

Shutter Speed

(for DSLR's & Phones)



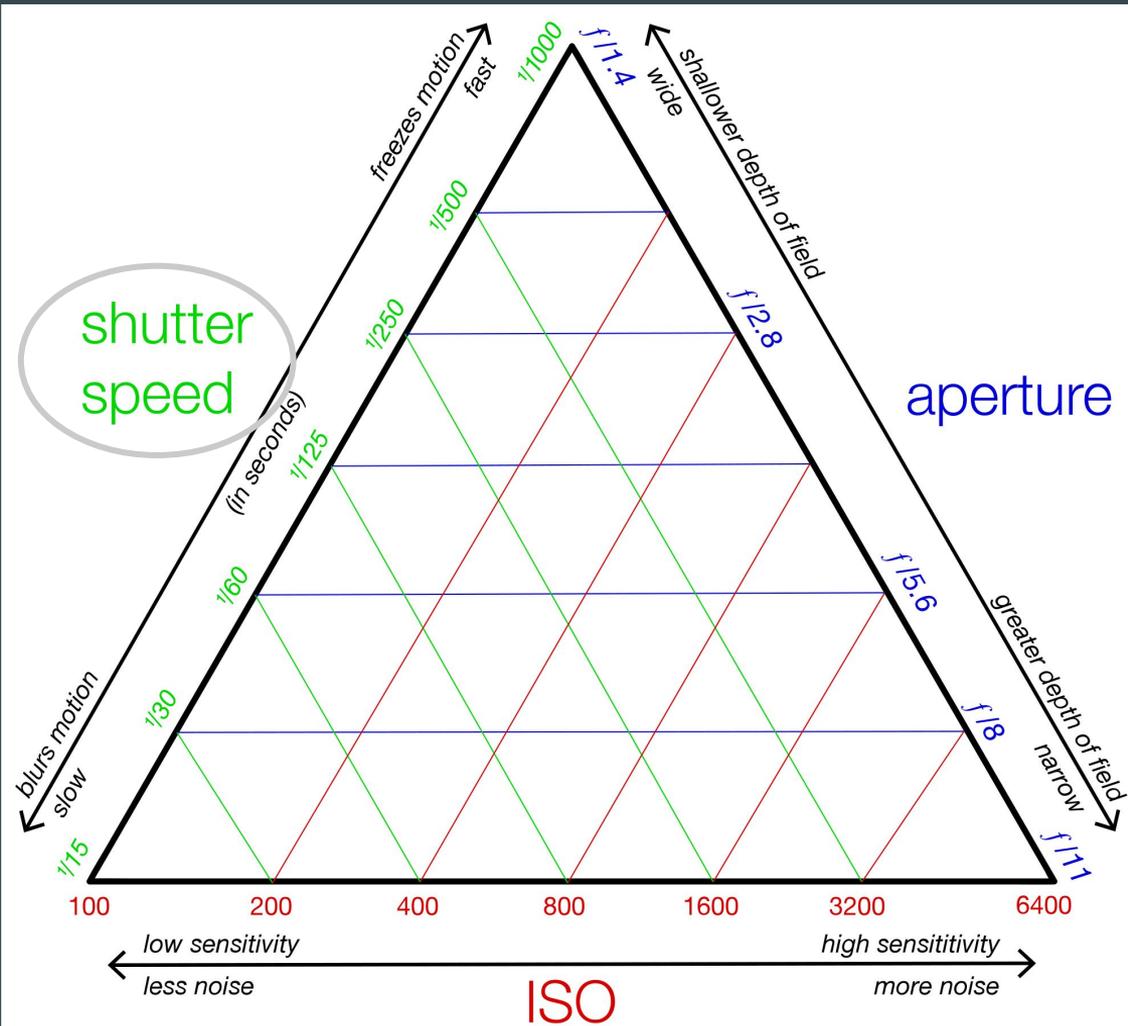
The *Fast* and the Slooooooow

The Exposure Triangle

Shutter Speed is another part of the *Exposure Triangle*.

Changing the shutter speed affects how much light enters the camera.

It also has an important creative effect controlling how motion is shown in an image.



What is Shutter Speed?

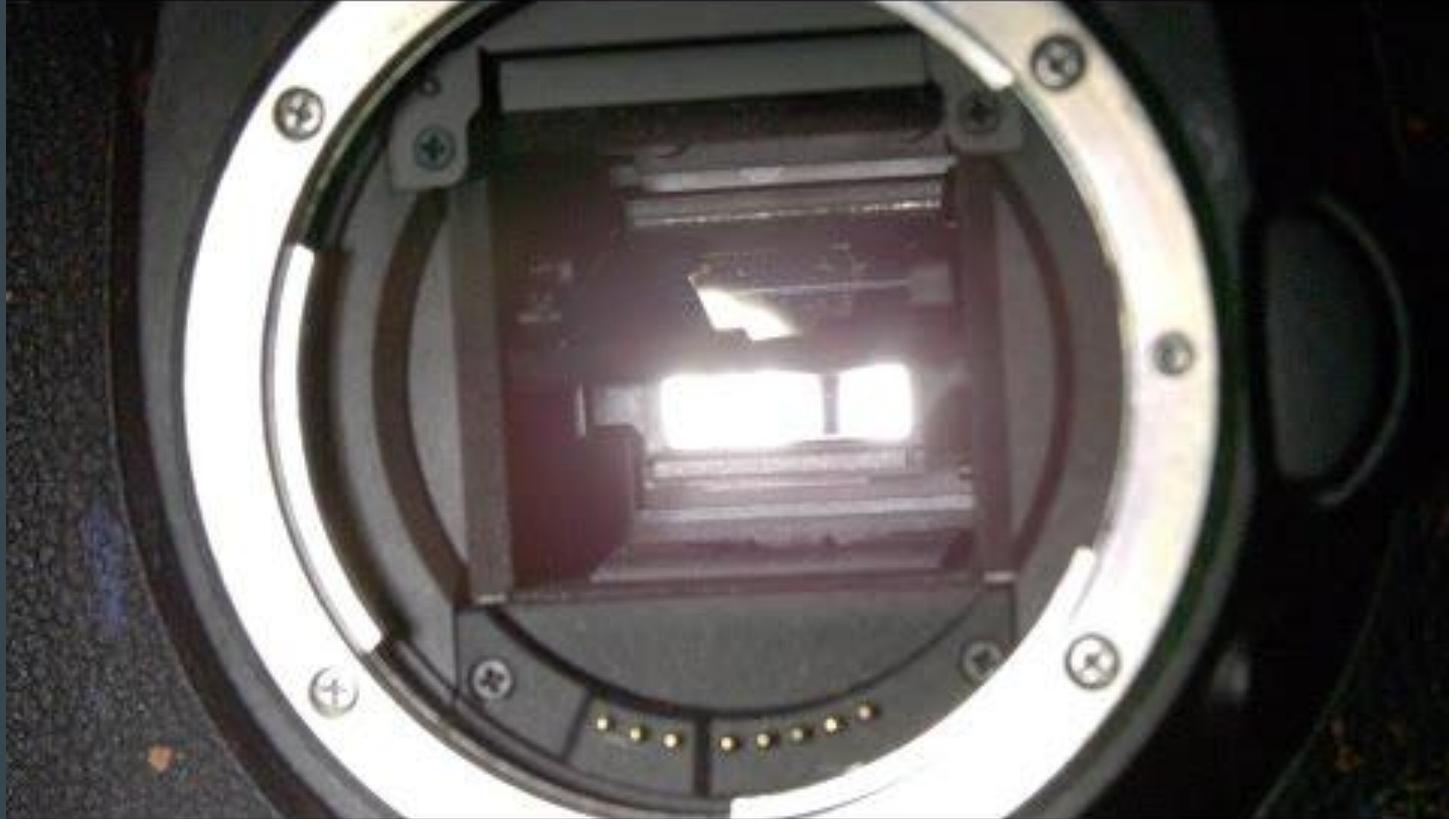
Also known as *Exposure Time*, it is the length of time a camera shutter is open to allow light onto the camera sensor.

- If the shutter speed is *fast*, it can **freeze motion**.
- If the shutter speed is *slow*, it can create **motion blur**.



The inner workings of an SLR camera.

You can stop video at 4:29
(unless you want to learn about how mechanical shutters effect video)



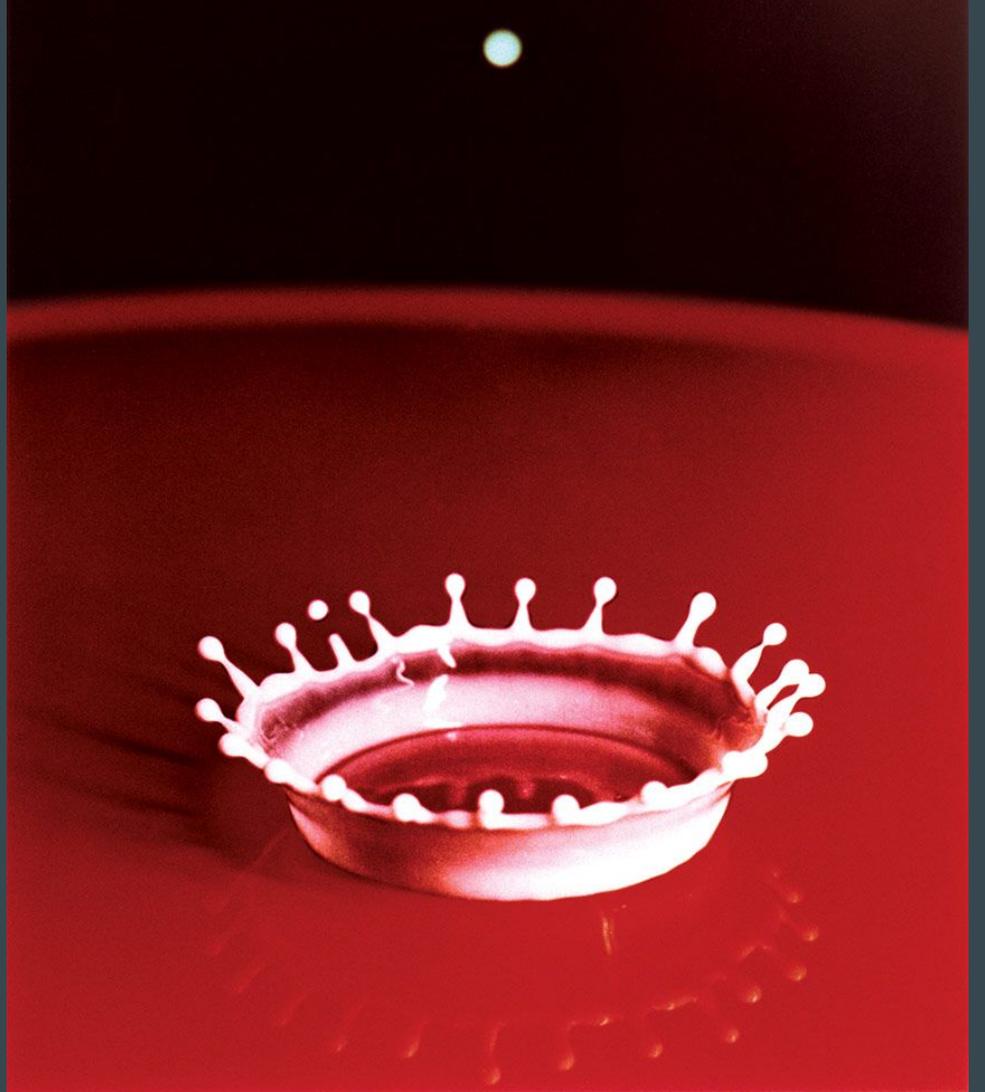


If you click the  button on top of the camera, the exposure settings will appear on the screen

This is your **Shutter Speed**



Frozen Motion



Frozen Motion

Frozen motion is created using very fast shutter speeds.

Minimum Shutter Speed for Freezing Motion

Person walking:	1/125th - 1/250th sec
Person running:	1/500th - 1/1000th sec
Sports (Football, basketball):	1/500th - 1/2000th sec
Flying bird:	1/800th - 1/2000th sec
Moving car (30-35 mph):	1/1000th - 1/2000th sec
Auto racing:	1/1000th - 1/8000th sec

FAST SHUTTER SPEEDS

- Faster shutter speeds mean **LESS LIGHT** entering camera
- *Daylight* and *Bright* lighting work best
 - Images will appear dark or even black if the shutter speed is too fast for your lighting situation
- No tripod required



FAST SHUTTER SPEEDS

- Continuous or Burst Modes can help capture multiple shots by holding down the shutter release button



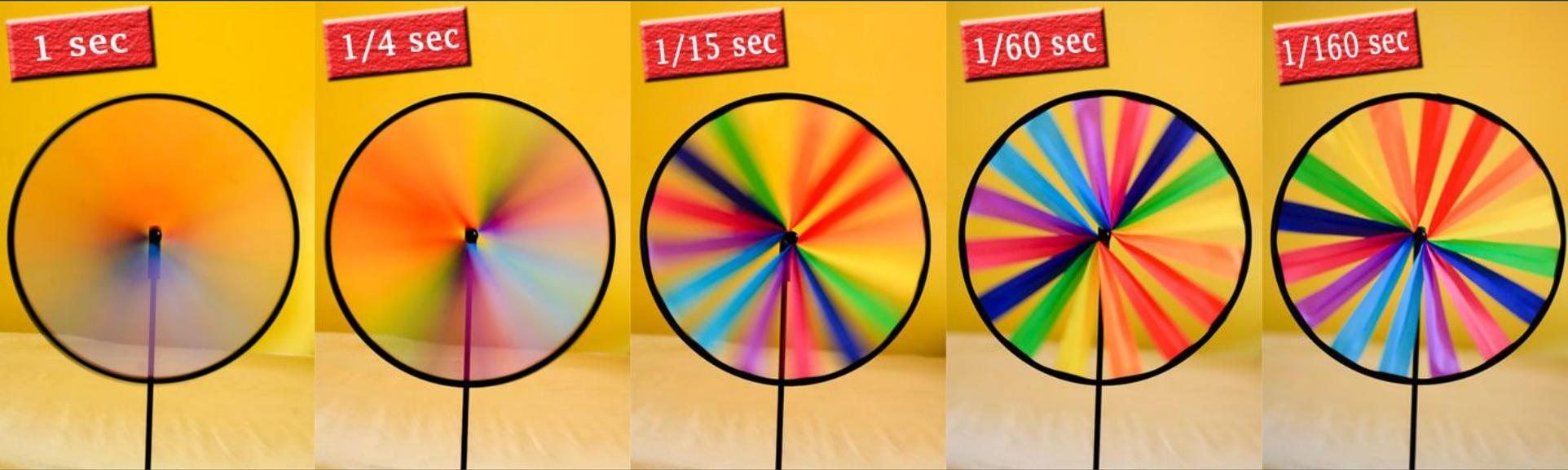
- Timing is very important to capture the apex of motion
- Fast Shutter Speeds will be about 1/125th of a second and up

Motion Blur



Motion Blur

Motion blur is created using slow shutter speeds



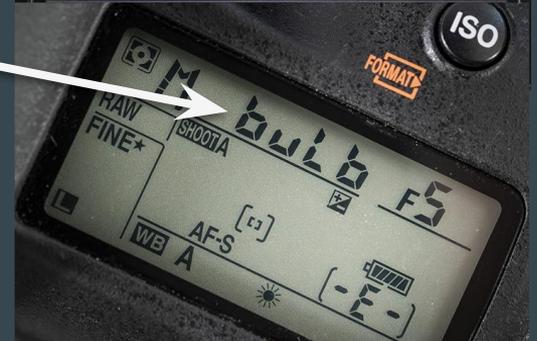
SLOW SHUTTER SPEEDS

- Slow shutter speeds mean MORE LIGHT entering camera
- *Nighttime* and *Dim* lighting work best for motion blur
- Tripod required for clear backgrounds
 - You could also place camera on a steady surface
- Moving Objects = Blur
- Still Objects = Clear



SLOW SHUTTER SPEEDS

- Slow Shutter Speeds are 1/30th second and slower
 - Some cameras list the shutter speed as a whole number
 - EX: 125 = 1/125th of a second
- A number with " = full seconds
 - EX: 30" = 30 full seconds
- **Bulb** - The shutter will stay open as long as you hold the shutter release button
 - Only works on full Manual Mode (M)



Let's Test It Out!

Round 1:

Fast Shutter Speed

Round 1:

Fast Shutter Speed

- Find objects around the classroom, your house, or neighborhood that are moving fast and consistently.
 - EX: A fan, Water dripping from a faucet, a Dog's tail wagging, cars driving by, etc.
 - If you have a person to photograph, you could have them jump, flip their hair, wave arms, blow bubbles, etc.
 - More ideas [here](#)
- **Work in a bright space** (outside or strong lighting)
- Take at least 3 photos of your subject and adjust your shutter speed until you are able to freeze the motion (no blur)

Specific directions for your camera type on the next 3 slides



dSLR & Class Cameras

- Set your camera to Shutter Priority (S)
- Use dial on camera to adjust shutter speed

Round 1: Take 3+ pictures of your scene

- Start with 1/100 and increase shutter speed until your image has no blur
- Take at least 1 photo at your max shutter speed (usually 1/4000)
- Try using [burst mode](#) to capture multiple photos consecutively

SHUTTER PRIORITY MODE



Point & Shoot Cameras

Some cameras have Shutter Priority Mode and you can use them just like the dSLRs on the previous slide.

If there is no Shutter Priority mode, there are several auto modes that use shutter speed.

Round 1: Take 3+ pictures of your scene

- *Child & Sports Modes* both work for fast shutter speeds

Make Sense of Shooting Modes

	Auto Mode The camera will automatically try and choose the best possible settings. In auto mode, there's no need to mess with any of the settings. Just point and shoot.
	Portrait Mode Keeps your subject sharp while creating a beautifully blurred background
	Landscape Mode Designed for capturing sweeping vistas or huge crowds. In this mode, your camera increases the Aperture f-stop number in order to maximize depth of field. Objects both near and far will be in sharp focus
	Child Mode In this mode, clothing and backgrounds are colorful while keeping skin tones soft and natural looking. Shutter speed is also increased to capture kids who are a bit more wiggly
	Sports Mode The camera uses a faster shutter speed to capture fast-moving objects. Essentially allowing you to 'freeze' action scenes.
	Close Up Mode The camera uses a smaller aperture to improve depth of field. Perfect for macro shots, close-ups of flowers, insects, and other objects
	Night Portrait Mode The camera uses a slower shutter speed and flash to capture more light. Useful in low light situations. But use a tripod to avoid camera shake
	Manual Mode This is designed for experts who want complete control over their camera settings. In this mode, you choose the shutter speed, aperture, and ISO

	Aperture Priority This is a semi-automatic mode that allows you to choose the aperture yourself. The camera will automatically set the shutter speed that will produce the proper exposure. The semi-automatic modes are a great place to start when you're first venturing out from full automatic
	Shutter Priority Allows you to choose the shutter speed yourself. The camera will automatically select the aperture (f-stop) that will produce a proper exposure
	Program AE Mode The camera sets the shutter speed and aperture but you control flash, white balance, ISO, etc...
	No Flash Same as full auto mode, but with flash disabled
	Creative Auto Same as full auto mode, but with a little more control over focus, exposure and color



Smartphone Cameras

Most phones shoot at a high speed in bright lighting, but they don't use an actual shutter

- iPhones: Shoot in Burst Mode or Slo-Mo
 - Burst Mode: Hold down button to trigger burst mode
 - Slo-Mo: Record video, then screenshot best frame
- Samsung: Pro Mode lets you control Shutter Speed
 - Many other models also have Pro or Manual modes
- If you don't have a pro mode, see last slide for camera app recommendations

Round 1: Take 3+ pictures of your scene

- Play with changing your lighting, burst mode, and increasing your shutter speed if you can



Turn in Photos

Upload your **EDITED** images to the “Frozen Motion Assignment” on Canvas.

3 different photos on a collage showing 3 different things moving that are frozen in time.

Make sure you edit your pictures, so the colors are popping and it doesn't look like it's straight out of the camera.

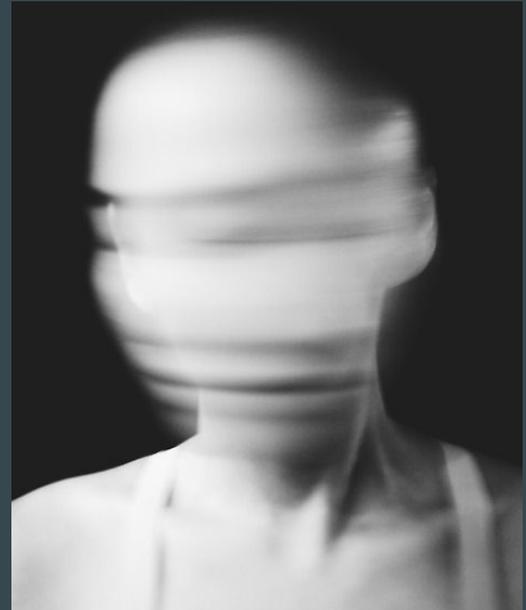
Round 2: Slow Shutter Speed

Round 2:

Slow Shutter Speed

- Find objects around the classroom, your house, or neighborhood that are moving fast and consistently.
 - EX: A fan, Water dripping from a faucet, a Dog's tail wagging, cars driving by, etc.
 - If you have a person to photograph, you could have them jump, flip their hair, wave arms, blow bubbles, etc.
 - More ideas [here](#)
- **Work in a lighting situation of your choice**
- Take at least 3 photos of your subject and adjust your shutter speed to create motion blur.
- Make sure your camera is on a tripod or steady surface

Specific directions for your camera type on the next 3 slides



dSLR & Class Cameras

- Set your camera to Shutter Priority (S)
- Use dial on camera to adjust shutter speed
- Use Manual Focus
- Setup camera on tripod or steady surface

Round 2: Take 3+ pictures of your scene

- Start with 1/30 and decrease shutter speed until you get an interesting motion blur
- Take at least 1 photo at 10" or slower

SHUTTER PRIORITY MODE



Point & Shoot Cameras

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Round 2: Take 3+ pictures of your scene

- Use a tripod or set camera on steady surface

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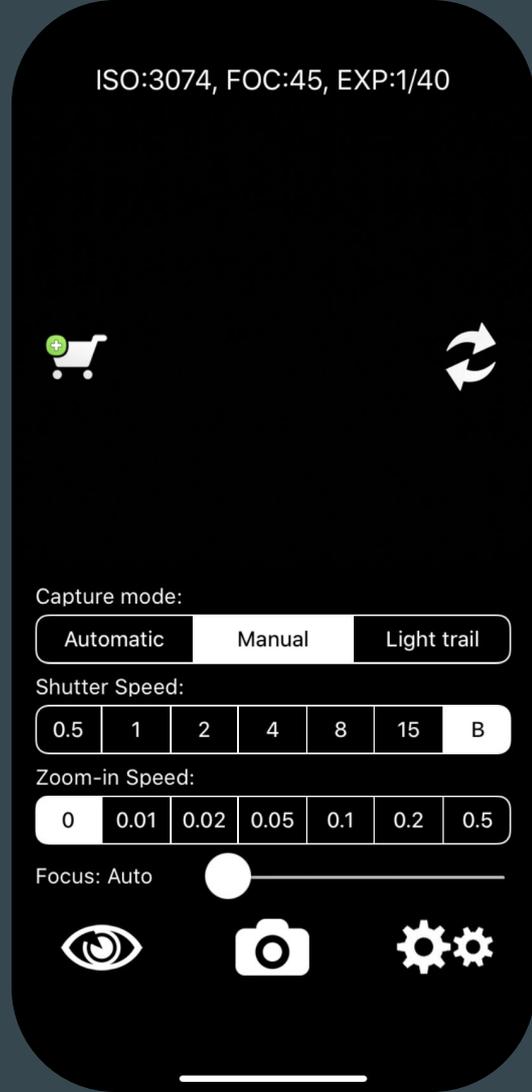


Smartphone Cameras

- Best Option: Download “Slow Shutter Fast Cam” App
 - See [this video](#) and [this video](#) on how to use
- iPhone: [Slow Shutter & Live Mode Demo](#)
 - Swipe up on photo and select Long Exposure
 - Newer iPhones have shutter speed option in low light
- Samsung: Pro Mode lets you control Shutter Speed
 - Many other models also have Pro or Manual modes
- Use [DIY phone stand](#) or set on steady surface to reduce camera shake

Round 2: Take 3+ pictures of your scene

- Play with changing your lighting and exposure time to capture motion blur



Turn in Photos

Upload your **EDITED** images to the “Motion Blur Assignment” on Canvas.

- 3 best photos showing

Motion Blur (Slow shutter speed)

- Make sure to edit your photos for exposure and color



Shutter Speed FAQ

Why are my photos black?

If you are shooting a fast shutter speed, less light is getting into the camera and may *underexpose* your photos (make them darker)

Try:

Taking your lens cap off
(just kidding.....sort of...)

Lowering your shutter speed

Adding light to your scene

Raising the ISO

Why are my photos white?

If you are shooting a slow shutter speed, more light is getting into the camera and may *overexpose* your photos (make them lighter)

Try:

Increasing your shutter speed

Reducing light in your scene

- Lowering the ISO

Why is everything blurry?

If you are shooting a slow shutter speed, all movement will be shown in your photos including camera shake.

Try:

Checking that your lens is focused (manual is best for this)
Using a tripod or setting camera on a steady surface

Which apps should I download?

* = Highly recommend

Camera Apps that let you control manual settings

Free

- ***Adobe Lightroom** (Fast Shutter)
- ***Slow Shutter Fast Cam** (Slow Shutter)
- Manual Camera Lite
- Camera F-V5 Lite
- Open Camera
- ProCam

Paid

- Pro Camera by Moment (\$5.99)
- Manual Camera: DSLR (\$4.99)