and check.

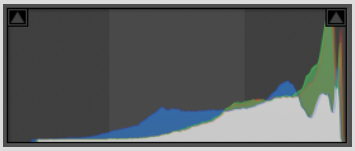
This works in P, A/Av and S/Tv, within the camera's limits. Some cameras allow it in M with Auto-ISO. In M with a fixed ISO, change aperture, shutter speed or ISO yourself.



Mostly dark tones



A mix of tones



Mostly bright tones

In each graph: blacks/shadows on the left, whites/highlights on the right.

A histogram is a graph of the dark and bright zones in your photo. There is no perfect shape. A night scene can sit mostly on the left; a bright scene can sit mostly on the right.

If important bright areas turn plain white, detail may be lost. This is called **clipping**. Use the histogram and highlight warning, to help spot it. A tiny bright reflection does not always need detail.

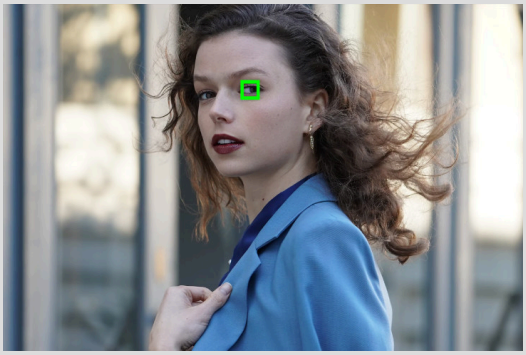
> Check the photo as well as the graph. The camera's preview and warnings are based on its Processed image, so they are guides rather than exact RAW limits.

CHOOSE WHAT MUST BE SHARP

PUT FOCUS WHERE IT MATTERS

The camera cannot always guess your subject.

Focusing sets the distance at which the lens makes things sharpest. If the camera focuses on the background instead of the person, the person may look soft even with a fast shutter speed.



Pick the important detail.

For a portrait, start with the nearer eye.

Then zoom in on the photo to check your result.

A still subject

Single autofocus, often AF-S or One Shot, focuses and then holds that distance while you keep the focus button pressed.

A moving subject

Continuous autofocus, often AF-C or Servo, keeps adjusting while you hold the focus button. Useful when the distance changes.

The **focus area** tells the camera where to look. A small point gives you a clear choice. Tracking Or eye detection can help follow a person, but check that it has found the right one.

Try it / Near and far

Put two objects at different distances. Use a single focus point. Photograph the nearer object, then focus on the further one. Compare which parts look sharp. Use a low f-number if the difference is hard to see.

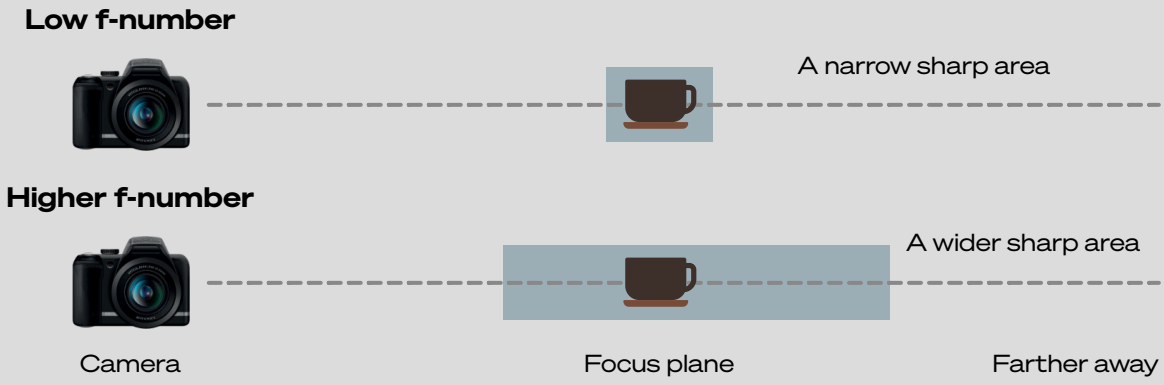
When depth of field is very shallow, moving the camera after focusing can shift focus away from the important detail. Move the focus point instead.

SHARP SUBJECT, SOFT BACKGROUND

CONTROL WHAT STAYS CLEAR

Background blur is not just an aperture setting.

Depth of field is the distance that looks acceptably sharp. A shallow depth of field means a small range looks sharp. A deeper one means more of the scene does.



Same camera, focal length and focus distance. Diagram only: sharpness fades gradually, not at a hard border.

For a softer background, try:

- A lower f-number.
- Moving closer to the subject, while keeping the framing useful.
- Moving the subject farther from the background.

Your focal length and camera also affect the result. A phone may add simulated blur in portrait mode; look carefully around hair and the edge of your subject.

> **Do not blur away something you need.** For a group of people or several objects, use enough depth of field to keep the important parts sharp. Check the nearest and farthest subjects.

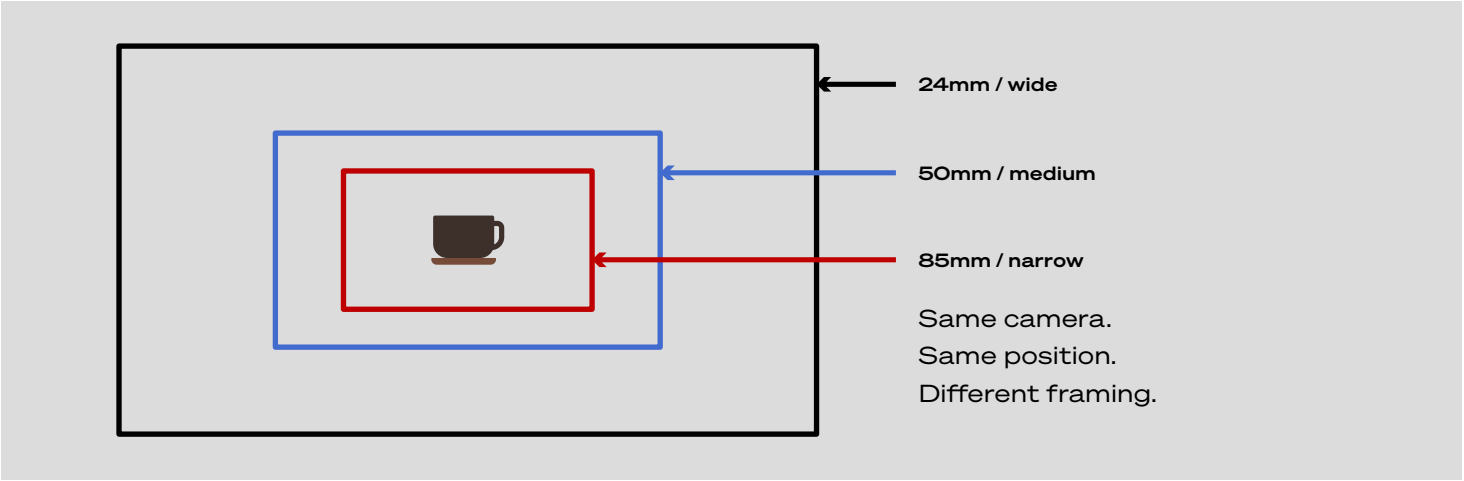
A soft background is a choice, not proof of a better photograph. Sometimes the place is part of the story.

ZOOMING AND MOVING ARE DIFFERENT

YOUR LENS. YOUR POSITION.

The place you stand changes how things relate to each other.

Focal length is the number on a lens, measured in millimeters. On the same camera, a shorter Focal length shows a wider view. A longer one shows a narrower view.



Perspective is how near and far things appear in relation to each other. It depends on your position. Get very close and nearby features look larger compared with things behind them.

If you zoom in without moving, you change the framing, not the perspective. If you step back and zoom in to keep the subject the same size, your new position changes the perspective.

Try it / Same size, different background

Photograph an object fairly close with a wide view. Step back and zoom in until it is about the same size in the frame. Compare the object and the background. Stay aware of what is behind you when moving.

Different sensor sizes give different views with the same focal length. Use these numbers to understand the idea, not as a shopping list.

MOVE THE SUBJECT BEFORE BUYING EQUIPMENT

FIND USEFUL LIGHT

Notice where the light comes from and what the shadow look like.



Harsh light / clear shadow edge



Soft light / gradual shadow edge

Front light

Light comes from behind you, towards the subject. It can show details clearly, with fewer visible shadows.

Side light

Light comes from one side. Light and shadow can make shape and texture easier to see.

Backlight comes from behind the subject towards the camera. It can give bright edges or a silhouette. Check wether you want detail in the subject, the bright background, or a deliberate balance.

Direct sun often gives hard shadows. Open shade and overcast weather can be easier starting points. Neither hard nor soft light is automatically better.

Try it / Walk around the light

Put an object beside a window. Photograph it with the window behind you, beside you and behind the object. Watch the shadows and reflections. Do not look at the sun through a camera or lens.

WHY DOES EVERYTHING LOOK ORANGE?

WHITE BALANCE

Light has color. Your camera needs a starting point.

A white shirt can look orange under a warm lamp or blue in shade. Your eyes adjust quickly, but the camera may record a color cast. White balance helps you control it.



Cooler



Neutral



Warmer

Auto White Balance, often AWB, is a good starting point. Presets such as Daylight, Cloudy or Tungsten (warm bulbs) tell the camera which kind of light to expect.

In an editor, the temperature slide moves the image towards warmer or cooler tones. Tint adjusts a green or magenta cast. Start with small changes and look at something you know should be neutral.

> Neutral is not always the goal. Sunset can feel warm. A night scene can feel cool. Keep the Mood without turning familiar colors into something you did not intend.

Mixed light is harder

A window and a warm lamp can give different parts of the scene different colors. One slider may not fix both. Try turning off an unneeded lamp or moving closer to the window.

Try it / Three versions

Under a warm indoor lamp, photograph a neutral object using AWB, Daylight and Tungsten. Compare the colors. Return to AWB afterwards so you don't forget the change.

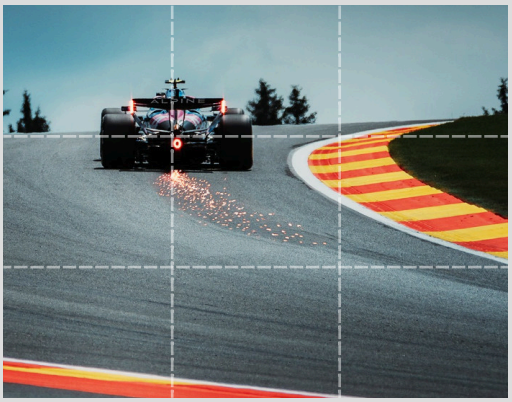
CHOOSE WHAT GOES INSIDE THE FRAME

GIVE THE EYE A PLACE TO GO

Composition is arrangement, not a set of laws.



Centered / calm and direct



Off-center / negative space

The **rule of thirds** divides the frame into nine parts. Putting a subject or horizon near a grid line can help you explore a different arrangement. It is an option, not a test you must pass.

Leave useful space

Space around a subject can show its setting or give it room to face into. Empty (negative) space is not automatically wasted space.

Follow lines

Paths, walks and shadows can guide the eye. Check where they lead: toward the subject or away from it?

Look for balance. A small bright object can attract more attention than a large dark one. Try a higher, lower, wider or tighter view before deciding.

Try it / Three frames

Photograph the same subject centered, off-centre and close up. Keep the light and settings similar. Choose your favorite and explain what makes it work, without naming a rule.

SMALL HABITS, SHARPER PHOTOS

KEEP THE CAMERA STEADY

Good settings still need a steady moment.

01 **Support the lens.**
Keep one hand under the lens and the other on the grip. Bring your elbows closer to your body.

02 **Stand comfortably.**
Give yourself a stable stance. Use the viewfinder if it helps you hold the camera firmly.

03 **Press gently.**
Squeeze the shutter button rather than jabbing it. A sudden movement can blur the photo.

04 **Watch the shutter speed.**
A longer lens magnifies small movements. If handheld photos look shaky, try a faster shutter speed and try again.

05 **Use support when needed.**
A stable tripod can help with still scenes and slow shutter speeds. A short self-timer avoids moving the camera as you press the button.

Stabilization helps your hands

Lens or camera stabilization can reduce blur from camera movement. Check your camera's guidance for tripod use.

It does not stop the subject

A person can still move during a slow exposure, even with stabilization or a tripod.

Try it / Find your own limit

Photograph a still object at several shutter speeds. Zoom in on the results. Which speeds can you hold reliably with this lens? Repeat with support. Treat the result as a guide, not a guarantee.

Keep straps secure, check your footing and do not step into roads or other unsafe places for a frame. Ask permission when needed and respect people who do not want to be photographed.

TWO COMMON WAYS TO SAVE A PHOTO

RAW or JPEG

Choose a file type that suits what you want to do next.

Question	JPEG	RAW
What is it?	A processed image made by the camera.	A file containing much more of the captured image data, ready to be elaborated by editing software.
Ready to share?	Usually, yes.	Usually needs editing software and an export first.
File size?	Usually smaller.	Usually larger.
Room to edit?	You can edit it, but intense changes can damage the result sooner.	Usually more room to adjust tones, white balance and other parameters.
Best starting point?	Convenient when you want simple capture and sharing.	Useful when you want to learn editing and keep more options.

RAW + JPEG saves both, if your camera supports it. That can help while learning, but it uses more storage and gives you two files to manage.

A RAW file may look different when opened in an editor because the software applies its own starting treatment. The camera's screen usually shows a processed preview, even when you shoot RAW.

> RAW is not a rescue button. It cannot reliably fix missed focus, unwanted motion blur or fully lost highlight detail.

Keep your originals

Copy photographs to organized folders and make a separate backup. Keep original files when editing. Export a copy for sharing rather than replacing your only original.

A memory card is not a backup/ Check that your copies are complete and readable before clearing the card.

MAKE THE PHOTO CLEARER, NOT JUST STRONGER

YOUR FIRST EDIT

Most editors share the same basic controls

01 **Choose a useful starting photo.**
Check focus, movement and expression. It is often better to edit a strong photograph than rescue a weaker one.

02 **Check the frame.**
Straighten the horizon if it should be level. Crop distractions, but leave enough space around the subject. Cropping removes pixels.

03 **Set the overall brightness.**
Move Exposure a little. Watch important bright areas and the subject, not just the middle of the histogram.

04 **Check the color.**
Adjust white balance if the image has unwanted cast. Look at familiar colors such as skin, clothing or a neutral object.

05 **Balance light and dark areas.**
Highlights adjusts bright tones; Shadows adjusts dark tones. Contrast changes their separation. Use small moves and compare before and after.

06 **Finish gently.**
Use only as much sharpening and noise reduction as the image needs. Check at 100% view, then look at the whole image again.

> If every slider is pushed hard, pause. Bright edges, odd colors, grey-looking shadows or plastic textures can be signs that you have gone too far.

A preset applies saved settings. It can be a starting point, but it cannot know the light or what you want the photograph to say.

For sharing: export a JPEG copy. sRGB is a sensible color-space choice for general web use. Follow the destination's size guidance and keep your full-size original.

A REPEATABLE WAY TO BEGIN

YOUR SHOOTING ROUTINE

Look. Choose. Shoot. Check.

01 **Choose the subject.**
What should the viewer notice first? What needs to stay in the picture?

02 **Find your position and light.**
Look at the background, shadows and reflections. Move before reaching for more settings.

03 **Decide what matters most.**
Movement? Start with the shutter speed. Background blur or several sharp objects? Start with the aperture.

04 **Set focus and check brightness.**
Put the focus point on the important part. Use the camera's exposure as a starting point, not a final verdict.

05 **Take the shot.**
Hold steadily, wait for the moment and press the shutter.

06 **Review one thing at a time.**
Is the subject sharp? Are important bright areas intact? Is the frame clear? Change the setting linked to the problem.

Example / A person beside a window

Find a simple background. Ask a person to turn slightly towards the light. Use A/Av and an aperture that keeps the face sharp. Focus on the nearer eye. Check the shutter speed is fast enough for their movement, then take a photo and review it.

There is no single settings recipe here. A still person, a moving child and a group need different choices, even in the same room.

REPEAT THESE WITH ORDINARY SUBJECTS

FOUR SMALL LESSONS

Finish each session with something you can explain.

01 / The background

Put an object in front of a busy background. Make three photographs: from your first position, from a different angle, and with more distance between the object and background.

Ask: which change made the subject easier to notice?

02 / Sharp and soft

Use A/Av and Auto-ISO. Photograph the same still subject at a low f-number and at f/8. Keep your position and focus point the same. Use support if the shutter speed gets slow

Ask: what happened to the background, and what settings did the camera change?

03 / Freeze or blur

In good light, photograph running water at several shutter speeds using S/Tv and Auto-ISO. Keep the camera steady and dry. Check for exposure warnings.

Ask: which version describes the movement best?

04 / Tell a small story

Choose an everyday activity with permission from anyone involved. Make one wide photograph showing the place, one showing the main subject, and one detail. Edit the three so they feel related.

Ask: does each frame add something different?

After each session: write down one thing that you noticed and one thing you want to try next. Bring those notes to a lesson, or use them when practicing on your own.

CHECK THE CAUSE BEFORE CHANGING EVERYTHING

SOMETHING LOOKS WRONG

Start with the problem you can see.

What you see	What to try first
The subject is too soft, but the background is sharp.	Move the focus point onto the subject. Use continuous focus if its distance is changing.
A moving subject is blurred, but the setting is sharp.	Use a faster shutter speed if you want to freeze it.
The whole frame looks shaky.	Improve your hold, use support or try a faster shutter speed. Also, check focus.
Only one person in a group is sharp.	Use a higher f-number, arrange people at more similar distances and check your focus position.
The subject is too dark against a bright background.	Find a less bright background or more light on the subject. Positive exposure compensation may help, but can lose background detail.
Important bright areas are plain white.	Reduce exposure and check the highlight warning. In automatic exposure modes, try negative compensation.
The photo looks orange, blue or green.	Check white balance and the light source. Simplify mixed light if possible.
The photo looks noisy.	Find more light, or collect more with a wider aperture or longer shutter time if the subject allows. Lowering ISO alone is not a cure.
The background keeps stealing attention.	Move, change your camera height, simplify the frame or increase subject-to-background distance.

> Make one change, take another photograph and compare. If you change everything at once, it is harder to know what helped.

PLAIN-LANGUAGE REMINDERS

USEFUL WORDS

You can look these up as you go.

Aperture
The adjustable opening inside the lens. Shown as an f-number.

Shutter speed
The time the camera collects light for one photograph.

ISO
A setting that affects image brightness without collecting extra light.

Exposure
The light collected during a photograph. Also used informally when discussing how bright a photo looks.

Stop
A doubling or halving of light, or an equivalent step in a setting.

Focus
The distance where the lens makes things sharp.

Depth of field
The range of distances that looks acceptably sharp.

Focal length
A lens measurement in millimeters. On the same camera, a longer focal length gives a narrower view.

Perspective
How near and far things appear in relation to each other, determined by where you stand.

White balance
An adjustment for the color of the light.

Highlights / shadows
The brighter and darker parts of the photograph.

Clipping
Tones reaching the limit, where bright or dark detail can be lost.

Histogram
A graph showing how image tones are distributed from dark to bright.

Exposure compensation
A way to ask automatic exposure for a brighter or darker result.

Noise
Random-looking speckles or color variation, often more noticeable when little light was captured.

Composition
How you arrange the subject and everything around it inside the frame.

> Understanding the photograph matters more than remembering the vocabulary.

BEFORE. DURING. AFTER.

FIELD CHECKLIST

You do not need to get everything right at once.

Before you start

- ☐ Battery charged and card ready.
- ☐ Lens front clean.
- ☐ Location safe; permission where needed.
- ☐ Check settings left from last time.

Before you press

- ☐ One clear subject.
- ☐ Useful light and background.
- ☐ Focus on the important part.
- ☐ Shutter speed suits the movement.

After the first photograph

- ☐ Zoom in: is the intended subject sharp?
- ☐ Check important bright areas for lost detail.
- ☐ Check the edges and background.
- ☐ Change one thing, then compare.

Need less blur?

Check focus and try a faster shutter speed.

Need more sharp depth?

Try a higher f-number. Watch shutter speed.

Need better light?

Move the subject, move yourself or try a different time.

One thing I want to practice next

Keep making photos. Notice what works, ask why, and try again with a different subject.

ROBERT TUDOR
www.robertudor.com / @r.tudor