Basics of lighting

Introduction

Light is crucial for the quality of any film. That's why it's important to learn to use it in a way that suits the type of video you're making and achieves the effect you want.

In this chapter, you'll learn how to illuminate people and objects well, whether in a studio, on stage, or in the street.

Vision *in action*

Think about conditions on the set:
• Existing light sources (natural and artificial) and how the light could change during the shoot.
• Available space to set up lamps or reflectors, and existing electrical connections. Check the room beforehand if you can, or get a plan of the space.
• Existing lights: try to find out who controls them and whether they can give you access to power outlets.
• Background: find out what sort of background is available at the location, and decide if you need to design and bring an additional backdrop with you.
The type of lighting will depend on:
• the type of video – news / documentary or fiction
• any information about lighting in the script or storyboard (fiction genres)
Pack all the necessary lighting equipment:
• lamps and / or reflectors like white cardboard, white Styrofoam or aluminum foil glued onto cardboard
• cable reel
• light filter or sandwich paper to diffuse the light. Be careful about fire hazards.

Equipment and tools

The equipment you need for lighting depends on the light you want to create.

So-called available light is light provided by the sun, either outside or through the windows of a building. You can use white cardboard, white styrofoam or aluminium foil glued onto cardboard to reflect available light from any direction onto your subject.

You can create artificial light by using special film lights or a simple household lamp. A cable reel will give

you flexibility of where you can place the lights. You could attach light filters or sandwich paper with clothes-pegs or other clips to scatter the light, but be careful as this is a fire hazard. The reflectors described above can be useful here as well, especially if you don't have many lights.

You may also need a large piece of fabric attached to a wall or rack, to serve as a backdrop. If you plan to use this as a blue or green screen, then your backdrop will need to be the right shade of blue or green. Specialised stores will have stocks of these, or you might be able to find them in general shops selling fabric.

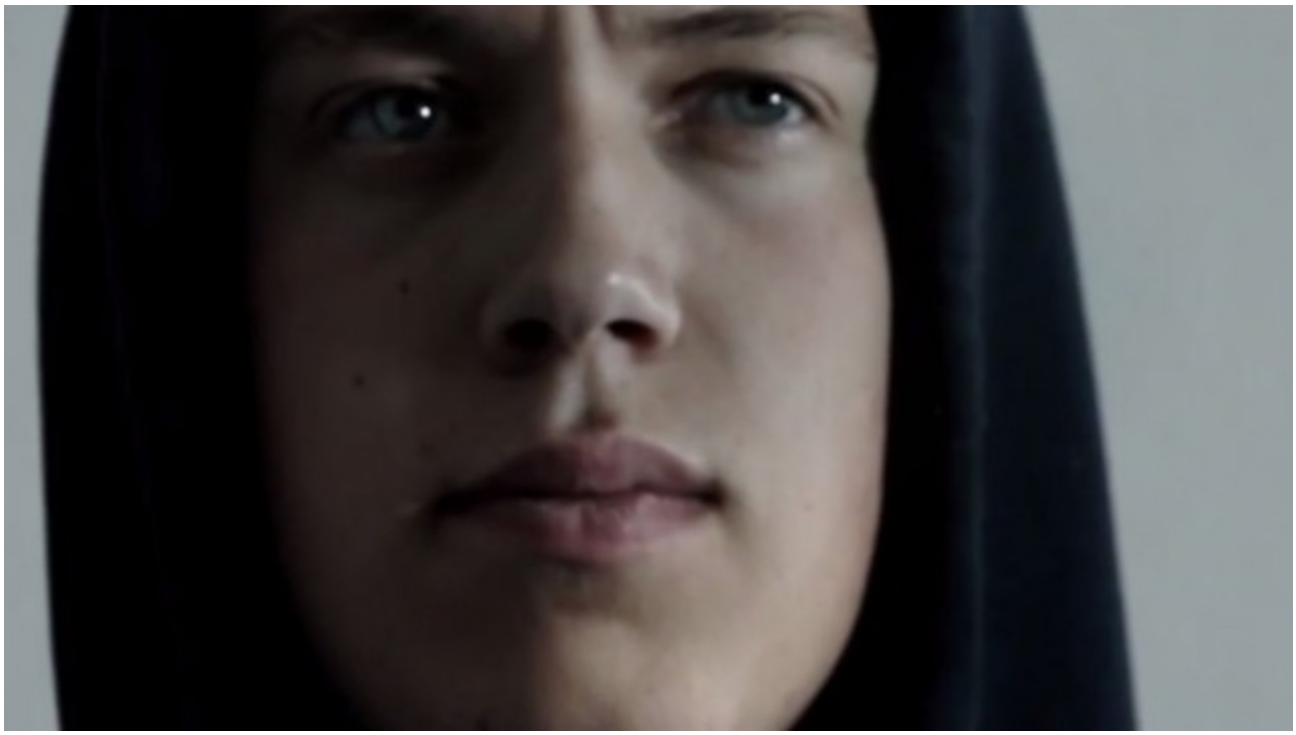
Main section

Good lighting is crucial in every video production. The type of lighting you use will depend on the type of video you want to make. In reports and documentaries, the focus is simply on ensuring that people and objects are well lit and visible. In fiction genres like feature films, music videos and cartoons, light also helps to achieve a particular mood or atmosphere. That's why lighting is a kind of art, and needs to be planned at the same time as writing your script and preparing your storyboard.

Using available light

If you're filming outside or in a space with sufficiently large windows, you should be able to manage without much or any additional lighting .

Check where the sun is and which window the light is coming in through. When the light comes from one side only, half of the actor's/interviewee's face will be brightly lit. This makes it appear 'plastic'.



Film still from KOMA, a short film by pupils at Burggymnasium Wettin, Germany: light from a window on the right makes the face appear plastic.

When the light source is located opposite the camera and illuminating the subject from behind, the result is often called backlighting. The subject appears too dark and its features are no longer clearly visible in the picture. You might of course want to achieve this effect deliberately and only show the silhouette of a person or an object.

> *If the camera crew and equipment are located between the light source and the subject, make sure they are not casting shadows in the picture – neither on the ground nor on the subject itself.*

> *The 'golden hour' is the hour after sunrise or before sunset when sunlight is very gentle and creates a warm atmosphere. It's often used by film-makers to take beautiful shots of landscapes or create a romantic mood.*

At other times, especially around noon, bright areas of the image may be overexposed by strong sunlight while shadows appear very dark.

> *Never point the camera directly at the sun as this may damage it. You can also serious hurt your eyes by looking at the sun through the viewfinder.*

Artificial lighting in a studio setting

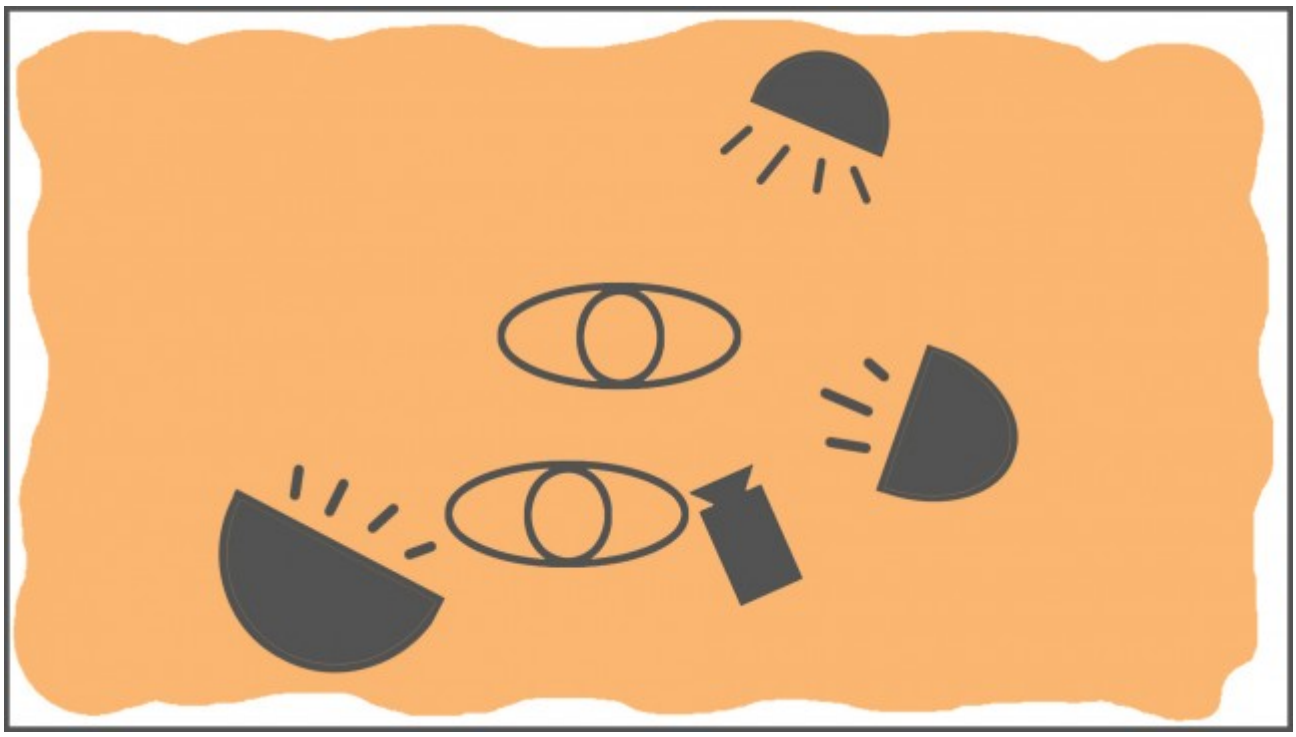
The so-called 3-point lighting is a good starting point for illuminating interviews, talk shows and other TV programmes filmed in a studio.



You can extend this to 4-point lighting by illuminating the studio background. This helps to set the illuminated person apart from the background. It's also a condition for the use of a green or blue box (see Producing TV news message and reportage for more detail).

Once you've set up your lights, play around with their strength and direction and with the reflectors to achieve the effect you want.

The typical 3-point set-up looks like this from above:



Typical 3-point lighting set-up with camera on the right and interviewer on the left.

Setting up 3- (or 4-point) lighting:

1. Find an appropriate position for the person in the room. They can stand or sit.
2. Find an appropriate camera position:
    - for a classic interview set-up, decide where the interviewee should appear – in the right or left half of the image. This will determine whether the interviewer should stand / sit left or right of the camera. You'll need to consider several factors: requirements of the script, the background (for example the presence of a striking object or building), and the 'best side' of the interviewee. The interviewer is never usually visible in this kind of set-up.
    - a news-reader presenting the news will be looking directly into the camera. He or she will be sitting/standing either in the centre of the picture or left / right according to the rule of thirds.
3. Angle the key light so that it illuminates the subject from above and from the front. In interviews, the key light stands on the side of the interviewer. After the key light is set up, you can influence its impact with professional diffusers – devices for spreading or scattering light – or, if you're using a household lamp, with sandwich paper and plastic filters. These will soften the light and help you avoid strong shadows.
4. Position a light or reflector on the other side of camera to brighten up the shadow that forms on the side of the interviewee or presenter that isn't illuminated by the key light. This should be placed a the subject's eye level and at a 70° angle to the key light, with 50% of the key light's brightness. With a reflector, the intensity of the key light is automatically reduced, because the reflection is never as strong as the light source itself. The face of the interviewee or presenter is now completely illuminated.
5. Position the back light approximately on the same axis as the key light. The back light illuminates the back of the subject's head at an angle and creates a slight glow around it. This improves the contrast between the head and the background, and increases the spatial depth.
6. You could direct a fourth light at the background. This will create balanced lighting over the whole set, which can be really helpful – for example in a studio, where it would seem odd for the main subject to be well lit but for the background to be dark. If you're using a blue or green backdrop with a green or blue screen in mind, the fourth light will help you to fade in a virtual background through so called 'keying' at

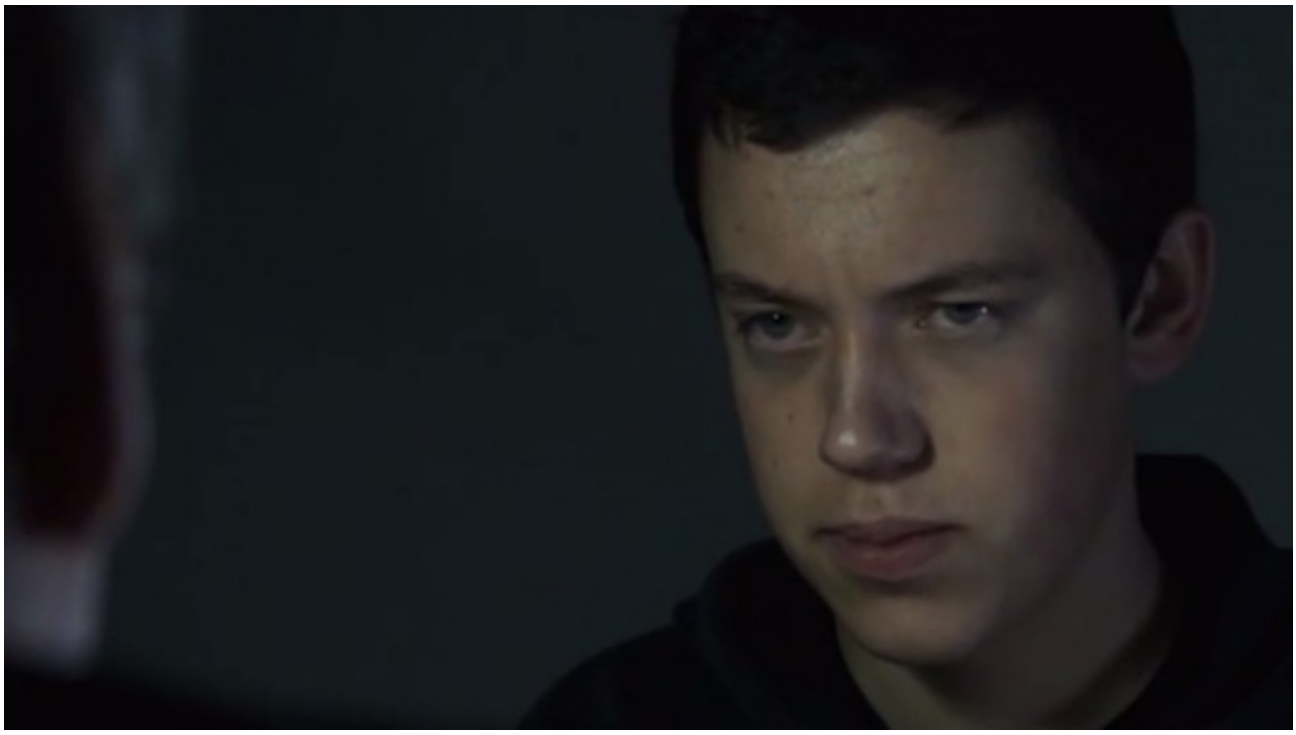
the editing stage.

Lighting for fiction genres

Light in feature films and other fiction genre needs to appear natural, or ‘native’, to the scene. The audience shouldn’t detect the additional lighting you’re using off-camera, whether the shoot takes place outdoors or indoors.

For example, you need to avoid the double shadow that can result from the 3- or 4-point setup. Using several lights and/or reflectors will help with this.

In fiction genres, light is usually directed in a way that creates a particular effect or mood. For example, if you illuminate the scene only slightly, you can create tension or a gloomy atmosphere. This is low-key lighting, typical for the ‘film noir’ and ‘neo noir’ genres.



Film still from KOMA: low-key lighting creates a gloomy mood.

With high-key lighting the scene is brightly lit, which in turn creates an uplifting mood.

The camera will usually focus on the film’s actors; their faces carry important visual information and are often what the audience concentrates on. That’s why illuminating faces is such a key part of film lighting. As with entire scenes, you can choose to light the actors’ faces very little or very brightly to emphasize different moods.



Film still from KOMA: the face is only slightly lit to create a frightening mood.



Film still from KOMA: the brightly lit faces emphasise a happy mood.

As with available light, artificial lighting from one side only can make faces appear ‘plastic’ (see the first image in the chapter).

Coloured light can also be used to create a specific mood.



Film still from KOMA: more magenta has been added to the shot in post-production for dramatic effect

Silhouettes of actors and props created with backlight can also be used creatively (see above).

Exercises

Using available light

1. Pick several outdoor and indoor locations, and try to use the available light effectively with the help of an actor or a prop.
2. Use a video or photo camera to film/take photos of different light conditions and evaluate them against the following criteria: sufficient brightness, how ‘plastic’ the subject appears, and impact on mood.

Artificial lighting in a studio setting

1. Find a space suitable for an interview or TV news-presenting, and illuminate it using the 3- or 4-point-lighting setup. Try to prevent shadows on the ground and background. Look out for ‘plastic’ illumination. If you don’t have enough space for a full-size set, build a miniature studio and test different lighting situations using toys and small lights.
2. Use a video or photo camera to film/take photos of the illuminated studio and evaluate the brightness, how ‘plastic’ people or toys seem, and check shadows.

Lighting for fiction genres

1. Create different moods by lighting full-size or miniature locations, or stop-motion animations. Note the mood created by illuminating the whole set and illuminating the actors or model figures. Try out different ways of influencing the atmosphere using light, as described in this chapter.

2. Use a video or photo camera to film/take photos of the different light conditions and evaluate them based on their brightness, proportion of light and dark areas, and how the light affects the mood.

Common mistakes

1. Not bringing lighting equipment because problems with available light weren't considered.
2. Poor lighting tolerated because you can see what is in the picture.
3. Lighting not taken into account fully or at all in the script and storyboard.
4. The subject is lit too little or too much.
5. Trusting the automatic brightness function of the camera – this can result in a very bright or a very dark image.
6. Reflections not considered – for example you can see a reflection of the film crew in the the picture.
7. The face of the person in the picture looks tense because the light is directly in their eyes.
8. The illuminated person starts to sweat and their forehead looks shiny.
9. Not taking into account the shadow cast by the illuminated person, film crew or other objects.

Related topics and links to external sources

Chapters: Composition and color / Producing TV news message or a reportage / Filming and editing a stage performance or a sports event

Golden Hour Calculator let´s you exactly calculate the time frame of the Golden Hour at a specific place.

Short film KOMA, made by pupils from the German secondary school Burggymnasium Wettin (WTV production in German – see credits in the YouTube description)

Methodology

It's a good idea to practise lighting first without the pressure of having to produce something, but this can soon become boring for young people. Start planning a real production as soon as possible, and the necessary skills for lighting will develop in the process of filming.

Terminology

studio, film format, reflector, light source, light filter, diffusor, back light, Golden Hour, green screen, blue screen, background, 3- or 4-poin-lighting, key light, brightening light, highlight, Film noir, neo noir