



BAMPI DIY AUDIOVISUAL GUIDE

DIY AUDIOVISUAL GUIDE

The following pages contain both quick-start guides or both audio recording and filming, and a more in-depth look at some of the relevant details of each discipline.

If in doubt, before you press record, ask yourself these questions:

- 1 Is your subject and scene sufficiently lit?
- 2 Is your phone or camera stable and focused?
- 3 Is your microphone in the optimum position?
- 4 What's in the background of your shot?
- 5 Have you tested the audio?
- 6 Is there any background noise?
- 7 Are you filming and/or recording in high quality with the best equipment available?

Remember, you can be as creative with your filming as you are in your making. Enjoy!

Tools around the house that may come in handy before you begin:

Tool	Function
Pile of books	Camera stand
Lamp	Lighting
Skateboard/roller skates	Camera stabilisation
Tape+stand	Camera/microphone stand
Shower curtain/white sheet	Lighting softener
Lamps	Lighting
Alternative bulbs	Lighting options
Duvet	Sound deadening
Headphones/earphones	Monitoring

VIDEO

QUICK START GUIDE

- / Your phone likely has a pretty impressive camera. By exploring the settings and using some ingenuity and household items (primarily lamps!) you can capture scenes beautifully. Use the main camera rather than the front facing one – it will likely be significantly better.
- / Familiarising yourself with some basic editing software (Lightworks is a good free cross-platform option) will help you present your work in the best way.
- / Think a lot about lighting! Make sure your subject and scene are visible but also lit in a way that is flattering and engaging. [Easy light setup to improve your films](#)
- / Pay attention to the framing of your shots. Shoot in landscape, make each scene visually interesting, keep angles natural and flattering, make sure that your subject is in focus and in the centre of the frame!
- / Make your still shots really still by utilising a tripod or making a stand for your camera. Utilise camera movement to move through or reveal more of a scene. Handheld looks natural but it's possible to get smoother, more cinematic movement with a little experimentation (skateboard, selfie stick, etc).
- / Hold shots longer than you think you need to and do more takes than you think you need to! You will appreciate it when it comes to editing.
- / Optimise your camera settings by using manual mode or an app which allows manual camera adjustment on your smartphone. Shoot in high quality (1080p or 4k) and experiment with aperture, exposure and white balance to get the correct tone for your shot. Be aware and slightly wary of ISO – it will add light but also noise to your images.
- / This guy uses a lot of equipment that will be out of reach for most students, but his video is far more about technique than gear and is a good starting point for thinking about the variables in play. [How To Make A \\$300 Camera Look Pro!](#)

VIDEO

AUDIO

A strange thing to start with perhaps, but often neglected by video-makers. Audio is as much a part of a film experience as the imagery, and bad quality audio will remove the viewer from a scene almost as quickly as poor quality images. There are some audio-specific tips below to make this subject less daunting.

Another thing to bear in mind when working with audio and video together is synchronization of the two in post production. This is part of the job of a clapperboard. An audible handclap in view of the camera and in range of the microphone will make synchronization a lot easier when it comes to it!

MOVEMENT

If you would like a shot to be fixed and still, then use a tripod or prop up the camera/phone on a surface. If utilising still shots then the scene needs to be explored and progressed with cuts in the editing process. Alternatively moving shots can be used to follow a moving subject or reveal more of the scene. Be aware of (to avoid or utilise) the realism that natural handheld movement can impart upon a scene.

If you want to create a shot with smoother movement at home with a smartphone then you can use a skateboard/roller skate/selfie stick etc with a little creativity to reduce the instability that is inherent with purely handheld shots. With a camera you can also use a gimbal.

FOCUS

Make sure the subject is in focus (or out of focus if that's your creative choice)! If you're on a phone this will usually mean tapping the frame where you would like your focal point to be (use your own judgement to back up the machine's). If you want to fix the focus at a certain depth you can use manual mode on your camera, or on your phone use an app which allows manual camera settings to establish a fixed manual focal point. Depth of field is the term used to describe the amount (in terms of distance from the camera) of the scene that is in focus. A shallow depth of field will separate the focal point from the rest of the frame, and a deeper will have the opposite effect.

It's quite difficult but not impossible to effectively tweak the depth of field with a smartphone. Depth of field can be affected in several ways. Firstly, increasing the depth of field can be achieved by increasing the distance between the camera and the subject (which can be in some way compensated for by zoom) and reduced by getting closer.

If using a manual camera or an app with manual mode on a smartphone, reducing the 'aperture' (or increasing the 'f-stop') will increase the depth of field whilst subsequently reducing the amount of light that the camera takes in. Either increasing the amount of light in the scene or increasing the ISO (digital gain) on the camera can compensate for the reduction of light into the camera.

VIDEO

LIGHT

Lighting is perhaps the most important aspect of a video, and the factor which so often separates amateur from professional video work. Light's first function is of course to enable the viewer to see the scene, and whether there is enough light to achieve that goal should always be an early consideration. However, flat light is unnatural and uninteresting to the eye, and therefore a successful lighting setup will also create draw, depth and visual interest with an interplay of light and shadow. The subject and the scene should be lit in a way that engages the viewer in the way that you as the storyteller want them to be engaged. In the example of a musician or a dancer performing in a space, you will probably want the performer to be the primary point of focus, but also ensure that the viewer has a good idea of the rest of the space. This might involve focusing your primary lighting on the performer and filling in the rest of the scene with other sources. Household lamps are a surprisingly sufficient source of video lighting, and with some care and diligence you can achieve a very slick look.

Lights have several qualities you could think about here. Brightness, temperature and hardness. Hardness is a quality that is defined by the relative size, distance and angle of a light source from a subject. A hard light will leave little gradient between light and shadow. Soft light is generally more flattering and useful for lighting a subject and scene. Increasing softness can be done very easily at home by using lampshades or hanging translucent shower curtains/white sheets to diffuse the light coming from a source, or by lighting the subject indirectly (by bouncing an otherwise hard light off the walls or ceiling). Ensure that the temperature of your light source is neutral on film, without looking unnaturally warm or cold – unless that is what you would like!

If possible, typical lighting setups involve three or more lights.

When lighting a scene, begin with the lights off and build your lighting up from there.

Key light

The primary light for a scene is called the 'key' light. The key light is the primary light for the subject, and sets the tone for the whole scene. Thinking about the properties mentioned above will help you achieve the right tone. The key light should usually be placed off-axis to the subject in order to create visual interest (flat light is boring). *NB: Lighting people from a low angle casts creepy shadows.*

Fill light

The shadows created by the key light can be compensated for by the use of a 'fill' light. A fill light is typically placed in a position opposing the key light, and is softer or less bright in order to maintain a variance in lighting and therefore visual interest.

Backlight

A 'backlight' pointed at the rear of the subject is used to separate the subject from the background and further focus the viewer's interest. Positioning is important. A hard backlight that is pointing at the camera will create a silhouette and ruin your shot. Soft backlights in frame is a stylistic choice which can further act to separate the subject from the background and add depth to a frame.

Finally, the rest of the scene is lit with 'background light'(s). These fill in the rest of the set, add interest to the frame and further separate the subject from the background.

[Easy light setup to improve your films](#)

On the camera side there are two settings to be aware of at this stage:

Aperture/F-stop: both terms refer to the amount of light that is mechanically let into the camera. F-stop decreases as aperture increases. On smartphones, exposure is often used to describe a trio of settings including aperture.

ISO: or digital gain refers to the brightness that is added by the camera. Increasing the ISO by modest amounts can be useful to compensate for low light situations, but will also add noise or distortion to the shot at higher levels.

VIDEO

FRAMING AND DEPTH

Ensure your subject is in frame at all times (it's easy to miss off the top of someone's head!). Shooting in landscape allows more of the scene to be framed and shown at any point unless the primary viewing platform is going to be solely smartphones, in which case portrait is your best bet. Avoid distractions in shot and try to curate the frame in a way that focuses the viewer's attention where you want it to be focussed. Shots can be zoomed/cropped when you edit but you cannot add information which you didn't capture!

When shooting, hold your shots for longer than feels natural. In the editing phase you will appreciate having the extra time to play with. Again, you can always cut extraneous information but you can't add it in.

A different consideration to the aforementioned 'depth of field', 'depth' in a shot is the amount of visual interest you have outside the primary subject and point of focus. You can create depth by ensuring that your subject is separated from the background through lighting and focus, the background is dressed and interestingly lit, and your depth of field is appropriate to the scene.

QUALITY AND RESOLUTION

Set video quality to the best that your camera/phone can manage, at least 1080p- and 4k if it's an option. 4k will allow you greater freedom in the edit when it comes to zooming and cropping whilst retaining a sharp image. 24/25 frames per second (fps) is appropriate for anything played back at real speed and will look natural.

If you want to give things a hyper-real look then you can play with higher frame rates, but as a rule of thumb do not mix frame rates in a project. The exception to this is if you want to utilise slow motion – where you will record at a high frame rate but play back at 24/25fps along with the rest of your project. Many smartphones have a dedicated slow motion mode which allows shooting at 240 – 480 fps!

VIDEO

EQUIPMENT

If using your smartphone to film, put it in aeroplane mode to avoid ruining shots! If using a camera, still put your phone in aeroplane mode to avoid it ruining shots!

Use your rear camera rather than your front facing camera – it will likely be significantly better!

If you have no options for sourcing additional equipment, then household items and ingenuity can yield great results. A pile of books or a music stand and some sellotape can make a good stand-in for a tripod. White sheets and shower curtains are basically industry standard for softening light sources. As mentioned, fantastic results can be achieved with just regular household lamps, and smooth movement can be achieved utilising an array of inexpensive items.

If you would like to invest in some accessories that will elevate your video production (without buying a new camera) then there are a few avenues you could take. You could look at bolstering the quality of your light sources. More lamps or an LED panel would be great options. One of the cheapest and easiest upgrades with the potential to make a huge difference could be new bulbs for your existing lamps that are brighter/warmer/cooler than your current bulbs. You could buy a tripod or gorillapod to allow you flexibility in the positioning of your fixed shots. A lens that fits onto your phone camera isn't going to increase the quality of the image that your phone sensor can capture, but it might open up some interesting possibilities like an enhanced zoom or focal length, or a wider angle to allow you to capture more of a scene.

AUDIO

QUICK START GUIDE

- / The quality of a sound recording is not always about having the best equipment, but about being mindful of the space that you're recording in and where you place your microphone in relation to your source.
- / A little editing will go a long way. Familiarising yourself with the basics of or just experimenting with a free DAW like Garageband or Reaper (generous free trial) will pay huge dividends.
- / Make sure that the recording is clean by identifying and eliminating external noise (fans, electronics, open windows, flatmates, etc), putting your phone on aeroplane mode and using headphones if you need to do any monitoring.
- / Pay attention to the character of the room that you are recording in. Hard surfaces and small rooms will sound very different to soft furnishings and large rooms. Try it out!
- / Experiment with the placement of your microphone(s). Make sure you are capturing the best of the source and try to avoid placing it onto surfaces which may impart their own character onto the recording. It's usually good to have the microphone relatively close to and on axis with the source – but not so close that it distorts or sounds boomy! If recording a vocal source be mindful of overly prominent Ps, Bs, Ts or Ss.
- / Look at the settings of your software and increase recording quality as much as possible. Work in uncompressed formats like WAV or AIFF, not MP3!

AUDIO

EQUIPMENT

Some modern smartphones are surprisingly good when it comes to recording audio considering the size of the microphone, however any equipment that you can add to your arsenal will carry you a long way. Even if it's just with an inexpensive USB microphone plugged into your computer, or a couple of SM58s and a two channel audio interface, the increase in quality that you'll hear will be extreme. Something that you can do to increase your production quality free of charge is to install and get simply acquainted with a digital audio workstation (DAW) with which to process your audio after recording. Basic abilities here will pay huge dividends when it comes to your final audio. Simply being able to choose takes, set volume levels, apply EQ and a little reverb has the potential to transform your recordings. Reaper is a fully featured DAW on Windows and Mac that has a very generous free trial and is very affordable if you want to continue to use it past two months. Garageband is a free option for Mac that will suit most people's needs.

As mentioned in more detail below, recording anything that involves live monitoring requires head/earphones.

Multiple microphones (or multiple smartphones) to record the same source will allow greater flexibility, particularly when recording large instruments or multiple sources simultaneously.

ROOM

Whether recording with your smartphone or high end microphones, the character of the room that you are recording in has a huge part to play. All rooms have a character defined by their size, shape and contents which impart different tonal and temporal (reverb) characteristics onto a recording. Try recording yourself in different rooms to hear the difference. Louder sounds will emphasise the character of the room to a greater degree, and therefore a microphone placed closer to a source will have a greater source:room ratio in the recording. The best example of this is close-miked percussion versus percussion recorded away from the source in the room.

You can affect the character of the room by using materials and shapes that absorb or deflect sound waves of particular sizes. For example soft furnishings absorb small high frequency waves; and strategically placed bookshelves break up large, low frequency waves. Duvets hung over a door frame or a microphone stand are a great way to mitigate the room character and achieve a 'dead' recording which can be manipulated more freely in post production. However, a completely deadened room would sound unnatural in a visual scene where the audience is expecting some small natural reverb. Filming and recording dialogue in a room without any character for example would appear strange to the audience (even though they may not be able to put their finger on why).

AUDIO

ISOLATION

When recording, ensuring that your source is the only thing that you can hear is important (unless background noise is natural and desirable as in a street scene). This will keep the listener focussed on the subject and make post production far easier.

Any audio recording that is taking place where monitoring is necessary (playing to a click or along with other musicians for example) should be done with headphones at a modest level. Other sources of noise (fans, music in another room, open windows, boisterous housemates and sometimes lamps) should be identified and eliminated before recording. Sometimes background noise will only become apparent when levels are raised during post processing, so you'll appreciate any diligence here later on!

FORMATS AND QUALITY

Whatever you are using to record digitally, ensure that you are using high quality settings to do so. WAV and AIFF formats are uncompressed, which means that no data is lost in storage. MP3 is a heavily compressed format which makes it convenient to store but will drastically reduce the quality of your recordings.

Ideally you should maintain the highest possible (or practical) quality throughout your workflow even if the final format is compressed for convenience or delivery specifications. If possible, this means a minimum of 44.1kHz sample rate and 16-bit bit depth in WAV format (ideally higher!). The settings on your recording app (Bandlab, the stock iPhone app, or whichever app you choose will have quality options in the settings.

MIC POSITION

Finding the optimum position to record your source from is crucial to achieving the best quality sound. If you are able to enlist a helper to play/speak/create the sound that you are recording then you can identify the place where it sounds best in the room with a simple exercise: Face one ear towards your source and cover the far ear, then move through the space and listen closely for the most natural/enjoyable sound that doesn't highlight uncomfortable characteristics of the source or the room. You can then try to place your microphone/s in these position/s. If you're using phone(s) to record then tripods or mic/music stands and some tape can help you maneuver them into the optimum position. Placing microphones or smartphones on a surface to record (like a table or a shelf) is not ideal, as the surface will block sound coming from that direction and also add it's one resonance to the recording.

As a rule of thumb: increased distance from a source will increase room sound and decrease bass.

If recording a vocal source, be mindful of overly pronounced Ps, Bs, Ts or Ss in the recording. This can be combated with a tweak in mic position (increased distance, a slight off-axis angle) though this can reduce bass response undesirably. An alternative thing to experiment with is covering the microphone with a thin sock- though listen out for a muffled result. [This BBC video has some useful tips](#)

Of course, if recording whilst filming then you are limited by what you want to include in frame. Filming whilst miming to pre-recorded audio allows greater flexibility in this regard.