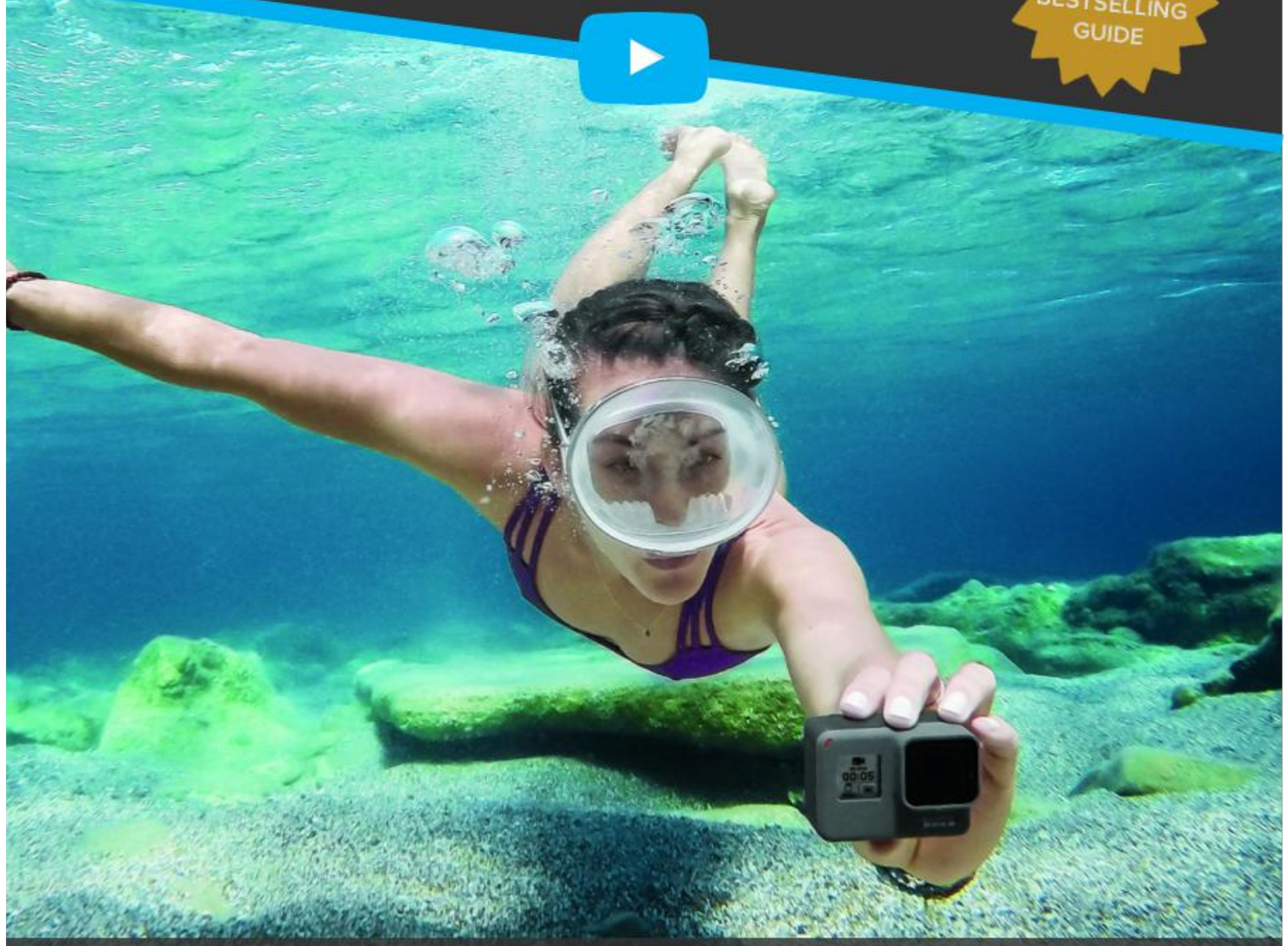
THE GOPRO HANDBOOK

A PROFESSIONALS GUIDE TO FILMMAKING

- Second Edition -

#1 BESTSELLING GUIDE



PROJECT GOPRO

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The GoPro Handbook: A Professionals Guide to Filmmaking

About the Author

The GoPro Handbook was written by Andrea Magri, an Italian filmmaker, long-term GoPro user, and head writer at Project GoPro.

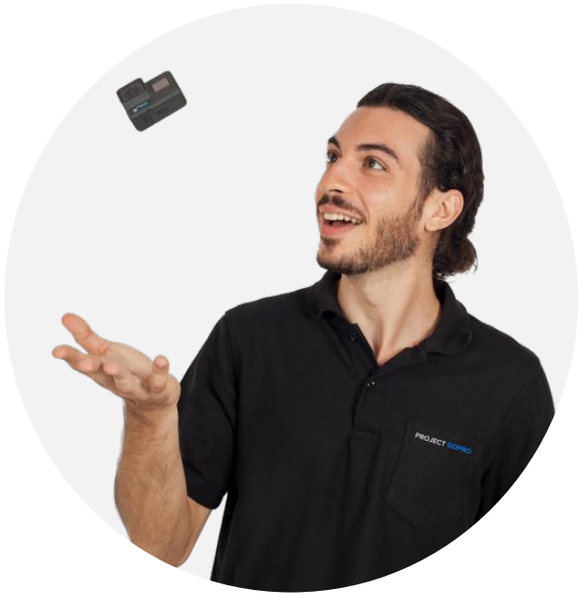
Since earning his Bachelor of Electronics Engineering from the University of Brighton (UK), Andrea has traveled the world as a professional filmmaker, combining his two passions, art and technology, to create location-based and human-interest stories people love to watch. Wherever Andrea goes, a GoPro is always nearby.

The idea for The GoPro Handbook came as a result of many of Andrea's network asking for his help editing videos, shooting a time-lapse or simply how to set up their GoPro to get the best and most cinematic shot.

Moreover, with so many people using GoPro as a gateway to the world of videography, Andrea knew he had to do something. Launching Project GoPro and writing The GoPro Handbook is Andrea's way of giving back to his profession and sharing his expertise and passion for GoPro filmmaking with as many people as possible.

"My mission is to help you better understand the GoPro camera and through it, become better filmmakers. I want you to learn and grow just as I did when I first started shooting. I wrote The GoPro Handbook with exactly this purpose in mind; I truly hope it helps and inspires you to become as passionate as I am about the exciting world of GoPro filmmaking."

– Andrea



About ProjectGo.Pro

ProjectGo.Pro is the largest GoPro site for beginners with easy to understand tutorials for mastering the basics and beyond.

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INTRODUCTION

There’s something truly impressive about GoPro’s advertising. The jaw-dropping POV (point-of-view) of a snowboarder going over a jump, or the scrappy skateboarder tricking in some urban skatepark. On any other camera, these scenes are Youtube noise. But shot on a GoPro, and these scenes become truly impressive works of art.

It's downright motivating! Who wouldn't want to have footage of themselves doing amazing things from previously unobtainable angles? Who wouldn’t want to share these experiences with friends and family, or perhaps the world?

For many people, GoPro’s advertising is what inspired them to invest in a camera that fits in their pocket. But alas, for many of those same people, this is where the inspiration ends. Don’t get me wrong, the GoPro camera is a supremely powerful tool, capable of equally powerful things. But simply purchasing the camera isn’t enough.

None of the people involved in GoPro’s advertising footage – or any other amped up GoPro videos you’ve seen – were expert shooters right out of the box. Their videos were like yours now: unpracticed and (possibly) disappointing.

Even the most polished amateur videographers had to put in the hours before discovering the best ways to capture the amazing footage that likely prompted you to buy a GoPro in the first place.

Now that you’re a GoPro owner and user, you need to understand not just what this little box can do, but how best to do it, when to do it and where. That’s how this book can help. Here’s a little secret, which really isn’t a secret at all: The only difference between you and the people who shoot GoPro ads is information and application.

Seriously. You’re using exactly the same camera and peripheral equipment – they’ve just had more time to study it and apply that knowledge.

With the practical information in this book, you'll understand and be able to apply everything from the storytelling essentials and ideal in-camera GoPro settings, to advanced shooting techniques and equipment. This is powerful stuff! Successfully harnessing this new GoPro power can’t happen without

practice. So we encourage you to get out there after each lesson and do just that – often.

We put quite a bit of work into this project to create a fun and coherent way to learn. To make this book as useful as possible, we avoided getting into the more rudimentary topics that you can figure out on your own. Instead, we explore the aspects of GoPro use that get you the highest quality results sooner – with practice, of course.

Before we dive lens-first into 100+ pages of valuable GoPro information, we'd like to thank you for purchasing this book! We created it because we were inspired by GoPro's potential; we believe anyone with a GoPro camera, or the hope of owning one, can be inspired to create visually jaw-dropping masterpieces, share them with the world, and inspire others. So get out there and show us your world the way it was meant to be seen.

Chapter 1

GOPRO BASICS

MENU SETTINGS AND OPTIMAL CAMERA POSITIONING FOR DIFFERENT SITUATIONS AND ACTIVITIES.

Section 1

RESOLUTION

WHAT IS RESOLUTION?

Resolution refers to the number of pixels in a digital image. The higher the resolution values (height x width), the more detail. High resolution video (a.k.a., high definition or HD) can be played on larger displays without noticeable defects (pixelation, distortion, etc.), whereas low resolution (480p), will appear poorer in quality on those same screens.

WHY DOES IT MATTER?

Your resolution should be chosen based on both your subject/location and the planned viewing platform. For example, a video shot in 4k resolution will be unplayable on many mobile devices and several online streaming sites.

As a GoPro owner, you've probably heard about things like 1080p or using higher frame rates for action shots. But what does it all mean?

At its core, understanding resolutions on your GoPro is one of the keys to creating enjoyable, professional-quality content.

Here, you'll learn the various resolutions available on your GoPro and how to select the best one based on what and where you're shooting.

1 IMAGE QUALITY: JUST THE FACTS

Let's set the record straight about image quality right now: 1080p resolution will not look the same when produced on several different cameras.

This is because all cameras have different image sensors and processors, both of which play a huge role in a camera's resulting image quality.

Look at it this way: When configured in a particular capture mode, your camera communicates with its image sensor to let it know how much of it to use to produce the shot. For example, recording in *1080p Linear* requires only a small portion of the overall image sensor.

Another way to understand this, is with a comparison to a traditional digital camera's sensor capabilities. GoPro's HERO 6 Black Edition full size has the image sensor equivalent to a 12MP DSLR, which would produce 4000 x 3000 pixel images. If you take 12MP photographs with the HERO 6 Black Edition, you're using the full potential of its image sensor and capturing 4000 x 3000 pixel photographs every time. If you downgrade to 5MP captures, you're utilizing a smaller portion of the image sensor, which produces 2560 x 1920 pixel images. If you're shooting video, its processor captures those images at a given rate per second, resizes them to a certain dimension or "resolution", like 1080p or 720p, and saves them to a micro-SD card as a video file.

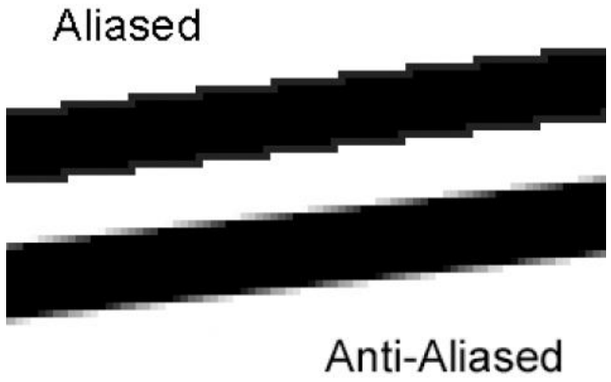
2 ALIASING

Another misconception about digital image quality, in this case when shooting video, is that a higher resolution must be matched with a correspondingly high frame rate. This is quite important and a "must-include" in your workflow if you want to avoid quality deficiencies such as "aliasing".

What is aliasing? Aliasing is caused when your camera's frame rate (number of frames shot in a

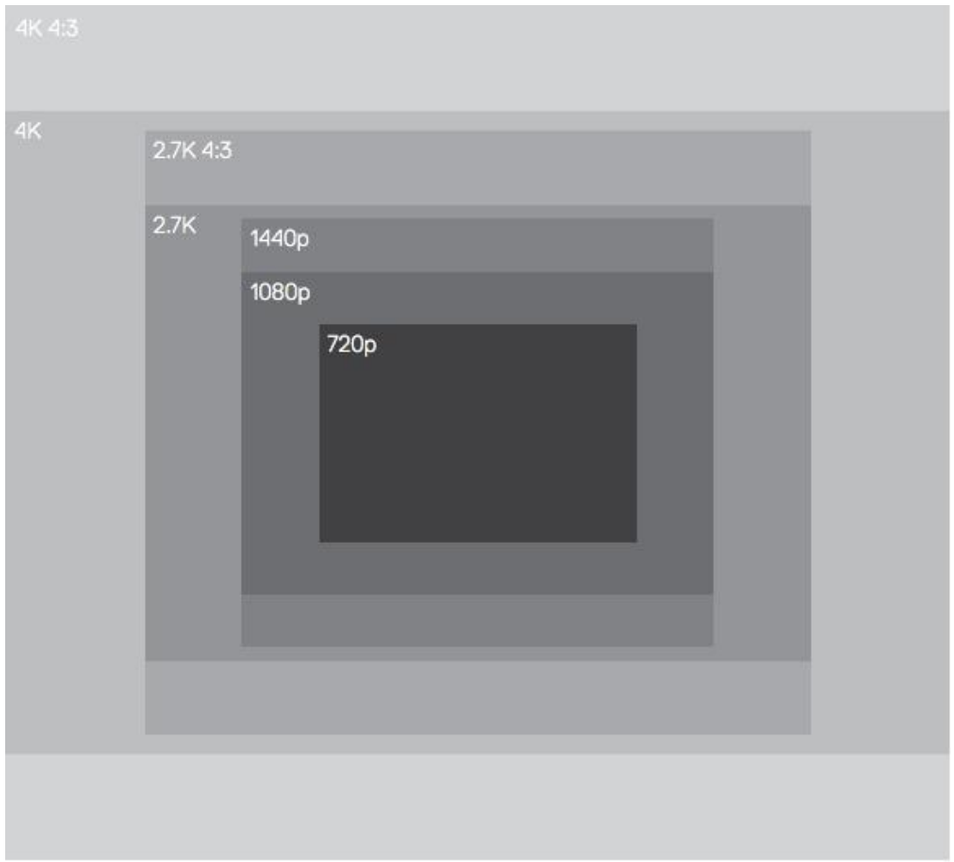
second) is too fast for your camera, even when it has the technology to compensate for this.

Practically speaking, shooting video with the GoPro HERO 6 Black Edition, at an impressive resolution of 1080p and a very fast 240fps may produce jagged edges or high contrasty images instead of a smooth look when capturing certain scenes. The solution is to bring your frame rate down to 120fps, half the number of recorded frames. Your camera will thank you and, oddly enough, produce better quality video...unless you're shooting for Spielberg or Scorsese, but that's a whole other book.



3 TYPICAL GOPRO RESOLUTIONS

Below is a diagram that provides a visual representation of the resolutions available on the HERO 6 Black Edition. You can see how the resolutions compare in size.



4 CHOOSE YOUR RESOLUTION

By now you're probably anxious to get right into some actual GoPro button pushing and screen tapping, but it's important to get these details right before moving on.

With your newfound knowledge on image quality, we can all agree that the highest resolution is NOT always best resolution.

Selecting a resolution will depend on:

1. **Viewing platform/hardware** (online streaming, TV screen, computer/laptop monitor): Most of these will support video shot in at least 1080p.

Video Resolution	Screen Resolution	Aspect Ratio
4k	3840x2880	4:3
4k	3840x2160	16:9 Cinema
2.7k	2704x2028	4:3
2.7k	2704x1520	16:9 Cinema
1440p	1929x1440	4:3
1080p	1920x1080	16:9 Cinema
720p	1280x720	16:9 Cinema

2. **Digital zoom capabilities in post-production:** A benefit of shooting in 4k is being able to apply certain post-processing effects such as digital zoom. Also, it's always recommended exporting a high definition file like 4k to a lower (but still high) definition resolution, like 1080p.

3. **Verifying your frame rate setting:** We've already gone over this but it's worth mentioning again, in brief. On the GoPro HERO 6, 4k resolution is only available up to 60fps. While a lower resolution like 1080p can stretch to 240fps.

4. **Your editing equipment:** If you shoot in 4k, it's important to have a computer and editing program that can handle it. Most newer computers are capable of editing 4k .

5. **Aliasing:** As previously explained, the resolutions that take a lot of processing power, like 1080p@240fps, could result in aliased footage.

5 RECOMMENDED GOPRO RESOLUTION SETTINGS

Resolution	Info
<720	Low res. Small file size. Used for smartphones and web.
1080p	Full HD. Produces a sharp and clean image.
1440p	Full HD. Produces a sharp and clean image, but aspect ratio is 4:3 (nearly a square image, like on older TV sets and old movies.)
2.7k	Excellent quality. Digital zoom is possible in editing.
4k	4x Full HD. Digital zoom is possible in editing or for large 4k screens. Big file size and drains battery very quickly during shooting.

H.265 (HEVC) Codec on GoPro

Normally GoPro encodes its videos with the well known H.264 codec (a video compression standard). However, GoPro HERO 6 and the newer models can now record using the H.265 codec depending on the selected resolution.

Ideally, this translates to better video quality.

What is H.265 (HEVC) Codec?

The High Efficiency Video Coding (HEVC) compression standard – also known as H.265 – allows GoPro's to capture higher video resolutions, such as 4K@60fps and 1080p@240fps, at roughly half the file size, but without compromising quality.

Compatibility of H.265 (HEVC) Codec

Adoption for this new standard is increasing, and is natively supported on Android 5.0+ and iOS 11 on newer phones and tablets with increasingly powerful processors. As well, HEVC is natively supported on Windows 10 and MacOS High Sierra on newer desktop computers with more powerful processors.

RESOLUTION SETTINGS USING H.265 ON HERO 6

Video Resolution	Frame Rate (NTSC)	Frame Rate (PAL)
4K	60 fps	50 fps
4K (4:3)	30, 24 fps	25, 24 fps
2.7K	120 fps	100 fps
2.7K (4:3)	60 fps	50 fps
1080p	240 fps	200 fps

FOV

Section 2

FIELD OF VIEW

WHAT IS FIELD OF VIEW?

In photography, field of view (FOV) refers to the area seen by a camera's sensor. Adjusting the FOV determines the viewing angle of the camera's lens which determines the amount of scenery the image sensor takes in.

WHY IT MATTERS

Knowing how each Field of View setting affects your image and camera performance will help you select the best option before you shoot.

GoPro's typical Field of View options are: Linear, Wide or Superview.

The images below illustrate the differences between each one. Linear uses a small area of the image sensor, which is similar to the look of a DSLR. Wide and Superview use a larger portion of the sensor to capture a wider image.

Superview: Fish-eye look | Great for action, interior, landscape.

Captures the widest FOV possible, giving you that signature GoPro immersive look. The frame is distorted because of its wide fish-eye lens.

It’s great for action shots but often times the image is too distorted. I wouldn’t use it as my default FOV option but you have room to capture many things in this setting. It’s also useful for fast action shots or shaky scenes (a wider FOV can minimize shaky footage).

Wide: Slight fish-eye distortion | Great for sports, landscapes, Vlogs

Wide still has a slight wide-angle feel but it’s not as distorted (fish-eye) as Superview. For this reason we prefer using Wide over Superview when possible.

Linear: DSLR-like wide lens feel | Great for portraits, close-ups

Linear FOV is most comparable to digital cameras with narrower angled lenses. This is the best option for non-action footage like interviews, close ups, Vlogs, etc.

KEEP IN MIND...

- Changing your GoPro's FOV will not change its resolution.
- Choose a FOV that works with your location and subject.
- Some FOV settings are available only in certain video modes. For example, Linear FOV is available in time lapse Photo mode but not in time lapse Video mode.
- Wide and Superview FOV options have a fish-eye distortion effect. This can make your videos look distorted or curved. If it's not what you want in your shots, you can correct it with editing software in post-production.

Section 3

FRAME RATE

WHAT IS FRAME RATE?

When shooting video, frame rate refers to the number of frames (or images) captured per second. These images, viewed in fast succession give the appearance of motion.

WHY IT MATTERS

Higher frame rates expand your options both artistically & in post production by allowing you to incorporate cinematic styling.

1 UNDERSTANDING FRAME RATES

To better understand frame rates, let’s look at what’s happening behind the scenes:

1. The image sensor captures a raw file.

2. The processor scales it to whatever resolution (1080p etc.)

3. This capture and scaling processes happens X number of times per second depending on the frame rate (30fps, 60fps etc.)

Seems fast, right? Maybe. What we need to figure out is why one frame rate might be better than another, and when it’s best to use them.

2 MAKE THE RIGHT CHOICE

To figure out how to select the best frame rate, let's take a look at an example from the film industry.

If you've switched on Protune (covered later) at any point, you may have noticed the availability of 24fps (available in 1080p resolution).

As GoPro's answer to professional market needs, Protune’s 24fps filming option was included because most of today’s film projectors run at that speed. In reality, the option provides filmmakers with a setting that saves time and money in post-production, because transferring video from 24fps to 24fps is easier than 30fps to 24fps.

Some film buffs refer to 24fps as "the holy grail" frame rate. To the untrained eye, the difference between 24fps and 30fps isn't noticeable. Some say the attraction of 24fps is the ease with which film can be edited. But for most people, it's no big deal. It's important to note that frame rates have a huge affect on the overall feel of a video. Using a higher frame rate is excellent for action shots, but it's not necessarily the best option.

The best way to decide your shooting frame rate is to determine the frame rate in which your final video will be rendered. If there are no specialty slow motion scenes or effects, keep it simple - 30fps is perfect.

The purpose of this section is to change your thinking about frame rates. Whereas before you might have thought that using a higher frame rate was always best, hopefully after this section you’ll understand that frame rates are used for more than just slow motion. Using 30fps or even 24fps instead of 60fps or higher can produce a completely different feel to your videos.

One important thing to remember is that changing frame rates mid-shoot will present challenges in post-production just as it would if you changed resolutions.

More changes when filming almost always means more challenges when editing.

QUICK TIP

To determine how slow your footage will be when viewed at 24fps, you can do a little math. It's easy, but you need to know what your produced/finished frame rate will be:

120fps(filmed) / 24fps(finished) = 5 times slower

See?

3 FRAME RATES AND BEST USE CASES

Despite the added editing time, filming at different frame rates can be useful. The following table will give you some potential scenarios and optimal frame rates.

24fps (PAL* & NTSC*)	Standard cinematic frame rate. No slow motion.
25fps (PAL) 30fps (NTSC)	Normal speed. No slow motion.
50fps (PAL) 60fps (NTSC)	For action shots (football games, drone fly-by, etc.). Slow motion @ 2x.
100fps (PAL) 120fps (NTSC)	Faster action shots (racing, white water kayaking, etc.). Slow motion 4x. Poor quality in low light conditions.
200fps (PAL) 240fps (NTSC)	For super fast action shots (ski jumping, etc.). Slow motion 8x. Bad quality in low light conditions.

**PAL and NTSC are different frame rate standards for different countries:*

PAL (25fps): common in Europe, Australia and parts of Asia.

NTSC (30fps): common in the U.S. and Canada.

KEEP IN MIND...

- Frame Rate refers to the number of frames per second of video.
- A high frame rate can be played back in slow motion and look cinematic.
- Choose 24fps, 25fps or 30fps if you don’t need slow motion.
- High frame rate is NOT suggested in low light.

Section 4

STABILIZATION

WHAT IS IT?

Electronic Image Stabilization (EIS) adjusts footage on the fly to offset for motion during capture. The result is smoother footage, especially in activities with fast motion, including cycling, motorcycling, and handheld captures.

WHY IT MATTERS?

Understanding the dynamics and limitations of GoPro's built-in digital stabilization will help you produce higher quality, smoother, footage, even in shakier situations.

Unless it's actually used as a filming technique, there's nothing more dizzying than having to sit through a whole video that looks like it was shot during an earthquake. This is why image stabilization was invented. This is why you need to use it.

Using an action camera like GoPro, by its very nature and purpose, basically necessitates the use of image stabilization features. First introduced on the GoPro HERO 5, it has only improved on later models, particularly on the

HERO 7, which now offers the best built-in video stabilization among its own kind and those of other action cameras.

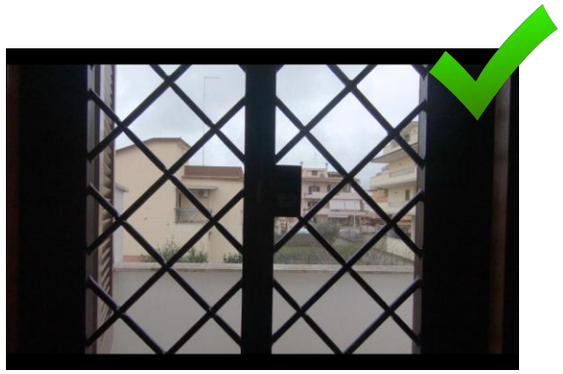
The feature was designed to smooth out vibrations and the jerkiness you get when you film hand held or without steady support.

GoPro's built-in stabilization is electronic, which means that the native RAW footage captured by the camera's sensor is not stabilized at first. The processor analyzes the footage just before writing or saving it to the microSD card.

The only side effect of an electronic built-in stabilization function is if the footage processed poorly, it can produce a video distortion effect called "Jello". It's more common in low light because the algorithm struggles to "see" or recognize certain elements within the frame, making the video unusable at times.

This is an example of a jello effect:

Low light
Stabilization On
Jello effect



Low light
Stabilization Off
No Jello effect

1 WHEN TO USE GOPRO VIDEO STABILIZATION

Based on what we already know, the best time to use this feature is daytime shoots and if you don't intend on stabilizing footage in post-production.

Until GoPro further improves the algorithm, which has already happened in the HERO 7, if you plan to edit your video afterwards, it's much better disabling the built-in GoPro video stabilization, and just do it in post-production with Adobe Premiere, Final Cut Pro X or any other professional video editing software with digital stabilization. This way you have more control over the level of stabilization you use for the exported result. In-camera, your choices are "on"or "off".

2 HOW GOPRO VIDEO STABILIZATION WORKS

For the camera's processor to use EIS, the algorithm needs to crop the frame by a tiny percentage around the edges (10% on HERO 5 and 5% on HERO 6). The cropped area provides a degree of tolerance around the rest of the video to keep it as stable as possible.

3 ELECTRONIC IMAGE STABILIZATION VS GIMBALS

VS

Despite the advances in Electronic Image Stabilization (EIS), it still has its disadvantages and limitations. These are the most common ones encountered by GoPro users:

- It's not available on all GoPro resolutions and frame rates
- It can produce an annoying jello effect or other artifacts to your footage
- The frame is cropped by anywhere from 5% to 10%

The alternative to using in-camera EIS is getting a gimbal, like the GoPro Karma. It will stabilize the whole camera body mechanically, smoothing out most

vibrations on the fly, thereby eliminating any potential jello effects commonly produced by the camera’s processor.

While gimbals are great tools for extremely shaky situations and low light shoots, the ease of use of GoPro’s built-in stabilization makes it convenient in most scenarios.

PROTUNE: TAKE CONTROL

I CAN DO THAT?

Yes. Protune is the GoPro equivalent of taking your point and shoot camera out of Auto mode and manually adjusting its settings. By default, your GoPro is programmed to automatically "understand" the conditions in which it's shooting and change its settings accordingly to obtain the best possible result. Enabling Protune essentially puts the steering wheel in your hands to give you more manual control and creativity. So instead of praying that your GoPro understands your vision, Protune gives you the power to carry it out yourself.

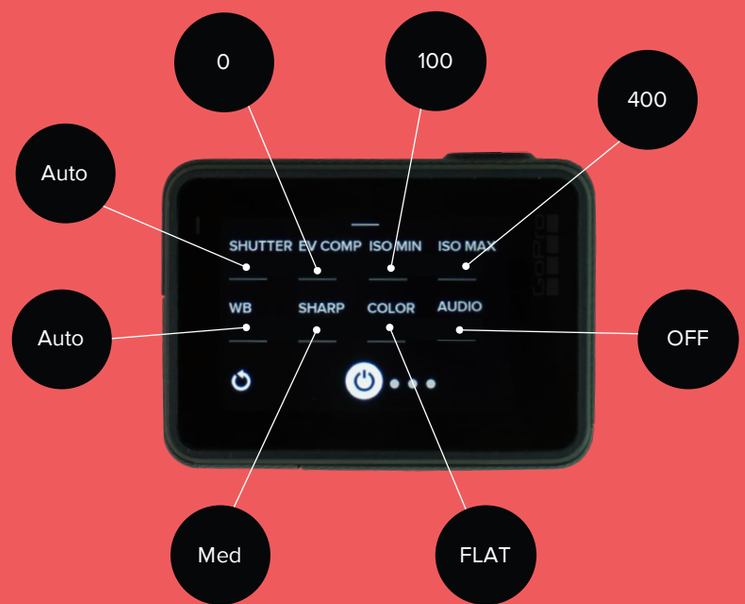
To start out, we're going to look at the fundamental changes Protune can have on our footage. Then later on we'll figure out how we can use these changes to get the results we want.

TURNING PROTUNE ON

MAIN MENU/
PROTUNE OFF

PROTUNE ON
(default settings)

RECOMMENDED PROTUNE SETTINGS



*The illustration was made with a GoPro HERO6, but Protune settings remain similar on other GoPro models that have the Protune.

Section 6

SHUTTER SPEED

WHAT IS SHUTTER SPEED?

The shutter is the camera component controlling how much light reaches the camera film or image sensor (by “opening” and “closing”). The slower the shutter speed, the more light allowed through to create the image on film or its image sensor.

WHY IT MATTERS

As shutter speed determines a camera’s image exposure, it’s important to set it in accordance with light levels. Allowing in too much or too little light can cause overexposure, making your footage or photos overly bright or too dark.

Unlike a DSLR camera's mechanical shutter, the compact GoPro shutter action is digital -- there are no moving parts at work. Conceptually, there's no difference in operational results: the slower the shutter speed, the more light allowed in, the brighter the resulting image (exposure).

GoPro’s shutter will open for a fraction of a second to allow light in and capture an image, then close it for the same amount of time. This is repeated as many times per seconds to match your frame rate.

By default, GoPro’s shutter speed is set to Auto, which means the camera will adjust its speed automatically, depending on its surrounding lighting conditions.

Manual mode gives you somewhat more control over your shutter speed. To balance intense light, go with a faster shutter speed (1/500, 1/800, 1/1000, etc.), and for darker or low light conditions, try something slower (1/50, 1/60, etc.).

HOW SHUTTER SPEED IMPACTS YOUR FRAME

Your GoPro's shutter speed can noticeably impact your video results, especially when it comes to capturing motion. A fast shutter speed, like 1/400th of a second, will produce a series of crispy video frames that could, upon playback, appear choppy. Conversely, a slower shutter speed, like 1/60th of a second, will produce softer and smoother video footage.

In videography, as a general rule, the number of frames per second (FPS) -- your frame rate -- at which you're recording should be approximately half of your shutter speed denominator.

Example:

Frame Rate (FPS) = 30, Shutter Speed = 1/60s

Frame Rate (FPS) = 120, Shutter Speed = 1/240s

If it seems impractical to change your shutter speed while recording video footage, that's because it is. A handy tip is to set your GoPro to Auto (if it isn't already) before you start recording. But if your lighting conditions seem to be overly bright or harsh, a helpful, low-tech product to consider adding to your kit is a GoPro ND Filter. It’s like a pair of sunglasses for your camera -- it filters harsh lighting, thereby inducing a longer shutter speed. It can also be used in both Auto and Manual modes.


WITHOUT FILTER
WITH FILTER
ND

ISO

Section 7

ISO LIMITS

WHAT IS ISO?

ISO measures the image sensor's sensitivity to light. A higher or lower ISO value setting means the image sensor is more or less sensitive to light, which results in either brighter or darker footage.

WHY IT MATTERS

High ISO values can produce "grainy" video footage. By understanding GoPro's ISO capabilities you will learn how to correctly adjust your ISO for any lighting situations.

1 ISO ON GOPRO

In Auto mode, your GoPro will vary its ISO value according to surrounding light levels. Flip on Protune and you can control ISO at your discretion. Default ISO levels range between ISO Min. (100) and ISO Max. (6400).

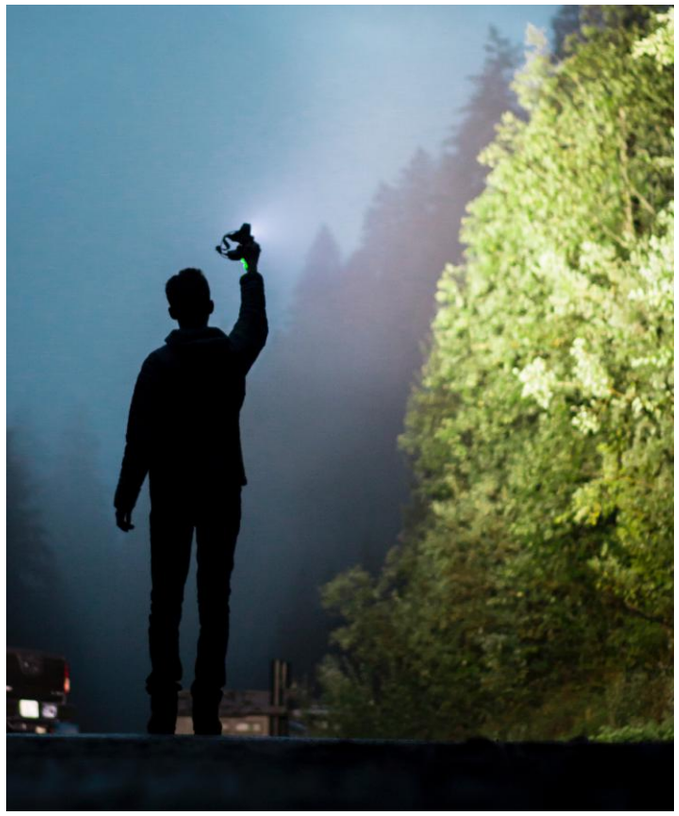
There are some risks to assuming manual control of your camera's ISO levels. Choose too low and you risk underexposed footage. Conversely, setting it too high may brighten your video, but you also risk producing a grainy effect -- something often called "noise". The following images show

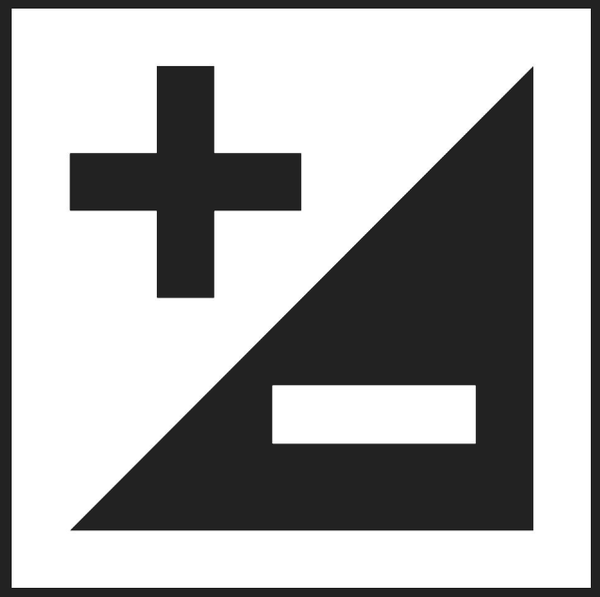
the differences between a well exposed photo with the maximum ISO level kept to a low value (eg. ISO max. 200) and a noisy photo having a higher ISO level (eg. ISO max. 1600). Although you can reduce image noise with editing software in post-production, it is recommended you keep ISO values as low as possible to avoid grainy footage.

2 SUGGESTED ISO LIMITS IN PROTUNE

To be safe and to avoid noisy images and footage, keep ISO min. at 100 and ISO max. at 200 or 400.

Finally, if you realize that your footage looks too dark in low light, instead of increasing your ISO levels, you might try using an external light source to brighten your setting, like in the image below.





Section 8

EV COMPENSATION

WHAT IS EV COMPENSATION?

Exposure Value compensation is a brightness assistive setting on your GoPro under the Protune option. By adjusting EV COMP, you can override the auto-calculated exposure to increase or decrease exposure.

WHY IT MATTERS

In situations where your GoPro is under- or over-exposing your target footage, this Protune feature lets you compensate on the fly to make faster exposure adjustments to suit your needs.

1 EV COMPENSATION ON GOPRO

Exposure Value compensation (EV) is a setting within a setting that gives you the option to adjust lighting levels within the enabled ISO Limit. So if your GoPro's default ISO setting is too dark or light, EV comp will allow you to make smaller adjustments to increase or decrease your image brightness.

EV compensation range is measured in "stops", where each stop is an incrementally higher or lower level of brightness.

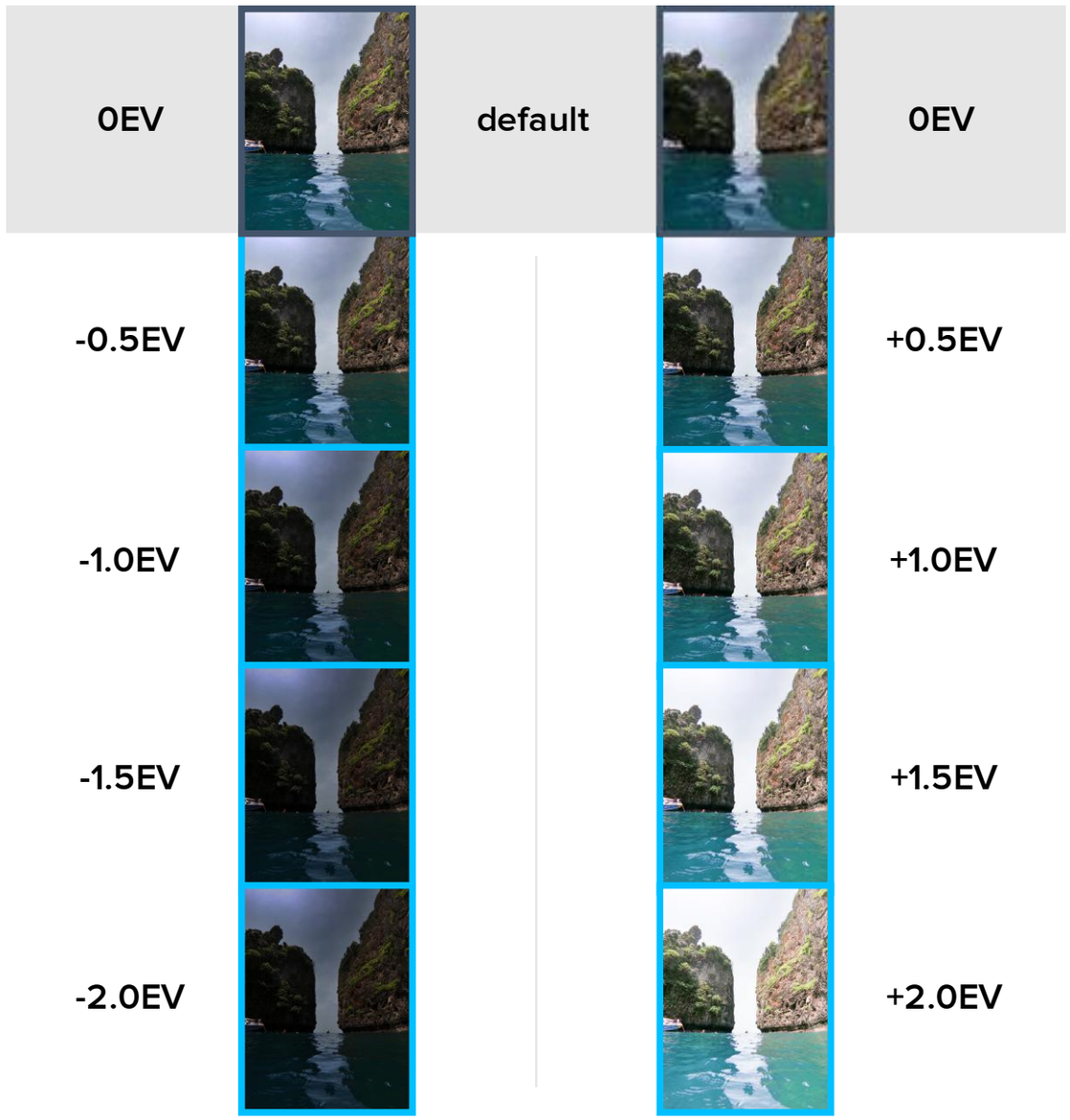
The range on GoPro is -2 to +2, in 0.5 increments:

- +2.0 (brighter)
- +1.5
- +1.0
- +0.5
- +0.0 (default)
- -0.5
- -1.0
- -1.5
- -2.0 (darker)

2 APPLICATION

Adjusting exposure compensation provides manual correction for environments with contrasting light conditions, such as a bright snowscape, a dimmed car interior, a heavily lit stage, sunset portraits, or any other divergent lighting affecting your subject's exposure.

The following image shows what an image might look like with several different EV comp stop increments selected:



Because this shot was adequately lit at the 0EV (default) level, there was no need to adjust EV compensation. For this image, a GoPro HERO 6 was used and it was set on Auto. Obviously, lighting conditions were fine.

EV compensating becomes evermore useful when shooting in Auto Shutter Speed so that the camera can still automatically adjust for light changes, but on a different exposure offset dictated by your compensation option.

Section 9

WHITE BALANCE

WHAT IS WHITE BALANCE?

White Balance measures the color temperature of your image in Kelvin (k), ranging from a cold bluish color to a warmer orange tint.

WHY IT MATTERS

In mixed light scenarios or indoor illumination, Automatic White Balance adjustment might be insufficient. Protune allows us to take full control of image temperature.

1 WHITE BALANCE ON GOPRO

Your GoPro’s white balance settings are used to adjust the color tones of your footage. In photography, adjusting white balance is done to remove unrealistic color casts from images. When done correctly, objects that appear white, in person, will render white in your footage.

By default, white balance is set to Auto, even when Protune is enabled. This means that the camera will try to understand the lighting temperature and compensate for the various lighting conditions in its surroundings.

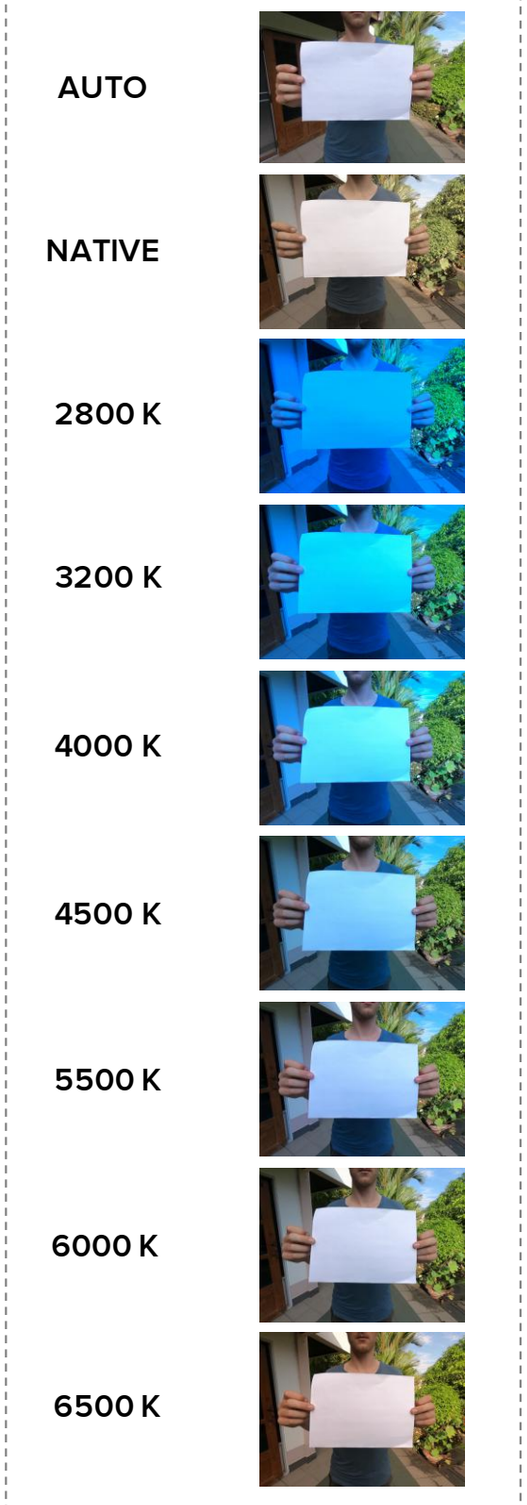
Measured using the Kelvin (k) scale, light has a relative temperature that can easily be described as either warm or cool. Whereas our eyes are great at adjusting for white balances in different environmental lighting conditions, cameras aren't always so diligent, leading to footage with unrealistic and unattractive color casts. A common and easily pictured example is the bluish tone often found in footage captured in snowy conditions. The result of this color tone is the camera's inability to adjust the white balance needed for that situation.

In these cases, I suggest you to take over your white balance settings and adjust it manually until you find the perfect white balance (white objects must look white in camera).

2 TEMPERATURE MATTERS

The HERO 6 provides several manual white balance presets, ranging from 2300 Kelvin (cold) to 6500 Kelvin (warm), in addition to its Native mode, which allows users greater flexibility in post-production.

WHITE BALANCE GRADING



So how do you know which white balance adjustments are needed for your video shoots? Simply put, if your setting seems to appear too “blue” or cold, offset this by adjusting your white balance to a “warmer” setting.

3000k

This WB setting is great for removing “warmer” color casts in situations such as standard incandescent bulb lighting (in many homes) or during filming where natural light is warm and abundant (sunrise/sunset).

However, in neutral daylight situations, using 3000k will add a blue tone to footage. This is best used when cooling down the color temperature of a shot.

5500k

This is a great WB setting for midday and bright light conditions. In neutral light 5500k provides a perfect balance. The way GoPro cameras handle this lighting condition makes the difference between 5500k and Auto hardly noticeable. Using 5500k is great to warm up conditions. As far as in midday sunny light situations Auto does wonders unless a subject is presenting drastic color temperatures for the camera to deal with.

6500k

In snowy conditions (ski hills) or in situations with overcast skies (most days in London), this is your go-to preset to get rid of that common blue color tone and to warm things up. Overall it's a great choice for outdoor shooting when light isn't too intense.

NATIVE

This is the GoPro white balance setting to use if you prefer making your color temperature adjustments in post-production editing. The resulting captured footage file can best be compared to a DSLR-shot RAW file. If you’re not planning on doing any post-production color editing, or you’re not sure how to, better to choose an alternative option.

3 COLOR TONE CONFUSION

In some situations, your GoPro’s Auto white balance setting can mistake a viewable object’s inherent warmth or coolness as an environmental lighting temperature disparity. Typically occurring in daylight situations when your GoPro is at its best, this

confusion can cause some intensely colored objects to appear desaturated or pale.

In these situations, a helpful tip is to manually set the GoPro's white balance to 5500k. It's such a slight adjustment off the camera's Auto setting in those lighting conditions, the noticeable difference in your footage would be negligible, but just enough to offset the disparity.

4 MIXED LIGHT MISFIRE

Mixed lighting presents another challenge for your GoPro's Auto white balance setting. Indoor shoots with both natural light and artificial sources -- for example, a florescent-lit warehouse with large, uncovered windows -- will cause your GoPro to simply average the color temperature measurement.

The effect is often inaccurate and unpleasant color tones that can dull even the most radiant footage - unless "average" is your intention (we hope not). The best workaround for this is to manually select a white balance preset or shoot in NATIVE mode and make adjustments in post-production.

Section 10

SHARPNESS

WHAT IS SHARPNESS?

A Protune option giving the user more control over the amount of fine digital detail in captured footage.

WHY IT MATTERS

Determining the amount of fine detail to allow in shot footage, using GoPro's settings, make your images look sharper and will shorten your post-production time.

With Protune enabled, GoPro offers three sharpness settings to make your footage more or less detailed. They are: Low, Medium and High.

In Auto mode, your GoPro will, by default, apply a high sharpness to your captures, which may in fact be too "crispy". This is often the case in low-light situations where a softer and less detailed image is needed to mask any potential image noise. Also, provided you're not using ND filters (GoPro "sunglasses"), finer detailed footage may not be ideal during brighter daylight hours. Set too high, sharpness can make your footage look choppy. So, if you find yourself in these scenarios, enable Protune, go to the Sharpness options and choose accordingly.

If you’re unsure of which Sharpness level to use, either stay in Auto mode, or it’s often recommended you stay in Medium or Low to avoid potential unwanted harsh and noisy footage.

The following image is a comparison of each Sharpness adjustment for footage shot with a GoPro HERO 6 in 4k. See if you can tell the difference in level of detail, particularly on the air conditioning unit’s flaps and in the surrounding shadows.

Section 11

COLOR

WHAT IS COLOR?

A Protune option that adjusts your footage to give it a seemingly more vivid look and feel.

WHY IT MATTERS

Enabling this option cuts down your post-production time quite a bit. But it also automatically adjusts your footage from its neutral style, putting you at your camera's mercy.

This Protune setting makes choosing very easy. You can keep it set to "Neutral", which is a flat, unadjusted color profile. Or you can switch it to "GoPro" style, bringing out your image's vivid color profile.

If you intend on color grading your content in post-production, keep it set to "Neutral". Your final footage will have a desaturated, flatter look so you can complete the grading in post-production. This will produce an image with a desaturated look that is perfect for color grading.

If practicality and time saving are what you want, keep the vivid GoPro look. It's actually pretty good.

The image below is a direct comparison between the two options, Neutral and GoPro, as shot with a GoPro HERO 6.

Note the desaturated tone in the flat profile versus the vivid and more contrasted colors of the GoPro color profile. Overall, the flat profile provides a better image quality. Better details are shown in highlights and shadows.

Section 12

RAW AUDIO

WHAT IS RAW AUDIO TRACK?

It allows you to create a stand-alone RAW audio track, which is recorded at a higher quality than the one embedded in an mp4 file.

WHY IT MATTERS

This option becomes useful if your video requires a degree of separate audio editing that can't be done to the video file's embedded audio track.

Another Protune control function, RAW Audio Track was introduced with the launch of the GoPro HERO 5 Black. Once all footage is shot, the RAW Audio Track-enabled soundtrack can be handed off to your audio experts to edit in a separate file on their own sound engineering equipment/tech.

When enabled, your GoPro will *automagically* create the separate raw audio file (as well as the standard .mp4 file) in the much cleaner and higher quality .*wav* format.

The following table is a breakdown of the incremental audio quality levels (Low, Medium, High) you can select once RAW Audio Track is enabled:

AUDIO OPTION	DESCRIPTION
Off (default)	No separate wav file created.
Low	Applies minimal processing. Ideal if you apply audio processing in post-production.
Medium	Applies processing based on the Manual Audio Control setting (wind and/or stereo). If Manual Audio Control is turned off, the camera automatically switches between wind filtering and stereo audio.
High	Applies full audio processing (automatic gain and AAC encoding).

BTW: GOPRO PHOTOS, TOO

PROTUNE

GoPro Advanced Settings are also available in Photo mode for you to take full control over the settings. They are similar to the video settings except for Audio, which is not present (or needed) in photo mode.

HDR

“High Dynamic Range”, or HDR, is a feature that works by layering multiple images taken at different light levels (more or less exposure). This allows the camera to adjust for both high and low light intensity levels; it’s best used when shooting a subject that is brightly lit from behind.

RAW PHOTO

On HERO 5 Black and later models, you can choose between two image formats when shooting stills: JPG and RAW (“.GPR”).

WHEN SHOULD YOU USE THEM?

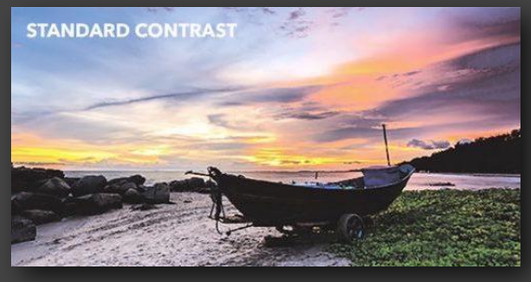
IN LOW LIGHT

Enable Protune and shoot in RAW mode for better quality shots in difficult lighting situations. Then choose a low shutter speed for brighter and smoother colors. Don’t forget to attach your GoPro to a tripod.

FOR COLOR GRADING

If you want to edit or color grade your photos, other than shooting in RAW, it’s best to select a neutral/flat look within the Photo Protune Color option.

STANDARD vs. HDR



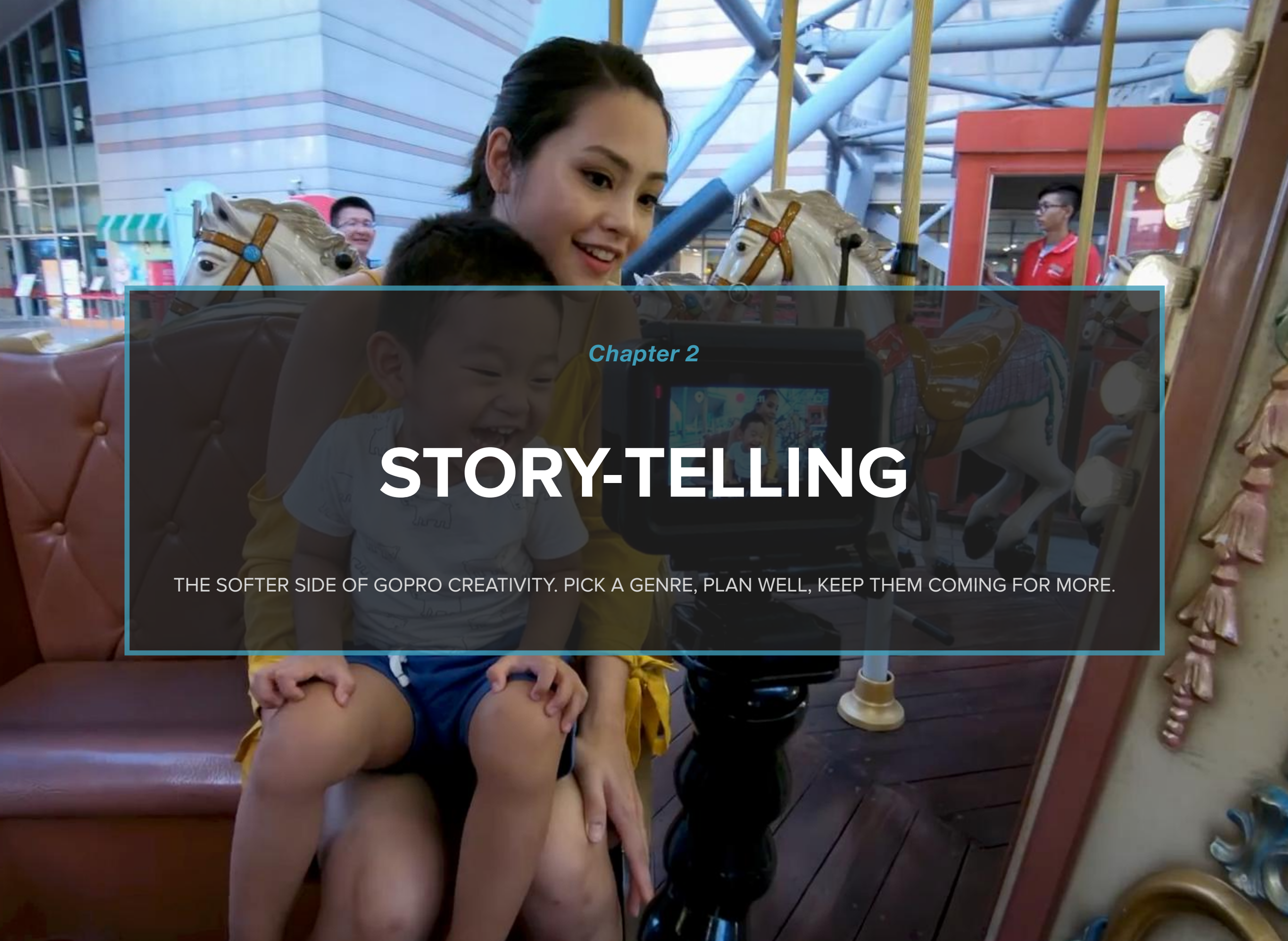
JPEG vs. RAW

JPEG

+ Widely compatible with all devices
+ Small file size and easily sharable
- Compressed format, lower quality
- Not ideal for color grading

RAW

+ Perfect for editing and color grading
+ Higher quality, especially in low light
- Heavy file and not supported by all devices
- Not available in burst or continuous modes



Chapter 2

STORY-TELLING

THE SOFTER SIDE OF GOPRO CREATIVITY. PICK A GENRE, PLAN WELL, KEEP THEM COMING FOR MORE.

Section 1

PREPARATION

INTRODUCTION

We get it. We've been where you are. You want to get out there and just start shooting, hoping that some of your footage gets noticed by someone of note. It could happen. It's possible that it has before. But until that day comes, while you're encouraged to keep on filming to practice your technique and nail down your "brand" of film, you can check out everything in this section telling you how to prepare for a shoot -- before you start shooting.

Most professionals do it. Whether it's a major blockbuster, box-office smash or an immersive documentary, the good ones likely have boxes and files filled with notes and scribbles and junk whose only existing purpose was to prepare for a shoot. What follows is how you can get that process started.

1 WHAT'S YOUR STORY?

It's an age-old question asked by people all over the world. We ask it because we humans are a curious bunch. Some of us tell stories on paper, some are retold orally over generations, and some of us prefer to tell stories by making movies. If you're reading this, you probably fall into that category.

And so we ask you: What story do you want to tell with your GoPro? To recognize what that is, you need to be able to answer that in a sentence or two.

Here's one path to getting there:

1. **Pick a topic based on how you answer the following:**
    a. What are my passions?
    b. What do I enjoy shooting most of all?
    c. What message do I want to convey, if at all?

You might even apply this to something as simple as your family's New Year's Eve party. There's definitely a story there somewhere!

2. **Research your story topic.** Chances are good someone else has done something similar and has it posted on sites like YouTube or Vimeo.

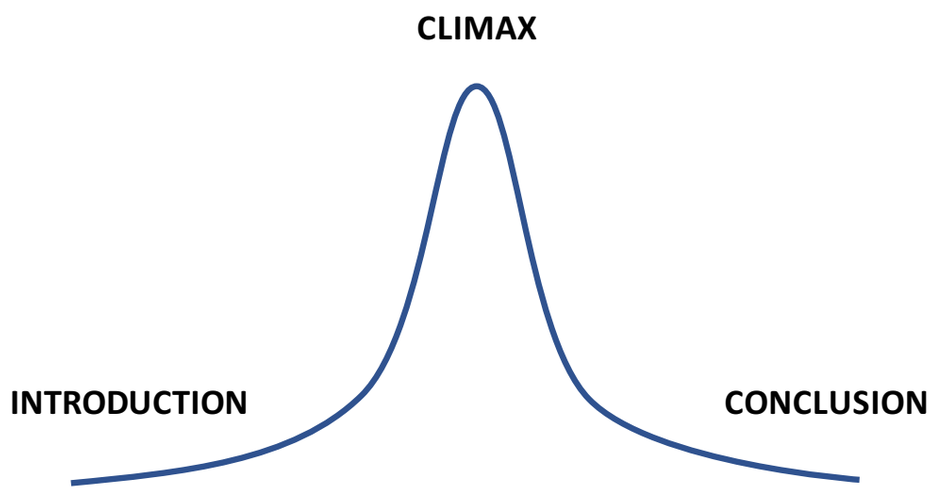
3. **Learn by example.** There's good storytelling and there's not-as-good storytelling. Take notes on both. What works? What falls short? Pick and choose your style and inspirations based on these filmmakers.

When you feel good about finding a story worth telling, you have to begin plotting its three foundational structure -- the structure found in every story ever told:

1. Beginning
2. Middle
3. End

2 STORY STRUCTURE

Now it's time to get a little more granular with your story. Here's how you can break it down:



Beginning: Character introductions, setting and genre establishment.

What is it: This is where you plot out, in your notes, the genre (e.g., POV reality, thriller, dramedy), setting (e.g., my kitchen, entrance to Vatican City, local cafe) and meeting your characters (e.g., Grandpa Larry, Swiss Guard, barista). You can also inject yourself into the film's narrative or remain behind the scenes.

Example: You're (< character) filming a travel vlog (< genre) of your holidays in Thailand (< setting). You might introduce your story by showing yourself admiring, with some envy, a postcard your best friend sent from Thailand, followed by you booking a flight to Bangkok. As a character in your own film, you could include your narration, perhaps while you're packing your new fancy backpack.

Middle: Capture the climax.

What it is: This is a turning point in the movie. It's where conflict is discovered and addressed, ideally in a way that keeps your viewer intensely glued to the screen waiting to find out what happens next. This is also often called the heart of the film. Some of the best climatic scenes involve someone overcoming an obstacle or fighting towards a goal.

Example: Upon arrival in Bangkok, the heart of your story could include sweaty hikes through humid Thai jungles, exploring the sites and sounds of the city, taking selfies with various monkeys on your shoulders and more. The heart of this film can be any number of scenarios and it can also be short clip sequences to pack in the whole trip, making your film as fun and as watchable as possible.

End: Problems are solved, winners and losers, messages and morals, sequels and prequels.

What it is: In French, this story element is called the *denouement*. It's where storylines are explained and resolved. Sometimes an ending will only create an opportunity to carry over to another movie or film -- but it's still an ending.

Example: Your Bangkok trip was terrific. But like all good things, this, too, has to end. This your denouement, which happens the night before, sees you somberly grabbing some street food and going to

sleep early. Tomorrow morning you fly home, and this is your trip flashbacks to evoke some viewer emotion, over which you are narrating. The end.

3 PACKAGE YOUR STORYBOARD

In professional productions, storyboards are commonly used to summarize the movie's main plot points using illustrations and brief explanations -- similarly to comic books.

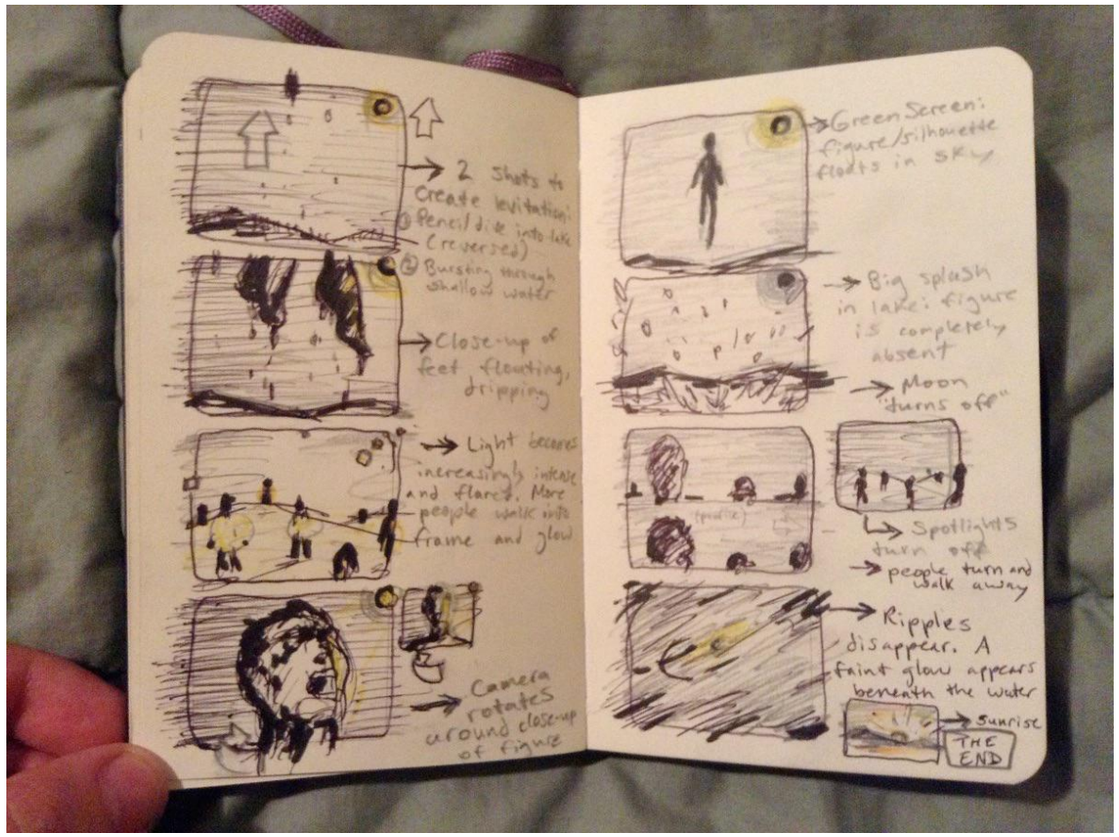
Your storyboard typically includes characters, camera angles, timing, action setup, and any other useful information to chronologically define the movie sequence.

Do you, as a GoPro filmmaker or videographer, need to storyboard?

Maybe. Maybe not...

It usually depends on your movie's degree of complexity. It's not a general requirement, but if you're serious about filmmaking, there's no harm in making storyboards from the start. They can help with your creative visualization and preplan for any potential roadblocks. Make it a habit now and it won't be difficult down the road.

How do you make a storyboard?



First, take pencil and paper or download this app: www.storyboardfountain.com.

Then follow these six simple steps:

1. Summarize your film's storyline. Use the "Beginning, Middle, End" model we've already discussed.

2. Draw squares for each scene. This is where your scene illustrations will go. Leave space below them for notes and dialogue.

3. Plot your video’s storyline, which you’ve already written, with one scene for each. You can plug in others afterwards. These squares are for your most important elements: location, plotline and character.

4. Insert new boxes and notes for every significant situation/action, like camera positioning, character development and change, etc.

5. Use symbols like arrows and other shapes to illustrate movement. Use the notes to describe that movement. Include camera work.

6. Include primary dialogue and the accompanying audio, if any. Mood sounds, music genre, sound effects, etc.

Storyboards can be as detailed as you want. Other notes to consider including in storyboards: scene/shot transitions, lighting conditions, and so on. Complex or not, the more detailed you are, the more accurate your film’s structure will be.

THE POWER OF A STORY

While there are many instances where high production value, epic soundtracks and flashy post-production is called for, there's nothing like using video for more personal expression. Grassroots simplicity - honest personal storytelling - is truly how GoPro can shine.

If you're just starting out with GoPro, try a personal approach to your shoots. Focus less on getting the top gear and accessories and more on shaping a story-line that makes sense to you. Try to incorporate your own feelings and thoughts; show emotion while filming. When you dust off and watch your old footage in a few years, you'll have a much deeper appreciation for those exact moments -- like you're really back in that moment. Your audience will be pulled into your perspective; viewers will feel with you. This is what will keep them in their seats until the very last frame.

This is the power of your story.

TOP 3 INTERESTS SHOT WITH GOPRO

- VIDEO STRUCTURE EXPLAINED -

By examining the 12 activities most-often shot with GoPro, it's easy to categorize all of them under three common headings: travel, sports and nature. Although they should all aim to tell a story, their shooting setup may differ depending on specific qualities, such as the pace or setting. Here's how we broke down these activities into their respective categories and what might determine your shooting parameters.

TRAVEL

ACTIVITIES
All

PACE
Various

SHOT TYPES
Slow-motion
Time-lapse

VS

SPORT

ACTIVITIES
Cycling, Skiing, Surfing

PACE
Fast

SHOT TYPES
Slow-motion
POV shot

VS

NATURE

ACTIVITIES
Hikes, Sunsets, Water

PACE
Slow

SHOT TYPES
Time-lapse
Wide FOV

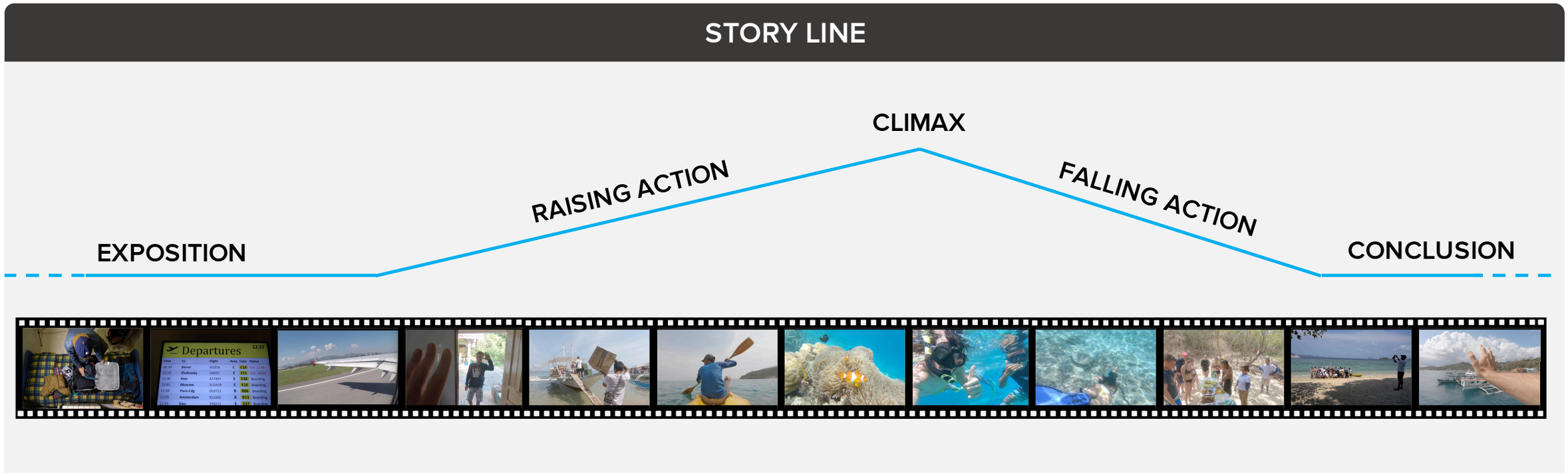
TRAVEL

From a short surfing film of your summer holidays to a calm sunset stroll along the beach, travel videos can cross all filming categories. There's much more flexibility for creative expression, using techniques like slow-motion and time-lapse techniques to make your travel stories more dynamic.

Here's a practical example of a travel storyline:

Andrea goes backpacking solo through the Philippines. He experiences the local life and culture, and then joins an expedition of an uninhabited island where he discovers the most beautiful marine life he's ever seen.

Video: Backpacking through the Philippines
Source: Project GoPro
Length: 2 min



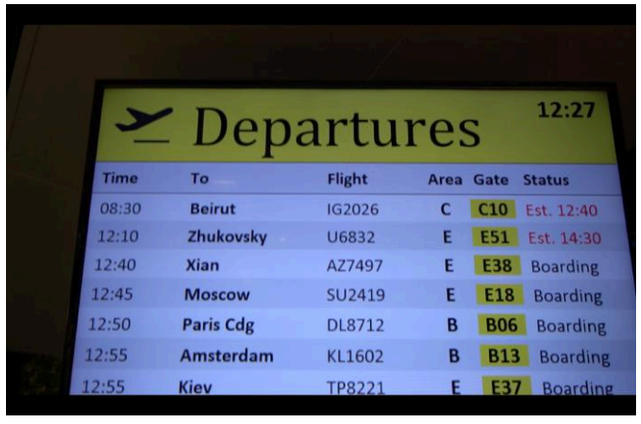
1 EXPOSITION

Exposition refers to the beginning of the film, in this case the first 15-20 seconds. It gives your viewer an introduction to the genre (travel) and main character(s), Andrea, who is introduced at the start during his travel preparations.

GoPro Setup:

With the camera mounted on a flexible clamp just above the subject, viewers can see the entire scene, which turns into a quick introduction about the storyline and what this video is about.

The room is lit with extra LED warm lights to keep the lowest ISO values possible.



2 RISING ACTION

The next 15 seconds of the video depicts its “Rising action”. This is where the story begins to unfold, where things get spicy. It builds up towards the climax and includes a series of unexpected events, such as the following one:

Andrea arrives in the Philippines and begins meeting the locals. One of them takes an interest in his travel story and invites Andrea on a group sailing expedition on an uninhabited island to spend 3 days exploring marine life.

SETTINGS:

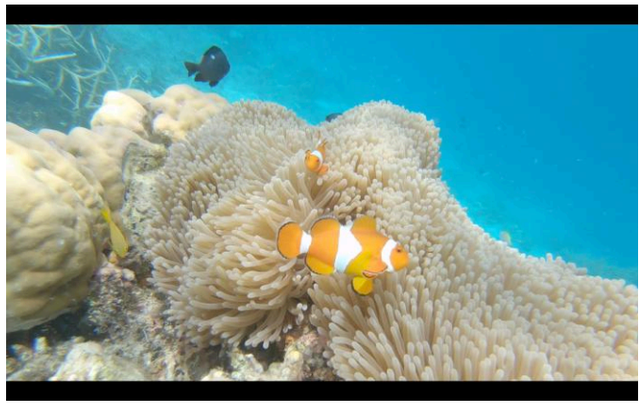
Shooting was mostly hand held, or with the GoPro clipped onto Andrea’s bag straps at chest height. Keeping the camera clipped to the body while interacting with people makes it less invasive, especially when exploring a different country and meeting its locals. Turning the recording (red) LED off is more discreet, ensuring shooting subjects act naturally.

3 CLIMAX

This halfway point is where most of the exciting action happens in the storyline. It’s a turning point, where they set off on a marine adventure. The day was fun-filled with many surprises. At one point Andrea finds Nemo, and that signals the topmost part of the climax.

SETTINGS:

GoPro is ready for a swim! To balance poor underwater lighting conditions and guarantee the best video quality, a low frame rate is set and stabilization is disabled.



4 FALLING ACTION

This is the falling action - the denouement. All major action is done and the video is headed towards its conclusion. The explorers return to mainland to spend the last few moments together and to take some group photos.

SETTINGS:

GoPro is set to a higher frame rate (120fps) to achieve some cinematic b-rolls (secondary, supplementary) footage of the food and location shots, along with some vlog scenes to provide context.

5 CONCLUSION

This is the end. It’s the part of the expedition with hugs and goodbyes before leaving the island. Andrea hops onto a ferry back to Manila while reflecting on the amazing moments he shared on this trip.

SETTINGS:

Ground shots are performed, mostly hand held, at 120fps with image stabilization enabled. Protune is activated but shutter speed is set on Auto to maintain exposure balance throughout.

SPORTS

Whether you're sitting in a packed stadium to watch your favorite team or cheering for a friend as she speeds past you on the ski hill, watching sports brings people together. And what better way to capture stories of athletes and their emotional fans than by powering up your GoPro. Making sports movies, even if it's just your neighborhood pickup game, is a great way to improve your filming skills as well as the quality of your productions.

Here's a good example of a sports storyline:

A group of friends are preparing for their annual trip. This year they're going to South America to cross "Ski the Andes Mountains" off their bucket lists.
Video: Let me take you to the mountain
Source: GoPro Awards
Length: 10:37 minutes

STORY LINE

1 EXPOSITION

The opening few seconds of the video sets off the genre and location. It starts with a dramatic scene of a group of skiers trudging through knee-deep snow, while fighting a snowstorm. On screen titles introduce the characters with their names.

Within the first 10 seconds, the viewer will know it’s a sports video about a group of skiers.

GoPro Setup:

The camera is set at a higher frame rate to achieve a slow motion effect for a dramatic, cinematic feel.

2 RISING ACTION

The raising action will add some suspenseful spice to the story, introducing viewers to the climax point - a few scenes of the skiers waking up in the morning and preparing for adventure. POV shots of them waking and opening the windows to a scene of freshly fallen powder snow puts the viewer right there in the hotel with each skier. This is followed equally immersive shots of their scenic hike up the mountains.

GoPro Setup:

GoPro is mounted on the chest or head to make immersive POV scenes and keeping your hands free and as part of the action is perfect for this part.

3 CLIMAX

At this point, there’s plenty of build-up to the story. Your viewers are definitely ready for the excitement of its climax. After claiming their spot at the top of their chosen slope, it’s time to take off on their descent. With everyone recording POVs, there’s plenty of footage of each skier doing tricks, crouched in racing form, others on their rear ends and various other positions and actions, until they all happily meet at the bottom.

GoPro Setup:

Each skier has a GoPro mounted on their body for POV shots. Some are on heads and others are chest-mounted. A couple skiers also have GoPros mounted on the fronts and backs of skiis. All of these different angles from POV mounted cameras provide plenty of primary footage, as well as terrific b-roll minutes.

4 FALLING ACTION

With Andes Mountain Skiing confidently crossed off bucket lists, the film is now in its “falling action” phase, also called the denouement. Skiers remove skis. Hugs, high-fives and chest-bumps abound and they simultaneously crack open bottles of fancy local beer in celebration of another successful trip.

GoPro Setup:

Emotions running high, recounting the best moments, and plenty of laughs are best shot with more alternating POVs. It’s what gets viewers up close and personal, almost like they’re part of the group at the end of a successful day of skiing.

5 CONCLUSION

Wrapping up another year, our skiers disassemble all equipment, pack it into the helicopter they arrived in and head back to town. They're all quiet on the way back to town, footage that is interwoven with memory shots of their runs downhill and other fun interactions.

GoPro Setup:

Full shots, POV, in-hand and selfies and Drone (not in the helicopter) are used to cover their packing up and trip back.

NATURE

Videos in the nature category tend to be much slower-paced than others. GoPro is ideal for capturing nature-based videos like your weekend hikes, a first-time safari trip, or even a walk to the dog park to meet both human and canine friends.

Check out this nature-related storyline:

While reflecting on the power of capturing beautiful moments, James and Alice come across a solitary Alpine Ibex (European wild goat).

Video: Wandering the French Alps

Source: GoPro Awards

Length: 2:22 minutes

STORY LINE

1 EXPOSITION

The opening of this video, the exposition, sets the tone and establishes location and characters: two friends hiking the French alps while taking in the magnificence of their natural surroundings.

Settings:

To get up close and personal, this portion was filmed using POV shots.

2 RISING ACTION

James and Alice hike beautiful mountain trails and film it all with their GoPro. While appreciating their surroundings, they begin a conversation about the power of capturing moments. One of them concludes that, “some moments should only live in the memory.” Despite that opinion, these recorded moments serve to build towards the video’s climax.

GoPro Setup:

Shots include close-ups of the James and Alice and secondary wide shots of their vast surroundings.

3 CLIMAX

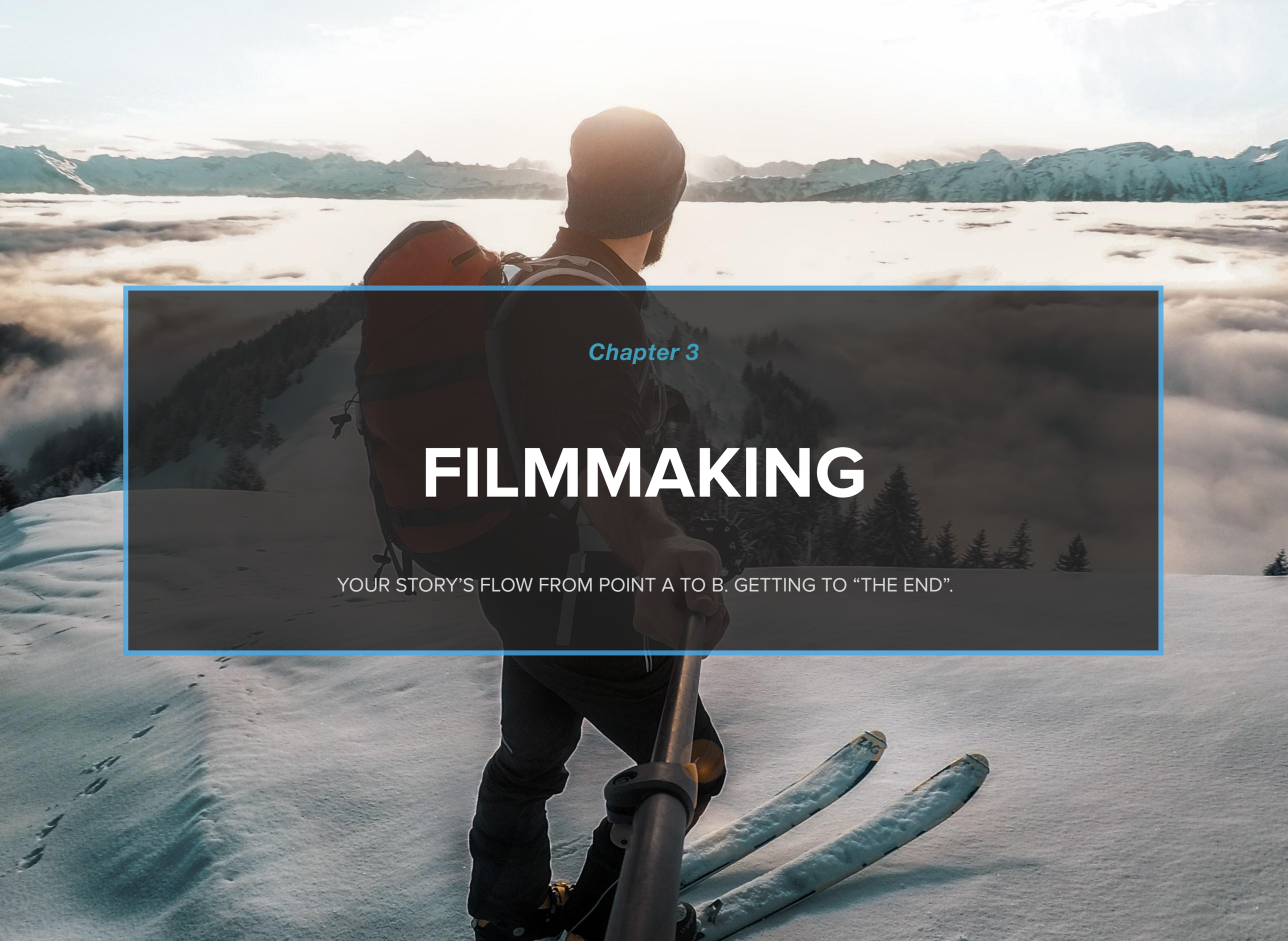
The story continues to evolve with even more back-and-forth debates about whether these moments should be captured or just experienced and remembered, without recording it. The climax reveals itself in the shape of a solitary wild goat. This is also a turning point in the story.

GoPro Setup:

The Alpine Ibex footage was shot in slow motion to really encapsulate the awesomeness of the moment.

4 CONCLUSION

Unlike the previous travel and sports examples, this story actually ends immediately after they spot the Ibex, leaving no room for a longer conclusion, but poignantly ending their debate about whether or not some moments should remain memories. It’s a creative and powerful way to end a video like this.



Chapter 3

FILMMAKING

YOUR STORY'S FLOW FROM POINT A TO B. GETTING TO "THE END".

Section 1

MINDSET

INTRODUCTION

These days, shooting high quality media footage is no longer the secret of professional photographers or videographers. But despite how smart and intuitive your capture device may be, pushing some buttons isn't the only thing needed to create something widely consumable for viewers that aren't just your mom. Adjusting your mindset is a good place to start.

1 CREATE VALUE

Before committing to a life of video/movie production (this applies to most "creative" endeavors-turned-career), it's important to wrap your head around one very basic and honest truth: other people don't care.

No one cares about your video masterpiece and how many hours you spent in a dark closet-sized room to get the color just right. These people, your viewers, want one of two things: Entertainment or Information.

When was the last time you suffered through a horrible movie just because you heard the director put months of work into it? Never!

Your people will take the same attitude towards your videos. If it doesn't deliver, they'll choose from one of the other 15 options on the right of the screen. Click!

Don’t despair and definitely don’t give up. This is the part of the book in which we uncover some strategies you can use to keep your views glued to the screen. The only thing we ask is that you remember the word “value” throughout this chapter (and beyond).

10 Seconds is all you have

YouTube is a massive library of useful data just waiting to be discovered and exploited. There’s plenty of freely available crap there too, most of which you clicked out of within the first 10 seconds.

That’s all you have to capture someone’s attention. So if you’ve watched endless amounts of video footage on Youtube or Vimeo or any other streaming service, pay attention to the details that kept you watching after the 11th second. Take those notes. Emulate the successful, and avoid repeating the mistakes of the videos that lost your attention.

Tip: walk away

Next time you’re ready to upload your next video, take a full 24-hour break from watching it. It’s pretty likely you’ll see mistakes and other issues after you’ve had some distance. It’s like having a fresh set of eyes on it and a great way to fine tune your work.

2 THINK AHEAD

Envision what your finished product will be like. Write it down.

What message do you want to convey on screen?

What are your favorite videos? Why? What did they do well?

Can you emulate that in your videos?

Answering these questions will put you miles ahead of the competition. Most people don't take the time to do this, and it's precisely the reason why they make bad

videos. Creating something of value people enjoy doesn't happen by accident! Think ahead and answer these questions, they will greatly increase the quality and success of your videos.

3 PICK A GENRE

When flipping through YouTube for inspiration, pay attention to the different genres and who's topping each one with their work. Dig deeper into who they are and how they got to be successful in that niche, not only for personal insight, but to get motivated and set your creative bar progressively higher.

Genres may seem confusing and counter-productive in an otherwise creative field. "My work transcends genres!" is not something you declare if you're serious about growth in the field. Find your niche out there and exist in it unless and until you find something better or different.

Tip: spark success

Sometimes being creative requires the inspiration of other creatives. Building on the previous "walk away" tip, before coming back to your work, browse around the channels and videos of other likeminded and successful people. Even the smallest of details spotted in other works might spark an idea or two for your own project. Every creative has an "influence" behind their stuff. You can too.

4 FILM WHAT YOU CARE ABOUT

This one is simple, and super important. If you hate skateboarding, for example, why the heck would you choose to film it? But if you're an avid food, your love of gourmet anything will make filming it really, really simple...and delicious. Your viewers will agree.

5 KNOW YOUR AUDIENCE

There isn't a successful marketing professional on this blue marble of a planet who would disagree with this. Your target audience for a dirt bike shoot is other dirt bike enthusiasts people who watch extreme sports.

What cool angles could your GoPro capture that would excite these muddy viewers? What dusty sights and urban sounds would they relate to?

This forethought is how you come to know who your viewer is and what you can create that will indulge their passions in every - single - shot. If you try to be all things to every viewer, you've already lost focus and a near-guaranteed audience.

If you can believe it, your targeted video can have wider appeal. But you need champions to tell those other people about it. That's how growth and success happens.

Tip: viewer persona

Once again, to borrow from the field of marketing (we all do it eventually), on a piece of paper, describe your ideal audience member. In marketing it's called a "buyer persona", but you're composing this profile for your video. Break it down as much as possible. How old are they? Where do they live? What do they eat? What music do they listen to? Are they married? When you're done, that's your ideal target audience and that's who you're indulging in your videos. Now stick that paper to a wall somewhere and refer to it as often as you can throughout your shoot.

6 SEND A MESSAGE

Watching a video of quality is a pleasurable experience. Great videos can provide valuable information, entertain and even create emotion. But did you know all videos send a message? The message is the viewer's opinion of the perceived purpose of the video. Often times, amateur film makers overlook this perception and the message sent is unintentional.

Have you ever watched a video and spent the entire time angrily focusing on one comment that was made? The experience, or emotion hearing that comment created, becomes the overall perceived message of

the video. This is what you'd describe when telling your friends. And this is what will dominate the comment section. These mishaps can ruin any value the rest of the video has.

Taking time to make sure your dirt bike video is about sharing the experience of riding a dirt bike and not about something else, is important. Small things can often slip by and ruin what otherwise would have been a great video! Take a short break and pay attention!

Ask yourself - What is the perceived message of this video and is it different from my intention?

7 CAPTURE EMOTION

What do popular videos all have in common? They make the viewer feel strong emotions. Sadness, joy, anger, it doesn't matter. People want to share content that has an impact on them. When you find a video that makes you happy, you want to share it with people and make them happy.

You know when you find these videos too because you think, “I should show this to Steve, he would love it!" We share because we want to spread that emotion. It feels good to show someone a video that makes them happy. If you create videos that have a profound impact on the people that watch them, your message will spread.

If you want to have an impact on the world with your videos, you need to create videos that project emotion. If you're filming a dirt bike video, point the GoPro at your face and share the emotion you feel while riding with the world. This is what will attract other dirt bike riders and, if the emotional experience is strong enough, it will spread outside that audience.

Capture multiple angles! Nobody wants to stare at your face for 5 minutes straight! Showing short clips of emotion filled expression will help project this emotion on to your viewers.

8 FIND A CHARACTER

Imagine you're filming a fishing video. You set up your GoPro and film for a couple of hours. You edit the highlights, throw in some text, add a little music, and

you’re done. This is the route most people take. It's boring! So how do you make something as "normal" as this, more interesting? Find a character. This helps us follow the experience in a way which is more interesting.

Imagine you film yourself early in the morning before a fishing trip. You record a short clip telling the viewers how you’re going whale hunting. Next, you get a shot of your truck backing down the boat ramp. Cut again and you’re casting out with a tiny fishing rod. Cut again to a shot showing your face ecstatic as you pull up a tiny fish. This is funny and incredibly simple. If you can step back and think about what you could do differently to add a little excitement and emotion to your videos, they will be better.

Try throwing in a little dialogue and getting more than one angle. Mix it up. Add a timelapse. Can you imagine showing a video like this to your friends? Make it funny, make it exciting, cut out the long fixed shots. People want to be entertained!

9 PLAN YOUR SHOTS

Most people do absolutely no planning, no thinking, no story, no preparation, nothing. This is why they make bad videos. This is why they make boring videos that fade away with the majority of the content out there. Taking this route makes the likelihood of creating a good video wishful thinking. This is the biggest reason why people make bad videos. They just wing it. Sometimes this works, but most of the time it doesn't. If you commit to being a little more creative and to trying a little bit harder, your videos will be 10 times better.

We want to step away from wishful thinking. Creating great videos doesn't have to be a new career, but it isn't something that happens by accident. In the section below we'll walk through the simple process you can use to prepare for your next video.

10 LEAVE THEM WANTING MORE

Your video doesn't need to be long. Its better they watch it twice out of desire, than not finish it once. There is no evidence that supports longer videos are better. Maybe we associate the length of a video with the amount of work it took to produce; thinking that it must get good at some point! But anyone who’s suffered through an entire Tom Cruise movie knows this isn't true. Think about the amount of information that's packed into a 30 second commercial. Think about how many times you've been disappointed to see how much of the good movie was given away in a 30 second trailer? Longer does not mean better; keep it short, keep them wanting more.

Think about this: If you plan a video that's 2 minutes in length, you may film for a week totaling 200 different shots. When it's time to edit, each one of these shots will be competing with each other for their spot of the 2 minute time line. In this frame, shorter equals better. Until you have had a lot of practice and are ready to start upping your game, keep it short.

Section 2

CAMERA GEAR

INTRODUCTION

Since the release of GoPro back in 2014, along with its growth in popularity, many accessories and add-ons have been designed to capture unbelievable shots that were almost impossible to achieve a few short years ago.

Pre-GoPro, professional and budding videographers needed expensive, big-budget equipment to shoot things like underwater seascapes or “POV” surfing shots with friends. They also needed to hire people to carry everything.

We’ve come a long way since then. Cameras now are smaller and easier to operate, and we can carry all the affordable tools imaginable (and more) in one bag, pushing all of our creative juices to their limits and beyond.

In this section we’ll go over a few of the more popular and useful GoPro (and non) accessories and tools that we believe will up shooting game considerably.

1 THE MEDIA CARD

Using a video optimized microSD card is as important as ensuring the battery is charged before you start a shoot.

Some microSD cards are not compatible with higher frame rates or resolutions because of their lower speed ratings. When you buy your next microSD card, make sure it's compatible with your GoPro model.

CARD TYPES

Because media storage cards have various uses, they are available in several different sizes, capacities and speed ratings (differentiated by *Class*).

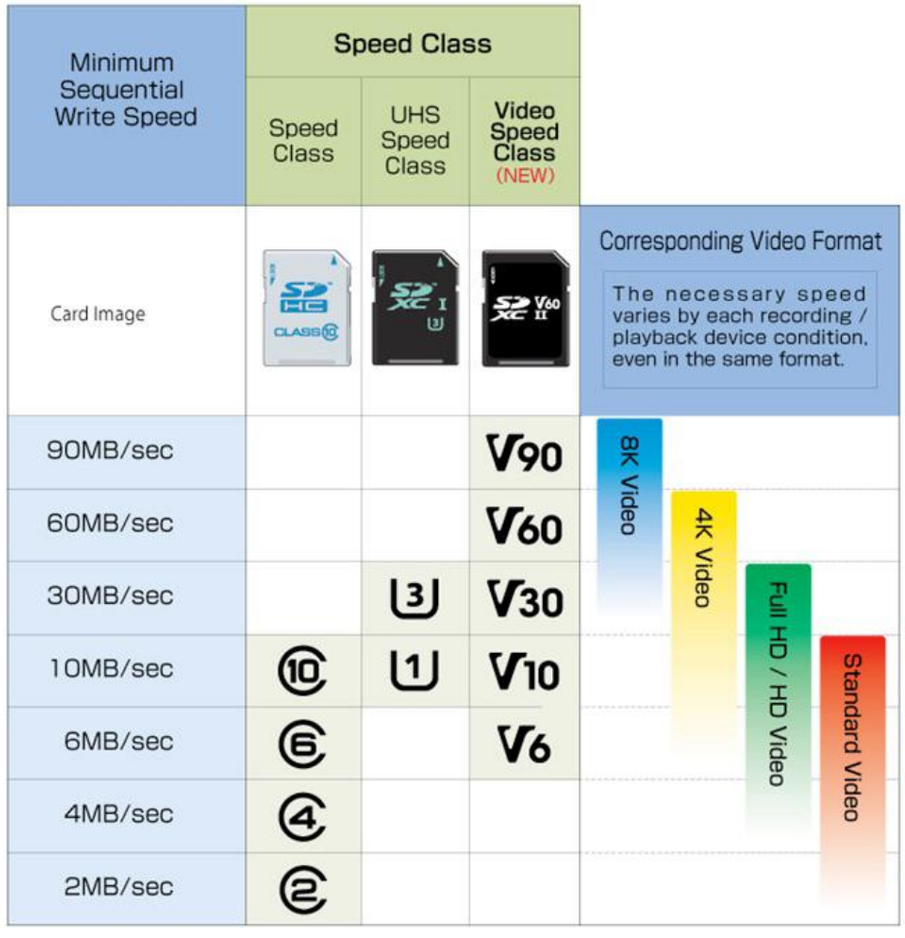


Illustration reference: www.sdcard.org

CHOOSING THE RIGHT MEDIA CARD

Of the many memory cards available to purchase, GoPro recommends the following features:

- microSD, microSDHC or microSDXC
- Class 10 or UHS-I rating
- Capacity up to 256GB

If you're shooting in 4k or at a high frame rate, use a fast UHS-1 rating card. Slower cards may not work well for this purpose.

2 GETTING IT WET

One of the main non-tech-related advantages to owning a GoPro is its size and portability. You can take it with you literally anywhere...even underwater! The newer HERO 5 model and any model following, was manufactured waterproof, so you don't need to get any accessories to film an ocean dive (unless you plan on going super deep).

For earlier GoPro models there are plenty of accessories to get you filming under the sea.

3 USING UNDERWATER ACCESSORIES

The HERO 5 (black version) and later models, come with a built-in LCD display, which makes framing your scene much simpler, right out of the box. Earlier HERO models and the Session line are more of a challenge when filming in the deep blue. But with some savvy guess work and a separate water-tight case, underwater shooting is still quite possible.

These other useful accessories are great for underwater recording:

LARGE MEDIA CARD

You can’t change the card underwater (or near any wet area), so it’s a good idea to get the one with the highest capacity.

ANTI-FOG INSERTS

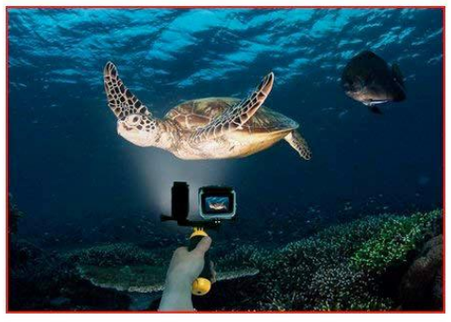
Drop these into the camera’s housing to absorb moisture and prevent fogging in cold and humid environments. They’re also reusable a few times. Just drying them out in a 300°F oven for five minutes.

COLOR-CORRECTION FILTERS

Underwater footage is beautiful, but they have overwhelming blue or green coloring. An optional red or magenta color-correction filter will fix it.

VIDEO LIGHTS

A complete rack-mountable lighting system is super helpful for those darker moments. Some illuminate up to 900 lumens for densely lit underwater scenes.



DIVE HOUSING

The waterproof housing that comes with your GoPro works well in most underwater situations, unless you hope to go much deeper. If so, consider this housing. It’s far more durable than the standard model and it’s waterproof down to 197 feet (60m). While the new models, beginning from HERO 5 Black, are already waterproof to 33 feet (10m), if you go any deeper, you’ll need one of these.

FLOATY BACKDOOR

It attaches to the back of the camera and keeps it afloat for those times you can’t seem to keep your camera in your hand during that underwater selfie. This bright orange marvel is easy to spot and reduces your risk of losing your GoPro whenever you’re filming in or under water.

THE HANDLER

This handgrip provides in-hand stability for your GoPro. Use it both in and out water. Better yet, it also floats.

4 ULTRA STEADY SHOTS

The ability to mount your GoPro almost anywhere makes it such a remarkable camera. To capture clean actions shots from different, cool perspectives, you need to keep it steady. Holding such a tiny camera in your hands is not always the best option while filming or taking photos. You can steady your GoPro by mounting it on a tripod, gimbal. The following are some of the more popular accessories to keep your shots steady.

TRIPOD

A tripods is your camera’s best friend. It’s become the default accessory for any photographer since the invention of the art itself. When it comes to keeping your shot steady to compose your scene, there’s no better choice.

GoPro made a very practical tripod for this camera, it’s pocket-sized and the perfect partner for on-the-go activities. It helps you capture perfectly steady time lapses when placed on a surface, and it can be

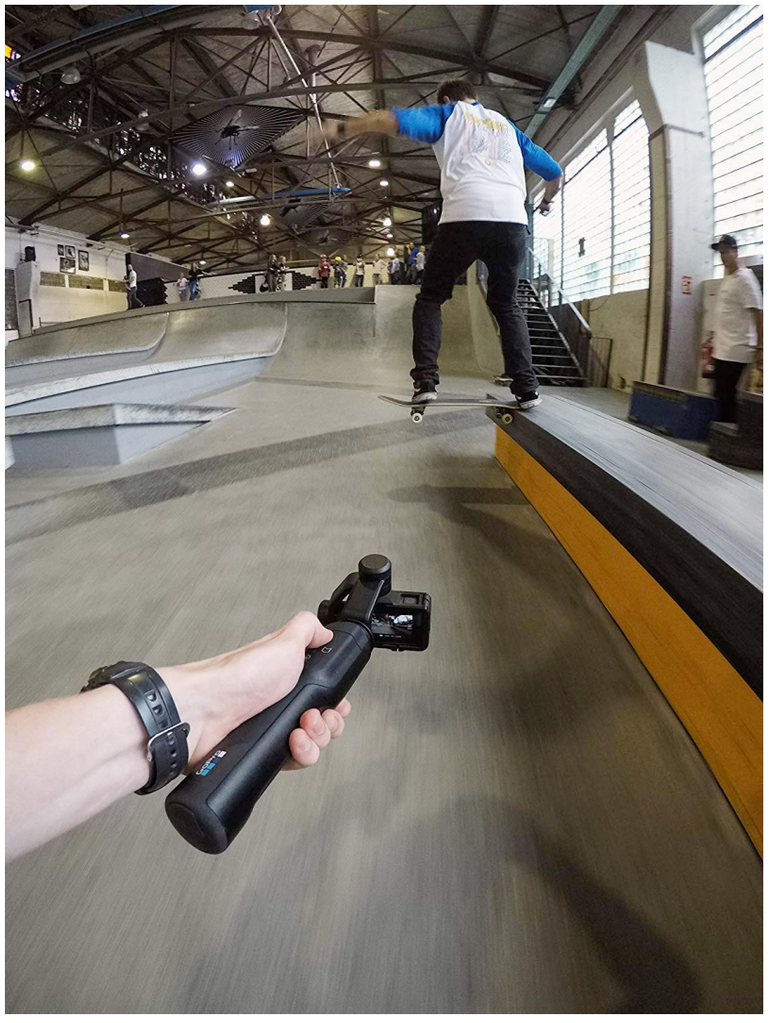
extended to take quick group shots or other hard-to-reach angles.

GIMBAL

Keep your GoPro steady with this tool. With its motorized 3-axis stabilizer, you can take incredibly straight and steady hyperlapse shots without the need of a tripod. Just take it for a walk, keeping your subject in frame and voila!

A gimbal is useful for fast action shots that need to be cinematic smooth. You can run, jump, or drive on a bumpy road and this gimbal will smooth it out.

Note: The new HERO 7 has one of the best in-camera stabilization systems to date. You won't need a Gimbal for this model, unless you're shooting in extremely shaky conditions, or you prefer mechanical stabilization (more accurate) over in-camera electronic.



5 MOUNTING YOUR GOPRO

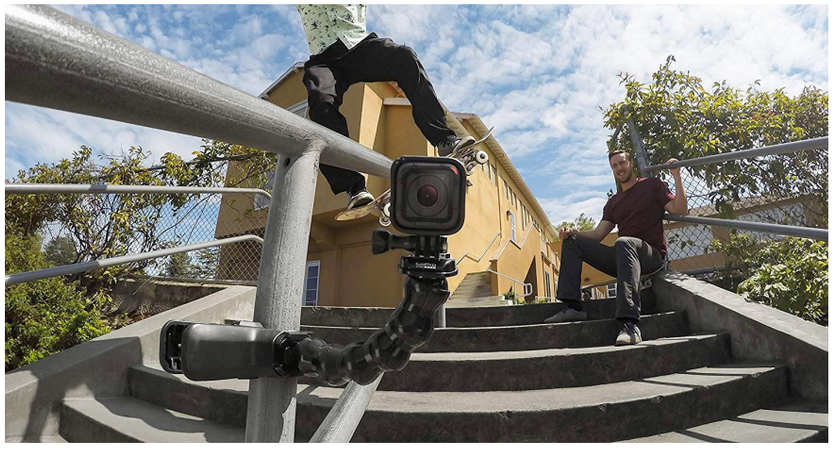
GoPro is so versatile it can be mounted almost anywhere. Because there are so many different mounts to choose from out there, we've created the following table to help you with your purchase decision.

USING THE SUCTION CUP

A fantastically useful accessory, with the suction cup, you can mount your GoPro on almost any flat, clean surface. They're great for filming from moving objects as well -- cars, snowboards, surfboards, etc. Because they're engineered to withstand a broad range of motion at speeds of more than 150 mph, you don't have to worry about it falling off.

USING THE JAWS FLEX CLAMP

This little tool allows you to attach your GoPro to a variety of objects up to two inches thick. You can mount it on the flexible arm for quick framing or just on the clamp for increased stability.



HANDLEBAR/SEAT POST/POLE MOUNT

With this cool bar mount you can attach the GoPro to your bicycle, motorcycle, ski poles, windsurfer, kayak paddles, or any other kind of tube with a diameter of up to 1.4 inches (35mm). It also rotates 360° for unlimited capture options and creativity.

PRO SEAT RAIL MOUNT

Another way to mount your camera on the back of your bicycle seat to capture rear-facing perspectives.

GUN/ROD/BOW MOUNT

This compact mount is great for all of you nature lovers out there. You can attach your GoPro to sporting equipment such as fishing rods, hunting rifles and canoe paddles. You can also mount a second camera for front-facing and rear-facing footage.

INSTRUMENT MOUNT

To capture every guitar lick from the musicians perspective, this accessory rocks! It features a non-damaging adhesive that's safe for most instrument surfaces, like guitars, drums, keyboards, and brass and woodwind instruments.

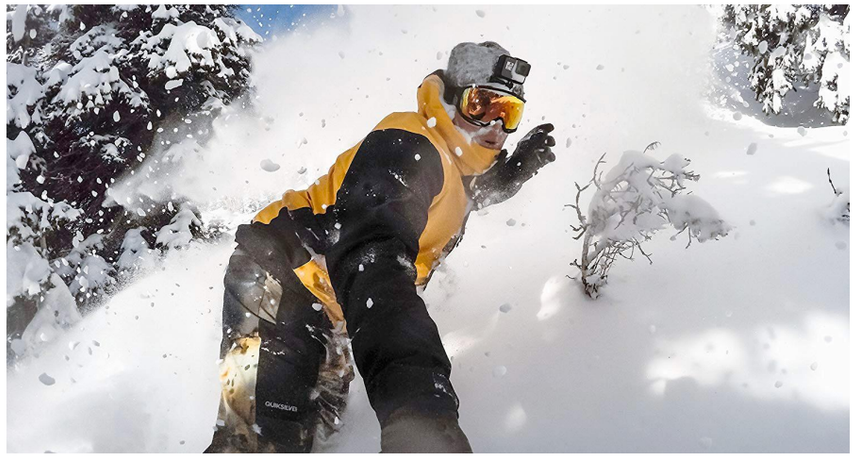
6 WEARING YOUR GOPRO

Of course you can wear your GoPro like the fashion-forward filmmaker you are! It's perfect for immersive, point of view (POV) shots, and is a growing phenomenon among the GoPro user community.

The biggest benefit to wearing your GoPro (on your chest, head, wrist, etc.) is that it frees your hands so that you can focus on activity while capturing amazing moments.

THE HEADBAND MOUNT and THE HELMET MOUNT

Another two POV options for mounting your GoPro on your head. Your viewers get a very immersive view, almost as if they are seeing through your eyes. Either accessory is perfect for shooting dramatic adventure scenes like skiing, snowboarding, softair, etc.

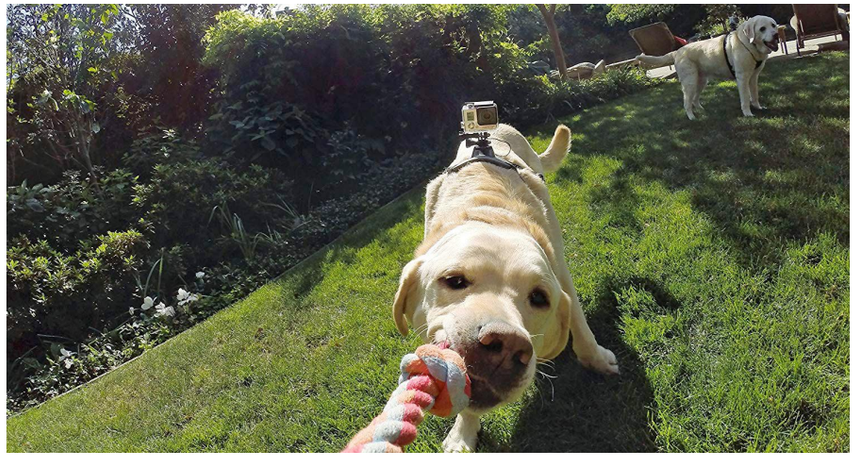


THE CHEST MOUNT HARNESS

When you’re at the center of the action this accessory will save your life, literally. Once you put on your GoPro, there’s no need to touch it anymore. You can use GoPro’s voice controls (check your model for availability) to start and stop recording while you’re enjoying a safe, distraction-free ride.

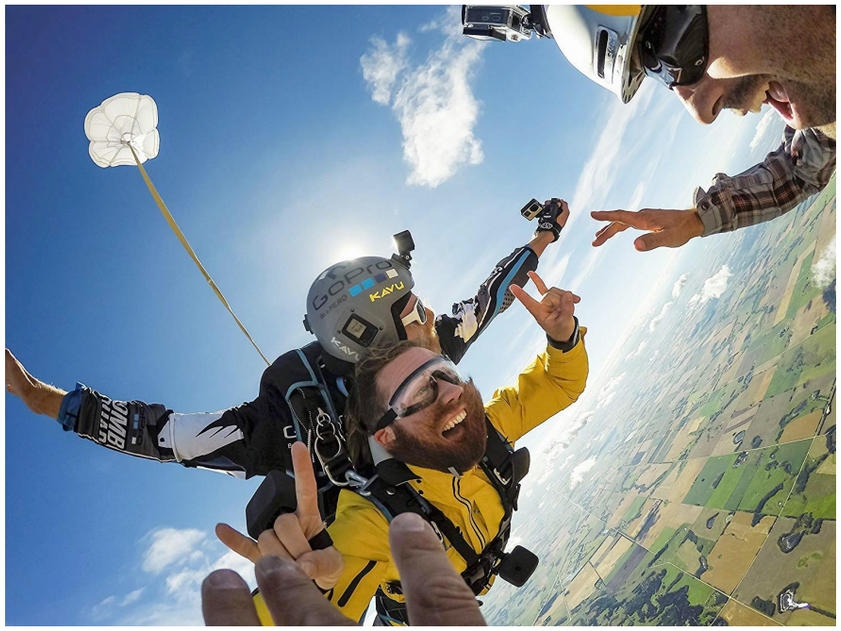
FETCH (dog harness)

The Fetch is the canine version of the Chesty, allowing you to capture the world from your Fido’s perspective. It’s designed for dogs weighting between 20 and 120 lbs (9 - 55 kg). Let your dog be the camera person for once! You may actually be surprised by what they capture.



THE WRIST STRAP

This band was specifically designed to let you wear the camera on your hand or wrist during shooting. You can also rotate the camera 360 degrees or tilt it up/down without dismounting. It's ideal for selfies on the move.



7 ALWAYS STAY CHARGED

Ah battery life. GoPro's is short because it's so small. Small battery = never enough power!

The battery life may be better in newer models but it's still not enough to support a three-hour time lapse shoot or an extended 4k production. There are other ways to drain your GoPro battery super fast, but thankfully there are a few tools to give you that extra boost when you need it most.

The traditional solution is to have on hand a bunch of extra batteries. Not ideal, as it requires you to stop recording to swap out and power up.

Another common solution is connecting your camera to an external USB power bank, like many of us do with our smartphones. The only down side is navigating all the protruding wires and boxes -- it's especially cumbersome during action shots.

Hands down the best accessory to extend your power consumption is a GoPro battery housing. This versatile add-on is shockproof and accommodates an extra

battery that remains attached to your camera throughout your recording.

8 USING AUDIO GEAR

A common mistake that many newer GoPro users make neglecting sound design. So, if your goal is to improve your filmmaking on many levels, learn about audio.

To enhance your films, try recording real life sound effects separately and then add them to your videos, just like it's done in real movie productions.

GoPro's built-in microphones can record decent quality audio if the surrounding environment isn't too loud. But if you're recording a vlog, interviewing someone or you're trying to record a specific external sound effect, use a lavalier microphone. They're decently priced and provide great audio when properly clipped to a shirt.

A good practice among filmmakers and videographers is using a back-up audio pickup like a shotgun mic. You might do the same for any important interview or recording where there's no second chance for a reshoot.

Suggested products? Both *Rode* and *Shure* make great shot-gun microphones with 1/8-inch plug that can

be connected to your GoPro (you may need GoPro's audio adapter).

9 WHAT'S IN YOUR CAMERA BAG?

We filmmakers love our gear. Whatever helps us get the best shots from the best angles, for the best results.

When you're first testing the waters and starting out, you probably have little no idea what kind of gear you need. If you stick with it, eventually your problem will be deciding which gear you leave at home. It's quite the challenge because, well, you never know...

Some basic tips:

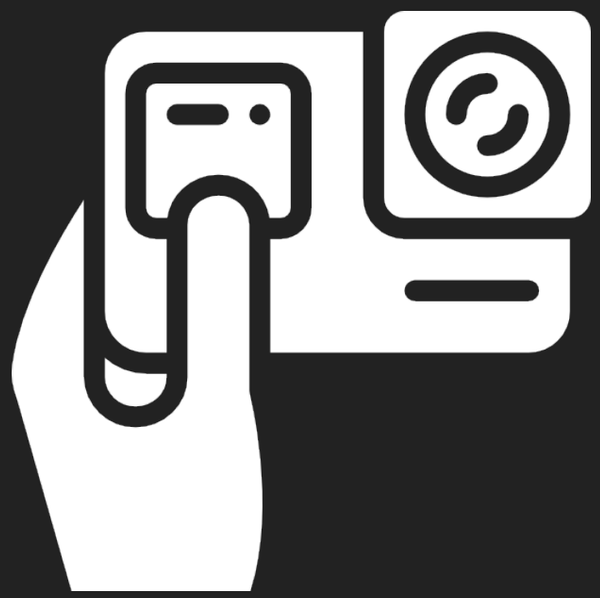
- If you travel alone, keep your gear and resulting bag weight to a minimum.
- Bring a smaller day-pack to take on longer hikes or active settings.
- Focus on the story instead of the gear.
- Improvise when needed. It'll force you to think outside the box and better understand the gear you need for the shot you take. Before the birth of GoPro and the gear, surfers had only one angle they (their crew) could shoot from: the beach. Now we can practically sit on the board with them.

WHAT WE CARRY

The following is our gear list. It fluctuates from shoot to shoot. It's for reference only, not emulating. Use this list to guide you as you gain more experience:

OUR GOPRO BAG

- 3 to 5 GoPro cameras
- frame mounts with protective lens covers
- 3 or more batteries per camera
- 2 smart remotes and chargers
- 10 adhesive mounts (curved, flat, and surf)
- 2 chest harness
- 2 head strap
- 2 handler grip mount
- 3 tripod mounts
- 1 Manfrotto tripod
- 1 GoPro Shorty (extension pole + tripod)
- 1 Joby Gorillapod
- 1 360° time lapse mount
- 1 GoPro Karma Grip (gimbal)
- 1 charger for 2 batteries with cables
- 6 micro SD cards
- 1 anti-fog pack
- 1 pack of ND filters
- 2 battery bank packs
- 1 extended battery
- 2 GoPro Floaty Backdoors
- 1 GoPro Karma Drone
- 2 suction cups
- 2 Jaws Flex Clamps
- 2 lavalier mics
- 1 shotgun mic
- 2 mic adapters (3.5mm)
- 1 laptop (Macbook)
- 2 hard drives (2tb each)



Section 3

PRODUCTION

INTRODUCTION

As visual artists, filmmakers need to be multi-dimensional to bring together both technical and artistic aspects of a production. They must be aware of lighting, coverage, camera movements, angles, sound, interviewing, and so on, all while remaining conscious of the story and its potential to evolve. Like great art, great films are also created by combining human talent and the materials and tools needed to finish the work. GoPro is one such tool, giving its user a creative freedom and the versatility to the user that spread to professional productions and film directors on the web. Directors use these tools to accomplish what they are looking to do, that is creating films that people love, using their unique style of storytelling. Finding your personal style begins from understanding the fundamentals. If you truly want to step up your videography game, you need practice and dedication. That will make you stand out from everyone else that "just" owns a GoPro, or even an expensive professional camera.

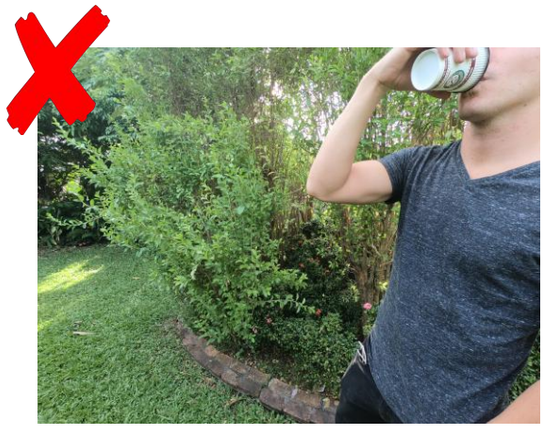
This sections shows you the technical aspects of production and how to use visual elements to create a compelling GoPro film.

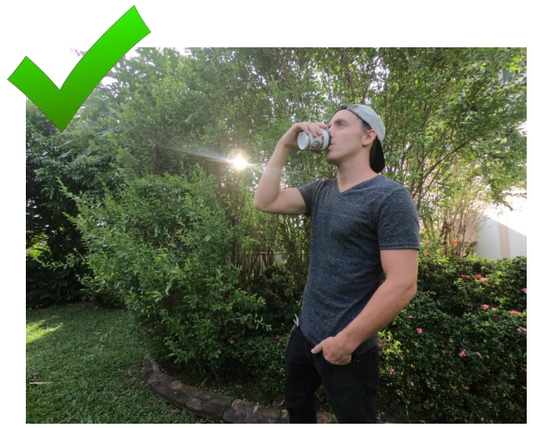
1 COMPOSING THE SHOT

Composition is the arrangement of elements in your frame in a way that communicates intention to the viewer who, if done well, can then interpret the scene and how it fits in the storyline. This often also includes color tones and textures. There's a fascinating psychology behind all of this, which is linked to human behavior and the commonality of certain life actions. But that's a whole other book.

The latest GoPro HERO models make composing a scene much easier than predecessors because of the integrated touch screens on the back. While they're not as big as those found on standard DSLRs, you can, at least, have a better sense of how your scene's composition will look to the viewer. Unfortunately, earlier HERO models, don't have any screens, making guesswork out of scene composition. With a little practice, though, it gets easier to frame correctly.

To begin composing your frame, make sure the horizon line is straight. If it's not, it can be adjusted in post-production. Then check to make sure your subject is within frame; you don't want to chop any heads or limbs off, unless that's the look you're going for.



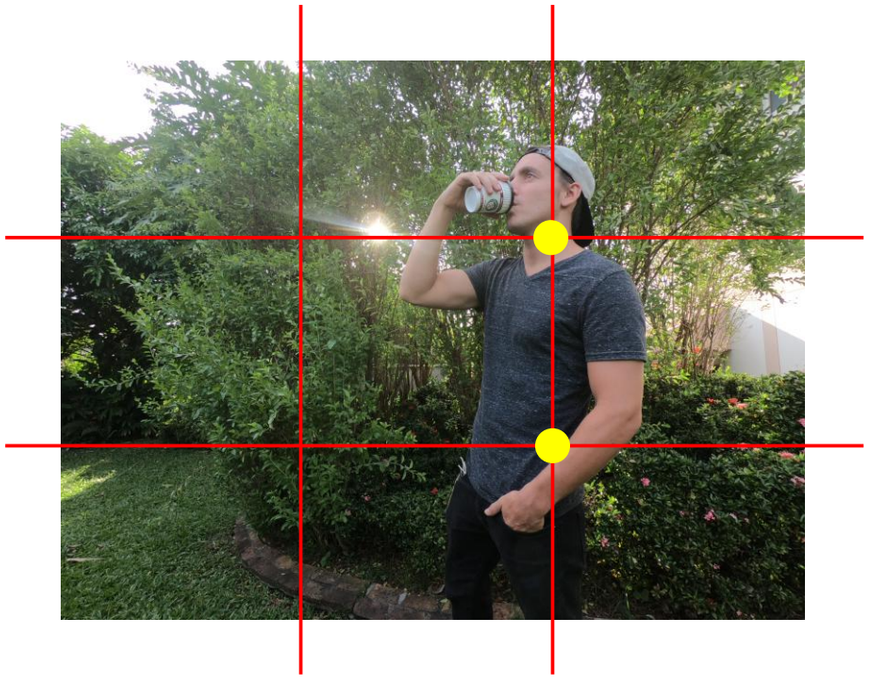


RULE OF THIRDS

This is one of the first things all photographers and videographers learn in composition class because it's one of the more helpful rules when creating well-balanced and interesting shots. In use since the late 18th century in art and architecture, it's based on the mathematical principles of proportion.

While it may be difficult to apply the rule of thirds with a GoPro strapped to your chest or head, it's a useful fundamental composing rule every camera owner should know.

Essentially, imagine your frame divided into nine equal sections with imaginary lines drawn both horizontally and vertically -- like a grid. The rule of thirds would have you arrange the most important elements of your composition on the points at which the gridlines lines intersect.

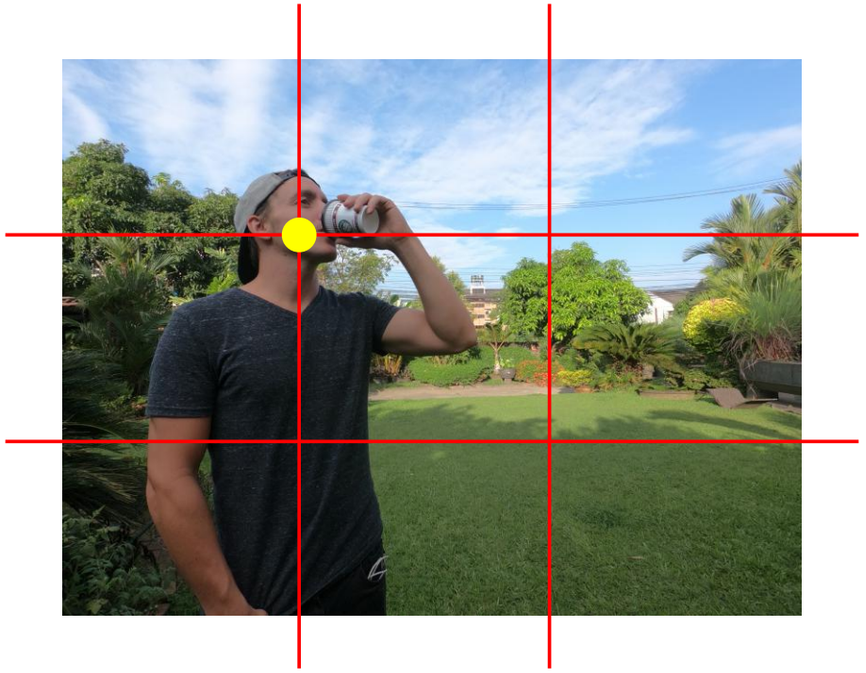


Studies have shown that human eyes naturally go to these intersection points instead of the center of an image; hence the placing of important objects at those points.

RULE OF THIRDS EXAMPLES:

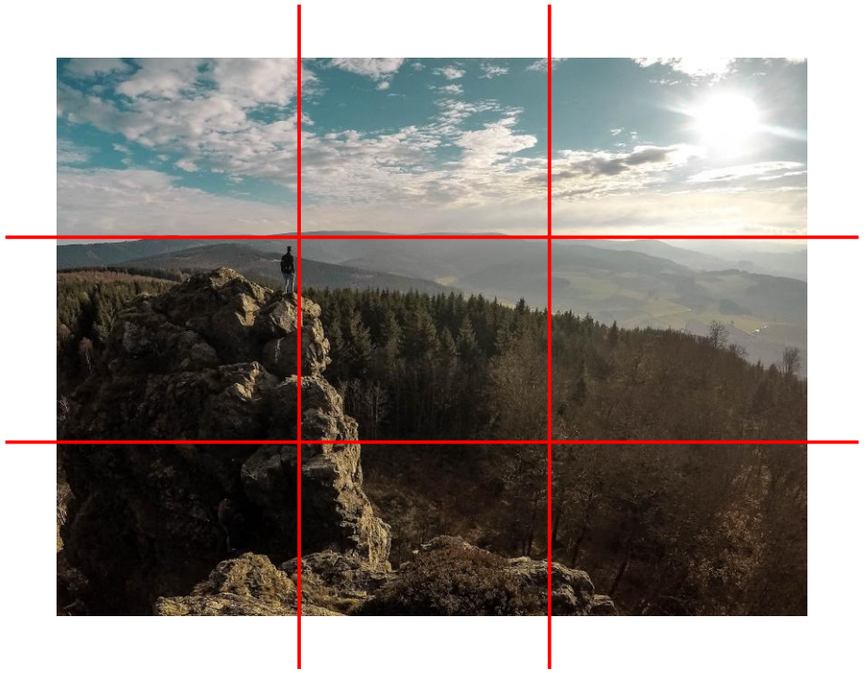
The following are three examples of how a viewer might interpret a scene based on how the main subject is arranged in the frame:

- **Subject at top left:** In this position, the viewer shares the perspective of the subject while looking towards center frame.



- **Subject at bottom right:** With your subject in the bottom right, your viewer will follow the subject as they move to the right.

- **Horizon along the top horizontal line:** This technique is used for landscape shots. Uneven spaces between sky and land creates a more dynamic and harmonious image.



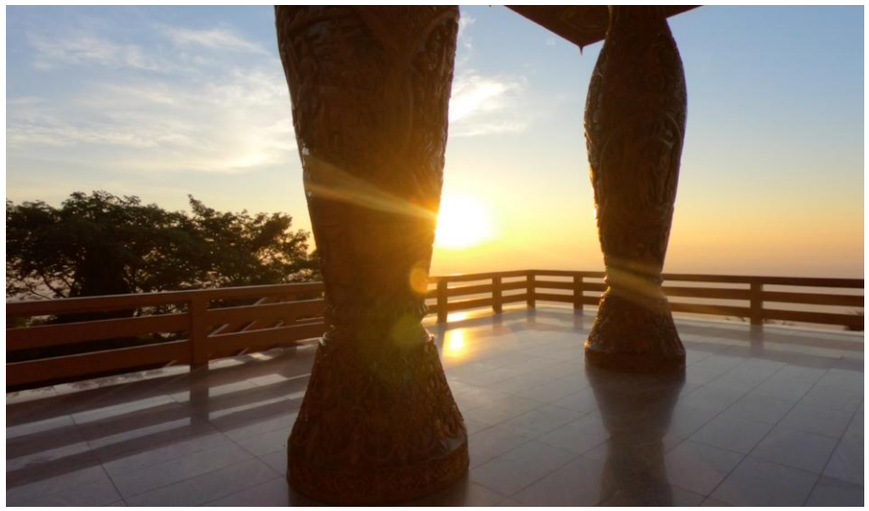
2 LIGHT

Light plays a crucial role in photography. It’s the one element that can make or break your shoot if it’s not harnessed correctly and strategically.

SHOOT AT GOLDEN HOUR

You can take the same shot at different times of the day and your footage will look slightly different in each one. Mix it up by shooting at different times of day to understand the various light tones a day can produce.

Known as the golden hour, sunrise and sunset are the best times of day to film and take photographs outdoors. If you have the time, wait for the right light, but you need to act fast as those times last only 20 minutes. During this time, the light is dimmer and warmer, allowing your GoPro to capture beautiful images with a warm tone reflected on your subjects. This is why this time is also known as Golden Hour.



As light becomes softer during the Golden Hour, you probably won’t need to use any filters to correct exposure. So your GoPro can be set to a lower shutter speed to match your doubled frame rate. Remember this simple rule from the frame rate section?

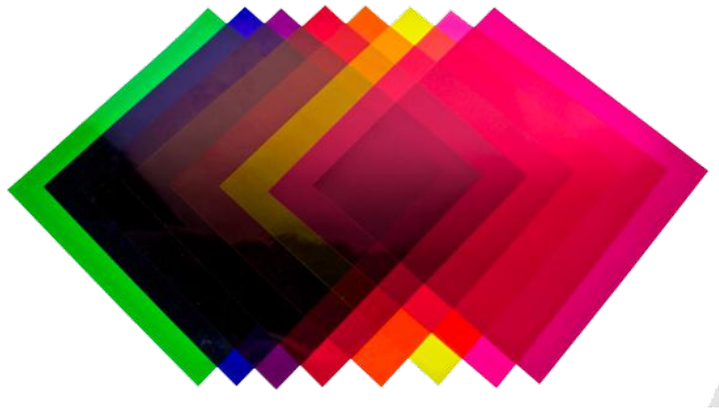
If your shoot schedule allows for it, avoid times of day with very strong or direct lighting - it could make your images appear washed out. At these times light tones tend skew colder and may need some color grading in post-production. If you can’t avoid that, consider using ND filters (see the camera gear section) to balance the harsh light, allowing your GoPro to lower its shutter speed and deliver a softer image.

WATCH YOUR WHITE BALANCE

Changing lighting conditions will, naturally, affect your image's white balance. If your WB is set to Auto, GoPro should make the adjustments itself. If it doesn't do this to your liking (or at all), then head to your Protune settings and choose a white balance value that works with your current lighting. Head back to the white balance section in chapter 9 for a refresher on how to do this.

USE COLOR GELS

These are transparent color films (gels) that are placed over a light source to enhance or spice up a background. They're helpful quick fixes when you need to adjust the overall color of a scene.



AVOID LIGHT-POLLUTED SETTINGS

Filming in large cities brings with it the potential for unwanted artifacts in your shots. They may appear as color variations, odd shadows or strange lens flares (see below). If picture clarity is your goal, avoid shooting in overly light-polluted areas.

LENS FLARE

Lens flares are common artifacts with GoPro shots because of the wide lens. More prone to this anomaly, it occurs when when a strong light source (e,g., spotlights or the sun) doesn't travel directly through the camera lens to the sensor; instead, it repeatedly reflects internally on lens elements before reaching the digital sensor. The result is a round or polygonal shaped bright flare-like artifact, as in the image below.

Because a lens flare can lower the overall contrast of your image, it's usually never a welcome addition. Some photographers might attempt to use the flare in some type of artistic enhancement. Sometimes it works. Sometimes it doesn't.

The best way to reduce lens flare is by using a lens hood on your GoPro to block out overpowering light sources.

3 LOW LIGHT

Knowing that shooting at twilight is the best way to get great warm color tones, the risk you take waiting until then increases every minute because of how small the window is for optimum light conditions. Sometimes you end up taking your best shot when it’s already dark only to realize later that your footage is too grainy.

Small digital sensors like those used in the GoPro are affected by light more than bigger sensors because of their limited surface area exposed light. Of course, there are other settings in-camera that determine the amount of light captured by your camera, including Shutter Speed, ISO and Frame Rate. DSLR cameras

also have Aperture as another lighting control element, but it's not on GoPro because of its fixed lens. So it goes without saying that GoPro's aperture remains fixed.

KEEPING A LOW SHUTTER SPEED

To compensate in dim light conditions, your Shutter Speed should be set to a low value. But to ensure a more fluid shot, Shutter Speed should be greater than your frame rate, ideally doubled, as in the example below:

- Frame Rate: 30fps
- Set shutter speed at: 1/60s

SETTING THE RIGHT ISO

If your image is still looking too dark, try to bumping up your ISO maximum value. But remember that higher ISO also creates more grainy noise in your shot. To keep image noise low, I recommend keeping your ISO max no higher than 400 and if your subject is still too dark, use an external light source for added illumination.

AVOIDING SLOW MOTION IN LOW LIGHT

As you already know if you need to bump up your lighting, you can lower GoPro's shutter speed value, allowing the shutter to remain open for longer, thereby brightening your image. Of course, shutter speed needs to be double your frame rate for the best results; they're dependent on one another. This is why, if you want to maximize your exposure in low lighting situations, it's best to avoid shooting in slow motion and keep your frame rate down to 24fps or 30fps.

4 SHOT TYPES

Telling a story with GoPro can be done in any number of ways and using different shot types make your video more appealing and your coverage more complete. Coverage refers to the use of multiple camera set-ups to cover an entire scene. Shooting an entire scene with one camera in one position, doesn't give you many

options to edit. Try filming multiple shot types to give you more editing flexibility with cuts from different perspectives. This gives your viewers different angles and perspectives on the same scene. It’s very impactful if done well.

Here are the six main shot types you can shoot:

Wide: Typically a static shot used to set and establish of location and characters, but not fixed on any particular element in the scene. Tripods, poles, gimbals or drones are useful for wide shots. Set your GoPro to a Wide or Superview FOV.

Full shot: With camera mounted nearby or handheld by the subject, a full shot is used to capture the full body of a character interacting with the setting. Set your camera to Wide FOV.

Medium close-up: With only half of the character’s body showing in the frame, the viewer’s attention is brought closer to the character in this shot. This is achieved by attaching the camera onto the character’s body with an extension arm, while facing it. Use a Wide or Linear FOV setting.

Close-up: This is a tight shot of the character, typically their face, which occupies most of the frame. It's a great way to emphasize details and capture emotions. The subject occupies most of the frame. Handheld is best for this, using a Linear FOV setting.

Extreme close-up: If you thought a regular close-up was tight, this one's even closer. It's used to capture finer details on the subject. Set your GoPro to Linear FOV to film this close.

POV: Short of "Point of View", this is a POV of the scene, as seen by the character's eyes perspective. It's like a first person perspective showing hands, arms and legs. It's a very immersive way to shoot a scene. Use a head mount or the chesty to see in POV.

5 PRIMARIES AND SECONDARIES

You can divide your GoPro shooting in two categories: primaries and secondaries. This practice helps you getting what matters in a scene first, to then move to the capturing the details.

Primaries are shot first as they are the most important shots to cover a scene. They are also less invasive and easier to get. So, should anything go wrong during the production, you'll have something to fall back on, especially when the filming scenario is quite unknown. They consist of wide shots and POV coverage, usually from head or chest mounted cameras. By organizing the shooting in this way, the filmmaker has the time to review the footage and think about the secondary shots to complete coverage.

Secondary set-ups involve poles, backpacks, close-ups or anything that can reinforce and support the primaries. Although these shots will leave more room for creativity, they might be harder to get due to the unusual camera placements.

6 STATIC vs. DYNAMIC SHOTS

By its very nature, GoPro was designed to capture dynamic action, but this doesn't mean you can't use it for something more static from time to time. Let's have a look at their uses.

USING STATIC SHOTS

These are the three main uses a static shot:

- **Establishing a scene:** A wide shot of a local landmark can open your film, communicating a location to the viewer.

- **Filming a non-moving object/character:** You can take static shots of anything not moving in the frame. It could be your sleeping cat.
- **Filming details:** Concentrating on key parts within your scene can convey certain details about the subject. This can be a pair of skis, if they're a skier.

USING DYNAMIC SHOTS

There are the two main occasions for using dynamic shots:

- **Capturing an action**: It's essential if capturing and follow a moving subject during the action.
- **POV**: If the GoPro is mounted on a moving character, taking viewers along throughout the movement, that's your dynamic shot.

7 PERSPECTIVE

GoPro's fixed super wide lens does not allow for varied "depth of field" shots (focused foreground, blurred background) like you can with a DSLR. And it's not available as an optical zoom option.

Instead of treating this as a limitation, you could take advantage of it by concentrating on and mastering the way you frame your subject.

Playing with perspectives on wide angle lenses is interesting. The ability to include many elements in the frame forces you to get more creative, especially when shooting architecture.

8 CREATING INTEREST

Simply put, this is a technique to draw your viewers into your story. An example of creating interest is starting a video of a Hawaii vacation with a shot of your character packing a suitcase. The audience knows the character is going somewhere; but where and why? Adding a simple five-second shot like this can create interest and the desire to keep watching.

Some videographers feel like they need to lay out the whole story in the first 10 seconds. It’s really not necessary. I find it’s better to get the viewer’s brain firing up by opening the door for questions or making them draw their own conclusions about what they’re seeing.

Excellent videos take you on a journey of discovery. Bad videos give you all the answers right at the beginning. Who wants to watch that?! BORING!

Ask yourself how can you can draw in your viewers and create interest. (Doing so successfully might be as easy as rearranging a few shots.)

9 THE K.I.S.S. RULE

K.I.S.S. stands for “Keep It Simple, Stanley!” This applies to your shot length and the included dialogue. If you don't need to say something, don't. If a picture is worth a thousand words and you're filming at 30fps, that’s 30,000 words per second. You don't need to describe the grass you're standing on. Keep dialogue to a minimum. It should be used to describe things that aren’t immediately obvious by your surroundings. In other words, don't state the obvious. We already know...

10 10 SECOND SHOTS

Your shots are too long; way too long! Make them shorter. How many times have you seen amateur films shot from the same angle for five long minutes? It's painful. I’m not that guy; you shouldn’t be either.

Take a second to think about how long a shot lasts in an actual professional video. It’s seconds! This is why ESPN uses 45 different cameras pointed at one game.

I challenge you to find a TV show or movie that uses the same camera angle for more than 10 seconds. It's rare. So, why are you?

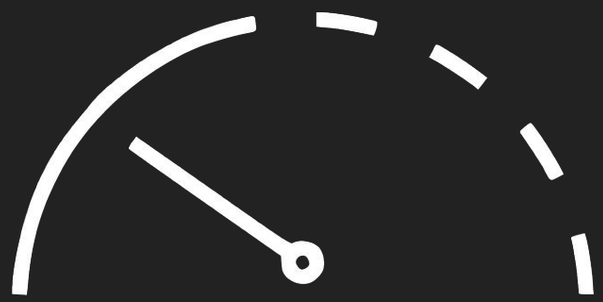
Challenge!

Next time you're shooting a video, record for no more than 10 seconds, then move. If you have a shot list like we've talked about, you'll have a ton of great angles to choose from. With longer scenes, film the same shot from two or three different angles. It's way more watchable!

Chapter 4

SHOOTING TECHNIQUES

WHAT'S YOUR SPEED? FILMING IN SLOW-MO, TIME-LAPSE OR HYPER-LAPSE.



Section 1

SLOW MOTION

INTRODUCTION

If you don’t live under a rock or an off-the-grid deserted island somewhere, you’ve probably seen a few videos using slow-motion. Whether it’s on Youtube or in your local movie theatre on a big screen, the slow-motion scene is used to enhance action - it’s also a more common feature in many of today’s consumer cameras and smartphones. The latest GoPro cameras are capable of incredible super slow motion shots (240fps) at high resolutions like 1080p - which is eight times slower than real life. Whether it’s running on the beach, surfing, or BMX tricking, capturing these actions (and more) at a higher frame rate, as a default, can provide more flexibility in post-production. In this section you’ll learn why slow motion is your friend and how to use it to create epic slow motion videos.

1 UNDERSTANDING SLOW MOTION

Slow motion in an effect where shot footage appears to be moving slower than normal. To achieve this, a camera has to be capable of shooting at a much faster frame rate than the intended playback speed. In other words, the camera takes an increased amount of still frames per second (60fps,

120fps, 240fps) and when played back at the normal speed, the video appears to be slower, smoother and more stable.

Let’s explore the reasons why shooting in slow motion can be a benefit to your footage.

But before we do that, please head over to Youtube right now and find any GoPro-shot, slow motion video. Watch that video and then come back here to continue...

Did you notice how “cinematic” the video looked and probably felt? When you watch slow motion clips of fast-moving actions (e.g., a fight scene, racing cars, explosions, etc.), your brain has much more time to process what’s going and to actually see more details than usual. That’s exactly why videographers love to shoot at higher frame rates - the post-production results are fantastic.

If you want to give your viewers that slow-motion, cinematic feeling with your videos, remember to increase your frame rate settings in-camera before you shoot the action. If you shoot at a normal frame rate and attempt to create the slow-motion effect in post-production, your clip will look choppy because of the lack of enough frames to create that fluid movement.

Provided you have optimal lighting conditions, industry experts recommend shooting all action scenes at a higher frame rate because it provides that flexibility down the road to include it in your final output. A rule of thumb is this: It’s easier to speed up a scene shot at a higher frame rate than it is to slow down footage shot at a regular frame rate.

Here’s a list of some common action scenes that would look amazing in slow motion, are simple to set up, and don’t require a crew to assist you:

- Jumping
- Backflipping
- Diving
- Running
- BMX tricking
- Skiing
- Surfing

2 HOW SLOW CAN YOU GO?

Remember the simple math calculation we used in the FPS section to figure out how slow our final film will be after post-production? Here it is again as a reminder. You'll need it again:

120fps(filmed) / 30fps(rendered) = 4 times slower

When it comes to choosing the best frame rate to shoot your video, remember that bigger is not always better. Avoid higher frame rates like 240fps if your video doesn't need it. It can put plenty of unnecessary stress on your camera's components, and it may not produce the video quality you were expecting.

As well, your GoPro model may not support all resolutions and FOVs at the higher frame rates. You can quickly verify what your camera can handle by the GoPro frame rates menu for all available resolutions.

So, what's an ideal frame rate for your shot? That depends on what and where you're shooting. Ask yourself if your target footage would benefit by appearing in slow motion.

Another important factor you must consider is the lighting of your scene. Remember that shutter speed and frame rates are codependent functions. In other words, when you increase frame rates, your shutter speed also increases, allowing less light to reach the image sensor. If your scene is poorly lit, increasing your frame rate will only produce darker shots. You need light for GoPro slow motion shots!

After shooting slow motion a few times, this evaluation process will become more straightforward and intuitive. Until then, check out the following table to help you select the best frame rate for your footage:

Activity	Frame Rate (FPS)
Travel	60
Cycling	60
Hiking	30
Drone	60
Motorcycle	120
Sport	60/120
Ski	120/240
Surf	120/240
Underwater	30/60
Sunset	30
Vlog	30
Automobile	60

3 COLLATERAL EFFECTS OF SLOW MOTION

Shooting at a higher frame rate requires extra effort and thought because of other elements added to the mix. While shooting in slow motion can be a creative benefit to your footage, the following technicalities should be taken into consideration:

- **Battery life:** With more processing power demanded of your camera, battery can (and will) drain faster. Make sure your batteries are fully charged if you intend to shoot a long slow-motion session.
- **File size:** More frames take up more space. Make sure you have enough room on your microSD card to accommodate slow-motion shots.
- **Aliasing:** if you max out frame rate and resolution on GoPro cameras (e.g., 1080p @ 240fps on HERO 6) they typically produce aliased footage on sharp, contrasty edges (learn more about aliasing in the resolution section in chapter one). Generally 2.7k @ 120fps produces the best image quality for slow-motion footage.
- **Light levels:** Low light and high frame rates do not get along very well. Earlier in the book we determined that, ideally, your shutter speed should be double the frame rate to achieve that cinematic “film look” video. But in low light scenarios you must work with slower shutter speeds (eg. 1/60s); and because shutter speed is proportional to frame rate, they both need to

be kept low (e.g., shutter speed: 1/60s and frame rate: 30fps). Alternatively, if your scene is too dark, but you still need a higher frame rate, use an external light source to get the shot.

Section 2

TIME LAPSE

INTRODUCTION

Unlike a slow-motion video shot at a higher frame rate, a time lapse video is used to speed up a slower occurring scene with longer time frames. You can see the time lapse effect often used for environmental footage like sunsets or blooming flowers. Creatively, they're often employed as a way to bridge the divide between two stories or to convey the passage of time. Time lapse video shoots are not for the impatient videographer - a sunset time lapse can last an hour or more, so they're usually shot during spare moments on location. With ideal weather conditions, time lapses can be very enjoyable and relaxing as you sit back watching the sun setting behind the horizon. This section will give you the information you need to shoot one.

1 GOPRO TIME-LAPSE MODES

When you shoot a time lapse, your camera captures evenly timed images (once every 5 seconds, for example), and when re-played at normal speed, appears faster and more dynamic.

GoPro offers two main time lapse modes (photo and video), and one optimized for night lapse shots.

Time Lapse Photo: This mode shoots actual photos at pre-determined intervals and saves them to the microSD card. It's often used for sunrises and sunsets for optimal exposure and low light settings. It's also the best setting for shoots over extended periods of time.

Pro Tip: If you are shooting long time lapses, remember to use a large capacity microSD card (64GB/120GB) and a USB power back-up.

Time Lapse Video: This mode is a time-lapse-shot video. It's typically shot in 4K30, to account for any post-production issues, such as jittery looking waves or waving trees. Having those added frames to work with gives you a bit more control during editing.

This might seem like the easier setting to shoot time lapse, with minimal post-production needed. However, Protune options are not available in this mode; your GoPro will set exposure and ISO automatically before you begin shooting your time-lapse video sequence. You have no control and therefore risk getting poorly-lit footage. See the following sunrise/sunset example:

You can see that when the sun sets, your GoPro can't adjust exposure settings to compensate for lower light levels, resulting in underexposed frames and unusable footage. So if lighting conditions vary throughout the shoot, opt for time lapse photo mode.

Night Lapse Photo: This setting is optimized for time lapses shot at night or lower light situations. It employs longer exposure settings (5s, 10s, 15s, etc.) to capture low light lapse photos.

2 SETTING UP YOUR CAMERA

Setting up your GoPro to shoot a time-lapse should come quite easy. These are the steps:

1. Press the Power/Mode button and cycle through the available modes until you find time lapse.
2. Enter in the time lapse sub menu and choose Time Lapse Video, Time Lapse Photo or Night Lapse Photo.
3. Select FOV, Interval and other relevant settings for your mode.
4. Press the record button to begin/end your shoot.

3 CALCULATING INTERVALS

Suppose you wanted to create a 10-second time-lapse clip of a beach sunset to use at the end of your summer holidays video. You're planning a 1 hour shoot, but you're not quite sure about the interval setting between frames. You can't use a setting of one frame per second (fps), for example, or your sequence would be around two minutes...not 10 seconds!

What makes a great time-lapse sequence is actually the ability to get the right interval time setting for any given situation. Before you assume it's mostly trial and error, consider the following process/formula to calculate your time lapse frame rate interval:

1. Determine how many frames you need:

(Desired duration in seconds) x (Frames per second for playback) = number of frames in the time-lapse sequence.

When we plug in the numbers for the a 10 second beach sunset sequence that plays back at 30 fps, the formula looks like this:

10 (seconds) x 30 (fps) = 300 frames

2. Determine the interval between frames:

Next, you've determined that the sunset takes 60 minutes (3600 seconds) to complete, you can calculate

the interval as follows: obtain the interval, simply divide the shooting time by the total number of frames.

(shooting time in seconds) / (number of frames calculated in #1) = Interval time in seconds

With the numbers plugged in:

3600 (sunset seconds) / 300 (frames required) = 12 (second intervals)

3. Standard interval values

Of course, despite your calculations, you may want to adjust the interval setting depending on what you're shooting. For example, our slow-moving beach sunset might require a longer interval, whereas a faster-moving subject might require a much shorter interval to get the best footage.

GoPro recommends the following interval times by activity:

Activity	Interval
Cycling, mountain biking	2 second
Hiking	5 second
Drone	2 second
Motorcycle, motocross	2 second
Skiing, snowboarding (POV)	0.5 second
Surfing	5 second
Underwater activities	2 second
Water activities	5 second

4 TIPS FOR CAPTURING INCREDIBLE LAPSES

Here there are the five golden tips to try for your next-time lapse.

1. Mount on a tripod

Keep your GoPro steady throughout the entire time lapse sequence by using a tripod. Remember to set the tripod on a sturdy and flat surface.

2. Take your time

Planning your shot in advance and framing it properly will increase your chances of capturing perfect time lapses, especially for those longer wait times. Understand your setting to know if sunlight or darkness or dynamic elements could potentially obstruct your shot.

3. Get the interval right

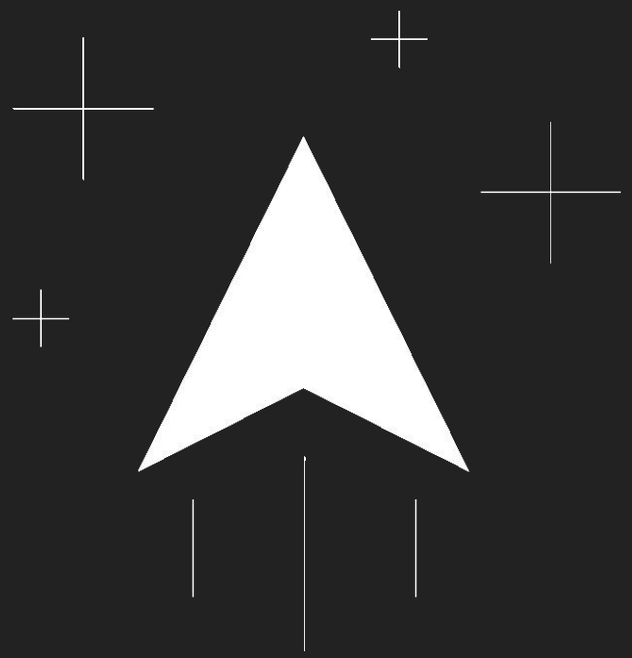
Calculate the interval time in advance by using the formula to ensure you get a time-lapse sequence of your desired length.

4. Use a fast, large microSD card

Because time lapse sequences have the potential to capture many frames at a high resolution, you want a storage card with enough capacity to save every frame, and fast enough to perform smoothly.

5. Watch your battery

Make sure your battery is fully charged before beginning a time-lapse shoot. If you’re shooting a longer time lapse, you should consider investing in an external power source and keeping your GoPro connected to it throughout the entire shoot.



Section 3

HYPER LAPSE

INTRODUCTION

Hyper-lapse is a time-lapse filming technique used to add motion to time-lapse video. So instead of keeping your GoPro immobile on a hard surface or attached to a tripod, you take a time lapse shot while moving the camera. This shooting technique became more popular with GoPro camera users in the past few years, particularly with the HERO 7, as improved stabilization algorithms made it possible.

Users of earlier GoPro models don’t have to skip this chapter, because this is where you’ll learn how to shoot smooth hyper-lapse footage with any GoPro, including the ones that don’t have any built-in stabilization functionality. We’ll start with more manual and traditional techniques to the process, like maintaining consistent framing on your subject while shooting on a plotted path. You’ll be amazed at the results when shot properly.

1 PLAN THE SEQUENCE

A little preplanning of your moving time-lapse sequence is crucial to getting great results for your hyper-lapse video. Often the key to success is simply knowing what the shoot will include and how it’s going to be executed.

- **Pick your subject/location**

Choose a location that allows you to freely move around your subject. Examples of hyper-lapse locations can be large buildings, landmarks, crowds of people, etc.

- **Assess your shooting path**

Scout the location to understand the path you want to take while shooting your sequence. Try to anticipate potential obstructions and determine a plan to avoid them if possible.

- **Estimating the amount of shots**

As with time-lapse, you need to calculate the numbers of shots for your sequence based on the desired length of the clip.

Here’s a reminder of the calculation from the previous section on Time Lapse:

(target duration in seconds) x (playback frames per second) = number of frames in the time-lapse sequence

A 10 second sequence that plays back at 30 fps would require 300 frames.

→ *(10 x 30) = 300 frames*

- **Calculating distance between shots**

Once you know the distance of your shooting path, simply divide it by the number of frames you just calculated (300 frames, in our previous example). This is how you'll determine the distance you need to take

between every shot, while keeping the camera pointed at your subject.

Using our previous example, if our total shooting distance is 100 feet (~30.5 meters):

Distance of shooting path / Number of shots in the sequence = Distance between each shot

or

100 (or 30.5) / 300 = 0.33 (or 0.10)

Based on this calculation, we need to shoot our subject (move our shooting position) at distance intervals of every 0.33 feet (0.10 meters).

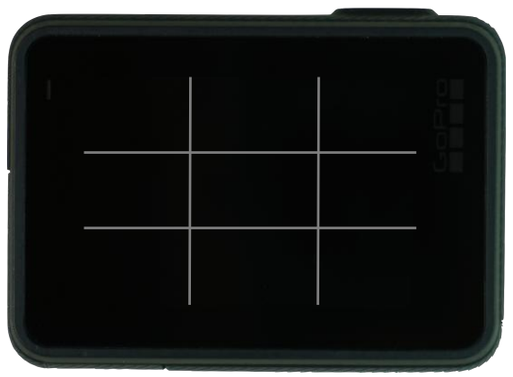
2 SETTING UP YOUR CAMERA

Once you've figured out your shoot location, subject and path, you can set up your camera and prepare for your shoot. Ideally, you're using a tripod to keep your shots fluid and consistently framed throughout.

DRAW A GRID

Grid lines are common features on many video cameras. When shooting a hyper-lapse, a grid can be very useful when framing your shot and fixing reference points. However, there's no such feature on your GoPro, so we're going to draw one!

To do so, you'll need a protective film for your display (like the one commonly used on smartphones). First, get a ruler and measure the length and width of the GoPro display. Then, cut the film to size, and apply it. Next, draw your grid lines over the protective film with a marker to divide the screen into thirds like you see below.



ENABLE PHOTO MODE

With your grid in place, set your GoPro to Photo mode to manually take a frame for every step you take forward along your path. You could also try shooting a time-lapse with a few seconds interval to allow for location changing.

SET A WIDE FRAME OF VIEW (FOV)

Hyper-lapse sequences are often shot using a wide FOV to include large buildings or landmarks in the frame, as well as the surrounding area with things like pedestrian movement, traffic, birds, etc.

FRAME THE SHOT

Use your DIY grid to help you set reference points in your frame. Compose the shot and adjust your Protune settings based on surrounding lighting conditions, bearing in mind that outdoor lighting may change direction and/or intensity while shooting your hyper-lapse. Also notice that setting your GoPro on a tripod will help stabilize the footage.

The image below shows a hyperlapse setting, where the temple is the subject in frame and the pathway is where the filmmaker operates.

3 SHOOTING A HYPER-LAPSE

Once you've got the perfectly framed shot, you're ready to shoot-and-move! The process is quite straightforward:

1. Verify your frame and make sure your subject is always in the same position.
2. Take a photo
3. Move one step forward
4. Take another photo

You should already have an idea of the distance of your path from start to finish. Try to maintain evenly spaced, consecutive movements (or steps) if you want your footage to speed to seem consistent throughout. By increasing the distance between shooting positions, for example, your resulting hyper-lapse video will play faster.

The following images illustrate each step of the process. Notice how the temple is anchored in the

middle of the frame for each shot. The grid makes it easier to keep the point of reference centered.

4 STABILIZING YOUR HYPER-LAPSE

Stabilization with your GoPro is what makes all the difference in a hyper-lapse. If you framed your shot correctly and consistently along your path at every stage of the sequence, you should be good to go!

Stabilization of your hyper-lapse doesn't need to end with your camera. Once you're done shooting, the final step is to import your image sequence into your preferred video editor begin production of your final product.

Apply Wrap Stabilizer (Adobe Premiere) or Stabilization (Final Cut Pro X) Digital Stabilization to smooth out rough movements, set the the speed of your sequence and get it ready for exporting and viewing.

Chapter 5

INTRODUCTION TO EDITING

TAKING YOUR SHOTS AND MAKING THEM WORK AS ONE PERFECT FILM

THE FINISH LINE: POST-PRODUCTION

If you've made it this far in the book it means you're pretty serious about taking your filmmaking to the next level. Learn, practice and experiment. As in many pursuits, this how you do it.

Up to this point, you've learned about the full shooting cycle: from planning a compelling and watchable storyline to setting up your GoPro camera, as well as the best camera settings to use based on factors like physical location and what you're shooting.

Keep practicing. Keep shooting, because you're only a few steps away from shareable content. This chapter focuses on the editing process and the main steps of post-production.

One of the main challenges that GoPro users experience - even the professional ones - is controlling how much footage they shoot. It is possible to shoot too much footage.

One of the more important, and undervalued, skills of a good filmmaker is knowing when to shoot, what to shoot, and also when to stop shooting. While it may seem counterintuitive to hold back, being an efficient videographer is extremely important. The expression that comes to mind is "Time is money" -- if professional videographer is in your future, you'll probably hear that quite a bit. So while scaling back your captures is a good start, keeping shot footage organized will save you plenty of time down the road, especially in post-production.

So let's start with keeping your footage files organized for a sweet, smooth editing process.

CREATING YOUR FILING SYSTEM

Everyone has their own "system" of organization. While we feel it's important to use whatever method works best for you, it can't hurt to see how someone else does it. In the end it might help.

Let's start with the assumption that the space you've apportioned for your GoPro footage is completely empty. Here's how we would set up our filing system:

1. On your computer's hard drive, in a conspicuous area, create a dedicated folder for your GoPro's files. Make sure you've got enough space for many files.

2. Name this folder something you can remember. We'll use "GoPro Production".

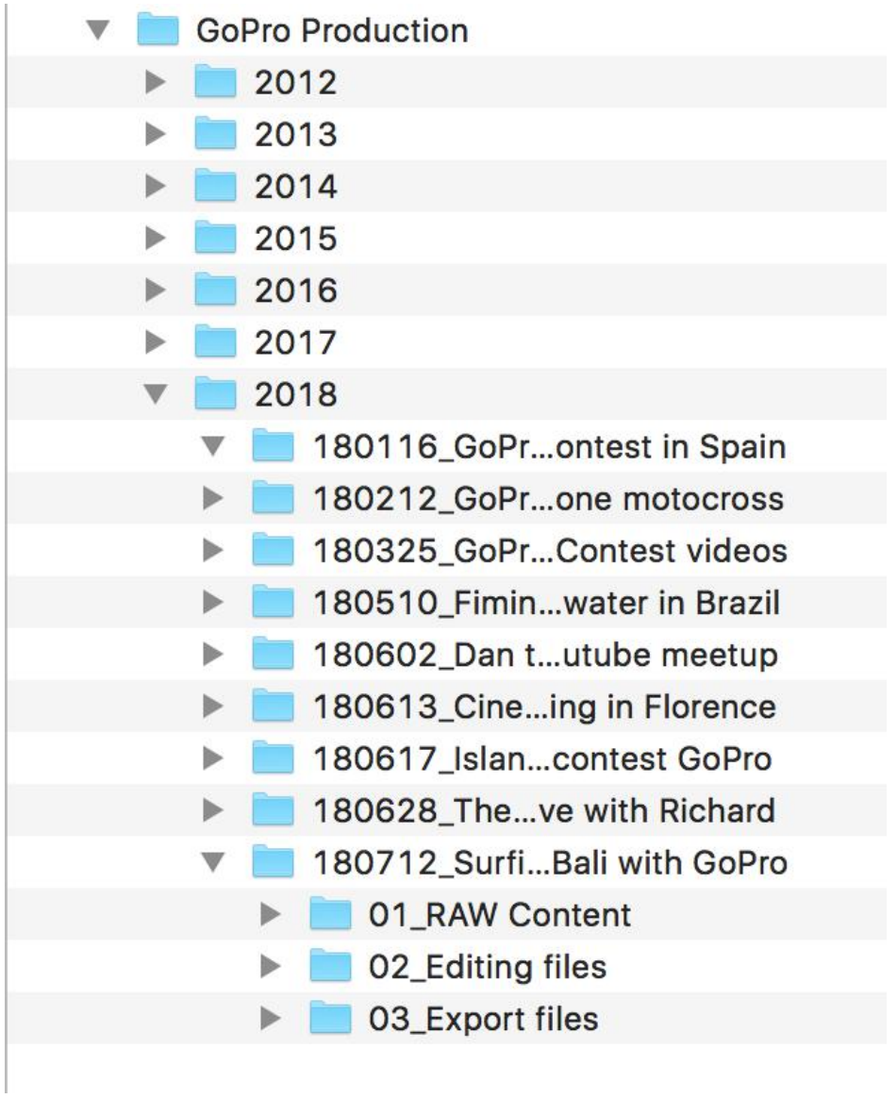
3. Within that folder, create another folder or many folders with a year. We'll start with "2018".

4. Again, within the "2018" folder, create yet another folder, using the even name for the folder's name. Some people like to include the event date in the name as well, to add another layer of order. We'll name one of ours "180712_Surfing_in_Bali_with_GoPro".

5. Now, within your event folder, create a new folder for your camera content, we'll name it "01_RAW Content"; then create one for your editing files (where you'll save files related to the editing software - Premiere Pro, Final Cut Pro, etc.), we'll name it "02_Editing files". Finally, create a folder for your export files, we'll name it "03_Export files"."

That was pretty easy, wasn't it? We also recommend you do the same on an external hard drive and/or a cloud-based solution. It's always good to have backups.

Check out the following screen capture of our file organization structure. Feel free to use it as inspiration to get yours going:



1 IMPORTING CONTENT TO YOUR COMPUTER

Now that all of your filing system is set up, go ahead and plug your GoPro into your computer via USB.

Access to the memory card's folder and import the media files corresponding to the event folder you've already opened on your computer.

You are now ready to start post-production editing.

2 CHOOSING THE RIGHT VIDEO EDITOR

There are many video editing applications on the market; understandably, it can be difficult selecting the one that's best for you. If your intention is to stick with post-production work, you might opt for a professional or semi-professional editing app to give you as much freedom as possible to learn as much as possible.

Unlike GoPro's bundled app, Quik (for mobile and desktop), professional apps like Final Cut Pro or Adobe Premier offer the most advanced options, as well as many ways to customize your own effects, like transitions, color grading and much more.

Let's take a look at your options:

BASIC EDITING

If you're looking for a quick and simple solution to your editing needs, like simple cuts and stock background music and graphics, download **GoPro's Quik app** and get started right away! It's free, and you can perform basic editing functions. That's about all you can do. For easy editing, this is your solution.

PRO EDITING

The apps listed below are used by filmmakers of all genres and skill levels - from amateur YouTubers to professional video directors.

Final Cut Pro X [Mac only] - If you edit with a Macbook, this is your go-to app. Designed to be user-friendly, it's quite easy to learn. What's special about this Apple-made app is that it includes bundled video transitions, titles, video effects and sound effects that

are actually quite pleasant. With a little practice, you can do quite a bit with this app.

Adobe Premiere Pro [Windows & Mac] - Adobe's video editing app is by far the veteran of the group and certainly one of the most-used by professionals. It's very robust and offers the flexibility many of its "competitors" don't. It's not the easiest on this list, but with lots of practice, there's no end to what you can do with your videos.

Filmora by Wondershare [Windows & Mac] - This is a modern video editor with professional features made simple. They claim to be the most simplified editor with pro-level features. There's a function that optimizes the editor for action cameras, enabling features like lens distortion, stabilization, and others, all in a user friendly interface design.

DaVinci Resolve [Windows & Mac] - From what we've seen of this app, it has tools for editing, visual effects, motion graphics, color correction and audio post production.

It may take you a few times to find the app that suits your needs. We recommend trying each one a few times before committing. To keep your costs down - some of these apps are pretty expensive - subscribe to their trial periods, if they have one, and use it as much as possible to get a feel for how it works and if it works for you.

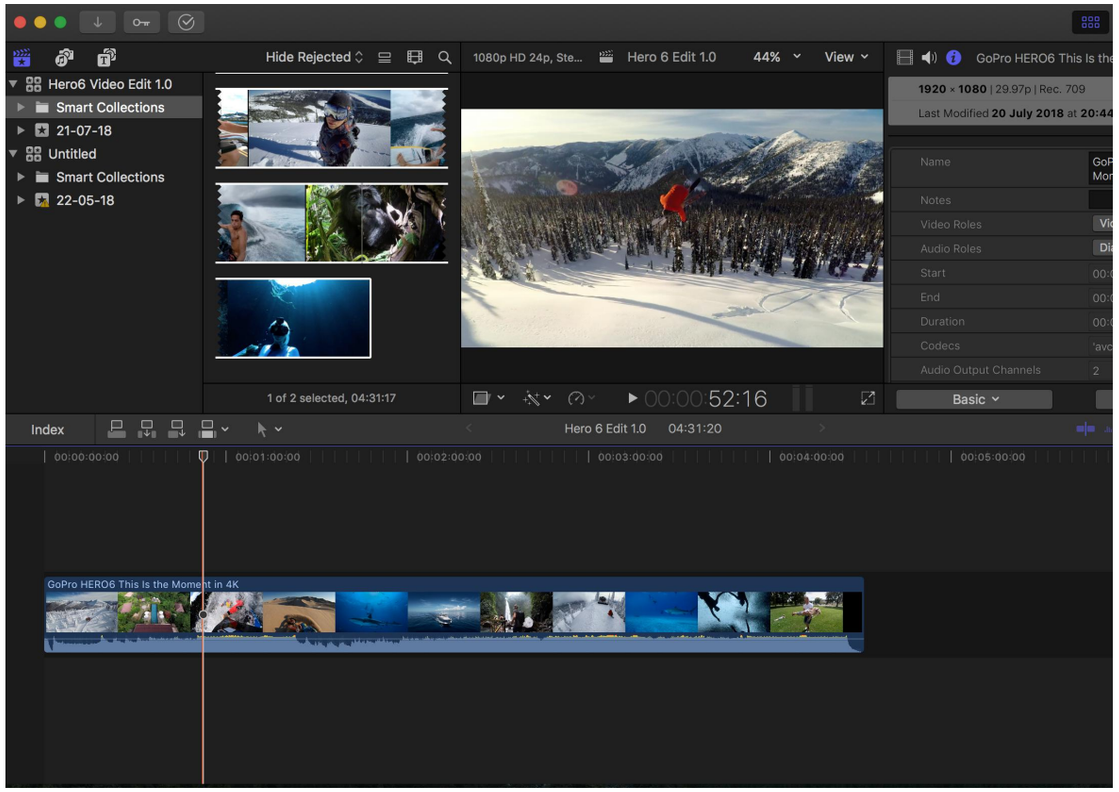
4 CREATING A NEW PROJECT

Once you've chosen your preferred editing app, the next step is to create a new project with your working media file(s). Remember to save your new projects in the folder marked "Editing", within the corresponding event-labeled folder.

Now go ahead and import your RAW video clips into the editor. Typically you can drag and drop the clips into the app's dashboard, or simply do it the tradition way within the dropdown menu system (e.g., File → Import/Open).

You should be presented with an empty "timeline", usually located at the bottom half of the screen. This is where you will be editing your video clips.

Here is how it looks when importing files into Final Cut Pro's timeline:



provide some guidance in cutting footage on a song's beat. We get into this a bit more in the next section.

Don't forget about sounds effects. They will help your audience engage with the visuals. Adding sounds as small as a bird whistle on your landscape shots can make a world of difference in your final output.

Choose a song that fits the style and pace of your footage. There are plenty of online sources of stock music and effects for video creators. Some are free and others require a licensing fee.

5 CHOOSING BACKGROUND AUDIO

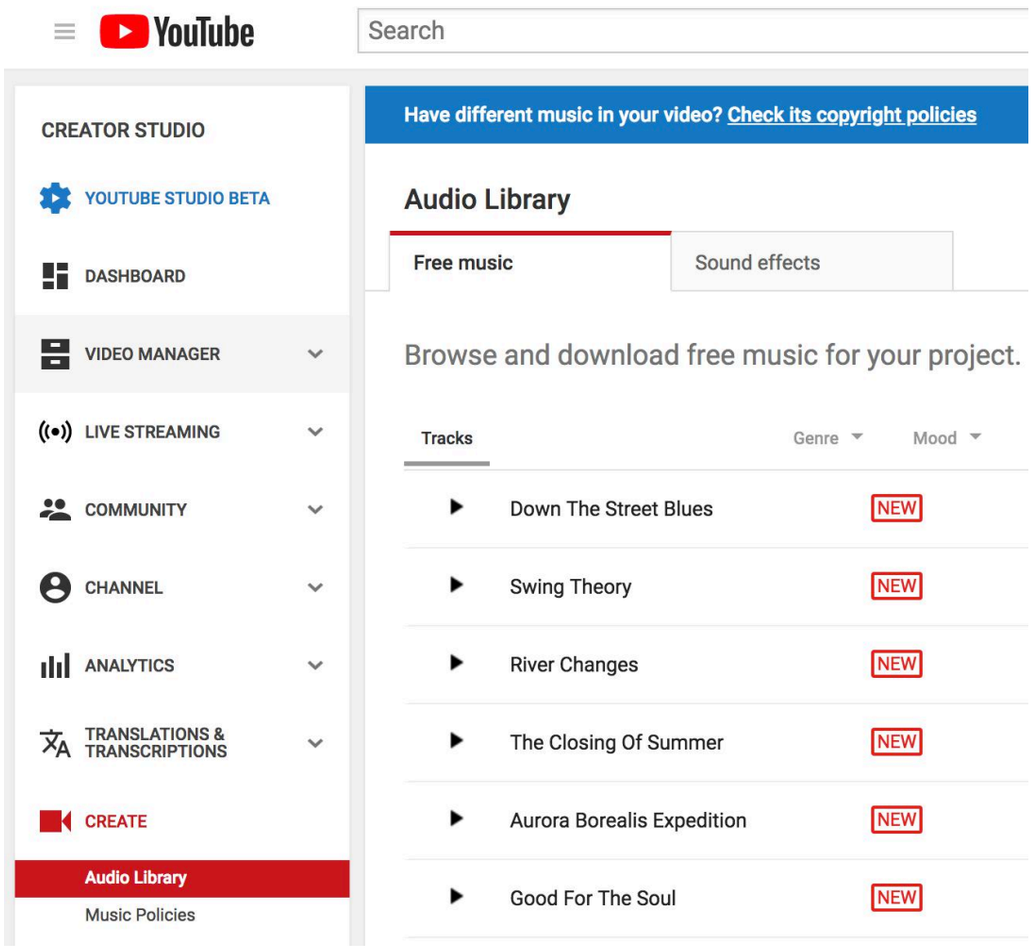
A common oversight in post-production is not incorporating music sooner in the process. A movie soundtrack can set a scene's tone or mood. So it goes without saying that a film without music and audio effects might appear (or sound) incomplete.

We recommend choosing and incorporating the right soundtrack for your film as early as possible. It will also

FREE COPYRIGHT MUSIC

Youtube is one of the sources of copyright-free music and audio effects. It's a perfect solution for non-professional projects.

It can be found in the Creator Studio, under Audio Library, as pictured below:



You can also find a few good channels on Youtube offering copyright-free music.

Avoid using any “rights protected” sound tracks prior to obtaining permission. These days, most social media algorithms can recognize copyrighted soundtracks and actually prevent your videos from uploading.

ONLINE STOCK LIBRARIES

A terrific resource, not only for content creators who need stock music, but also for the talented musicians themselves to get their names out there. These online stock music libraries cross all genres and are very popular among video creators, because they offer quality music at modest rates. Take a look at the following sources for stock music:

1.Epidemic Sound

2. Artlist

3. Audiojungle

6 CUTS ON THE BEAT

Using music as an editing point of reference - particularly using the rhythm or beat - for cutting clips can make editing that much easier and certainly way more enjoyable for your viewers. This is why choosing your music early on is good editing practice.

Once you've selected one or more songs to fit your video, create a new timeline in your editing app and import the soundtrack into that timeline.

The next step is adding your raw clips onto your timeline to start composing your story. Begin with your clips in chronological order. You may need to cut and trim unnecessary portions of some of your clips as you build your story-line. This is where "cutting on the beat" becomes helpful. Try matching your footage cuts to the up- or down-beats you can spot on your audio timeline. They look like hills and valleys. A video synched in this manner enhances the watching experience exponentially. It's also really cool and fun to do!

If your soundtrack is long and repetitive, try varying your cut points on the timeline. Try being unpredictable and off beat. See if you can find the natural passages in the music where you can re-paste your cutting, letting the shots linger or rapidly moving from one shot to the next.

When we edit videos at Project GoPro, we almost always start from the soundtrack. More often than not, I'm thinking about a suitable soundtrack as early as the filming stages. It helps me design the film as a whole, rather than in potentially mismatched pieces.

TIP: Once you identify the music beats (up and/or down) along the timeline (hills and valleys), add markers to them. Your editing app has this feature to make it easier for you to find these "cut points" during post-production.

7 ADDING TITLES AND TRANSITIONS

Onscreen titles are not only used for introducing and closing the video, but also to communicate and reinforce a message in the storyline. When shown using large-sized characters, they are a great way to visually narrate a story, perhaps to supplement vocal narration or when there's no narration at all.

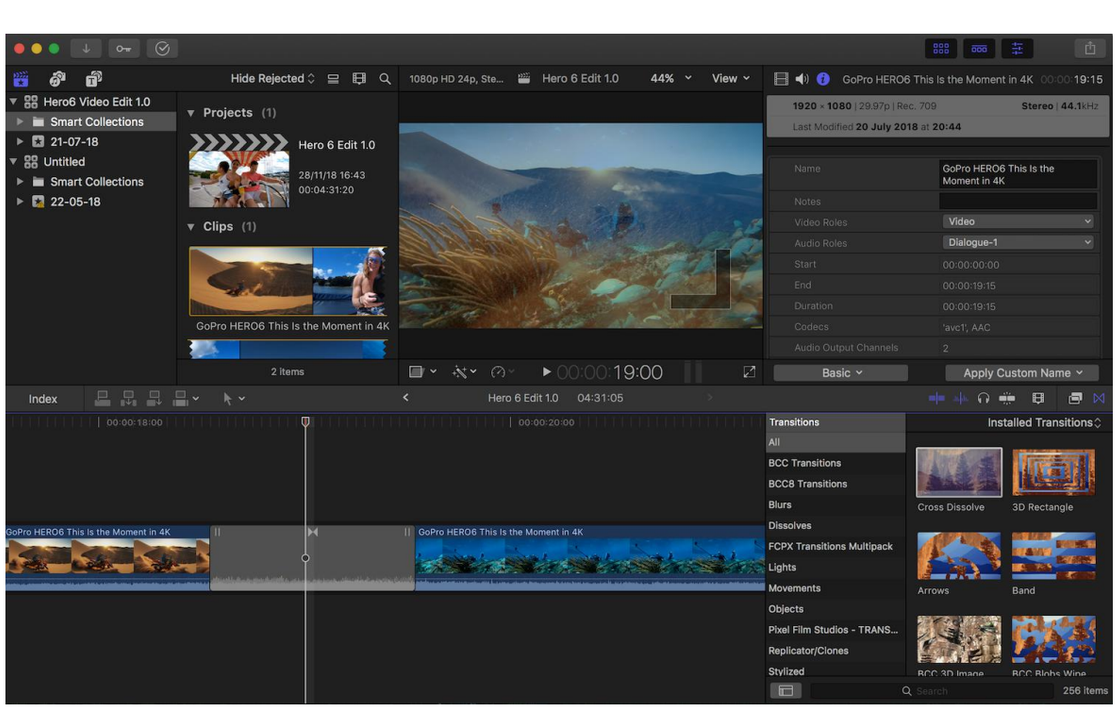
Overuse of onscreen titles could potentially distract the viewer from the scene; so try to have a reasonable balance between visual and vocal narration.

Editing video with a straightforward cut is the most useful, the most common and the easiest way to transition from scene to scene. But because all

projects are different, there are times when you need to up your transition game somewhat.

The so-called smooth transition seems to be the trend for GoPro film styling. These typically include slide, spin, wipe, zoom, etc.. and can be installed on most professional editing software, if they aren't already bundled.

The "dissolve" transition is the most widely used. It's simple and usually comes with most editing apps. We recommend going with this transition for a quick and simple solution.



8 ADJUSTING COLORS

Raw footage can sometimes be under saturated or bad exposed. Color correcting is the process that balances color; it includes adjusting exposure, contrast and simple color levels. This process produces the most realistic representation of what your eyes actually see. If white and black levels are what your eyes see, the footage colors should be balanced.

On most professional editing apps, color correction is a fairly standard and readily accessible feature.

Color grading is where you create your video's aesthetic. It's an entirely optional process, especially if film realism is your goal. Of course, color grading does help express a visual tone or mood to heighten the narrative. For example, boosted orange and blue tones could be used to enhance a travel story, as depicted in the following color graded image:

Among professional film editors, there are dedicated teams of people just for color grading films - they're called Film Colorists. So you can imagine how widely-used this niche can be. We made our own Project GoPro color grading filters packs, specifically designed for GoPro footage style. They are essentially color presets designed by film colorists for filmmakers who have very little or no experience in color grading. It makes this skill that much more accessible so that anyone can apply professional level color tones.

Our cinematic color grading pack offers a wide range of color tones to cover most GoPro activities.

Included in this package are 36 color presets:

CINEMA - Cine Automobile, Cine Cycling, Cine Drone, Cine Hiking, Cine Motorcycle, Cine Ski, Cine Sport, Cine Sunset, Cine Surf, Cine Travel, Cine Underwater, Cine Vlog

ORANGE & TEAL - Orange Teal Colorful, Orange Teal Fantasy, Orange Teal Light, Orange Teal Retro, Orange Teal Vivid

WARM - Adventure, Desaturated, Landscape Lover, Nature, Pastel Vibes, Pool Party, Retro, Sepia Tone, Sparta, Tropical, Vintage

COLD - Aqua, Blue Lake, Cold Fade, Dreamy Blue, Dreamy Green, Faded Ice, Green Nature, Light Punch

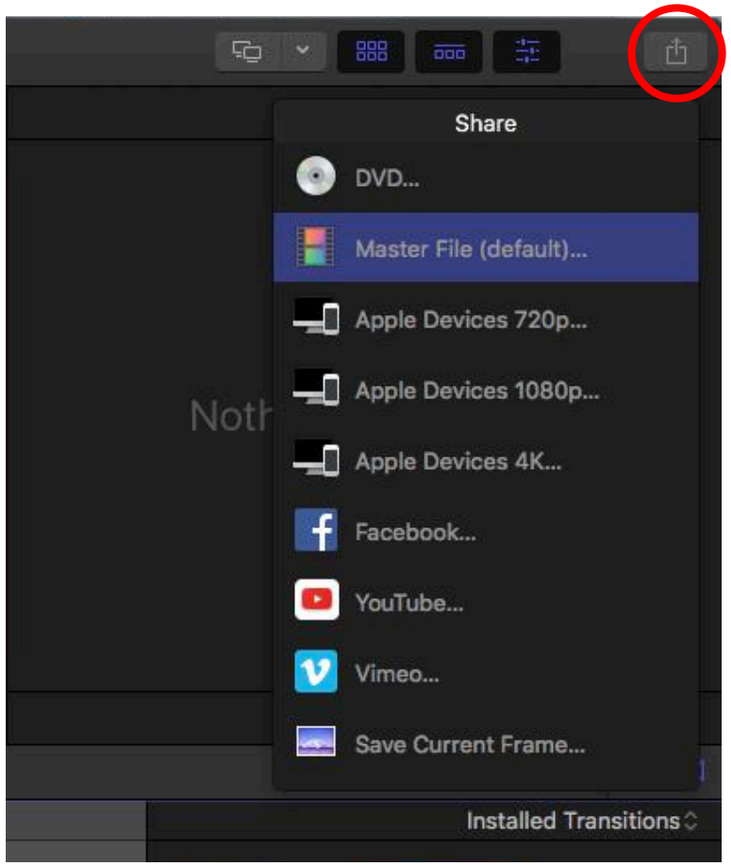
9 EXPORT AND SHARE

We’re almost there. Can you see the flickering screen light at the end of the tunnel? You’re just steps away from being filmmakers. We are finally at the last stage in the editing process: exporting.

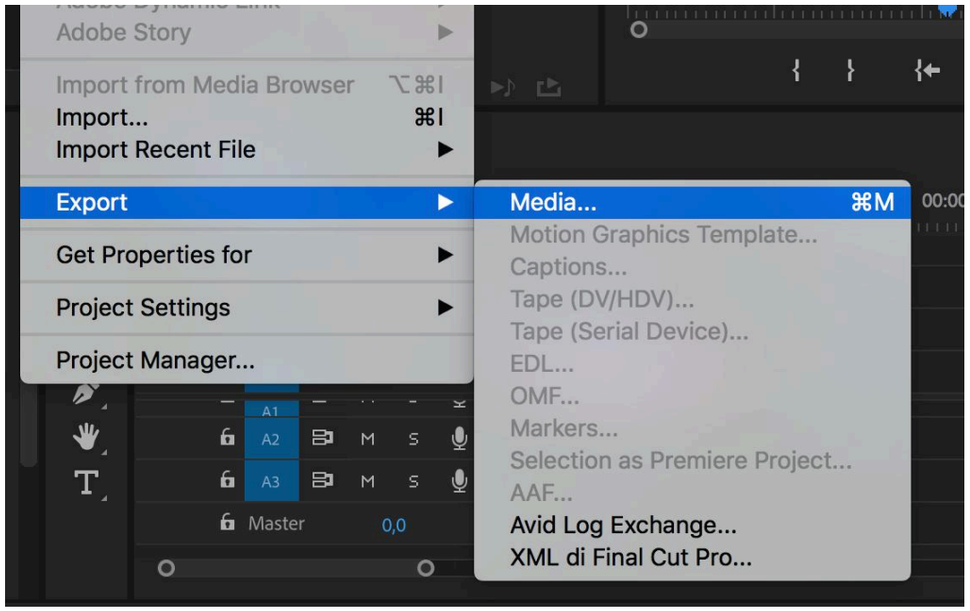
After reviewing your edited video a thousand times (or so it feels), you might want to get some feedback. It may just be your family beach weekend, but it never hurts getting an outside opinion. You can ask your best friend or even your mom (who may not be very objective, mind you).

If you’re hoping to improve your filmmaking skills, you need to put in the work and you need to ask for feedback. So before you hit the export button, show your work to a few people...even mom.

The exporting process is fairly universal today. Regardless of which app you’re using, it’s usually not too difficult figuring out where that is. In Final Cut Pro X, for example, you just need to click on the Share button as shown below:



On Adobe Premiere Pro, the Export button is under the File dropdown menu:



Pay close attention to your export settings. Some apps will let you chose from different compression settings, resolutions and codecs. Similarly to when you selected filming quality directly on your GoPro, you should select the appropriate export settings based on the purpose of your video and the platform on which it will be played.

If you planned to upload your video to Youtube, for example, you probably shot at least in 1080p. Your export settings should reflect that.

PRO TIP: If, for whatever reason, you shot footage in different resolutions, export your film with the least resolution you used to film. For example, if you're cutting together a movie with both 1080p and 4k footage, export your video at 1080p.

For mobile use, a higher compression or lower resolution (720p) could be a better option so that you don't use too much space on your device.

If you have the option to choose a codec, select H.264, which is the codec GoPro uses.

Finally, all you have to do now is hit the export button and you're ready to share your hard work with your family, friends and the rest of the world!

The End