

SHAW ACADEMY
NOTES

Diploma in Video



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Lesson 3

Aperture & Lenses

Lens types: its very important to know what lenses are available to us and how we might use them.

Angle of view: Extremely important to know what different angles of view each lens has, this helps us to visually plan out our shots and see the world through what the lens sees.

What is aperture: So last week we looked at shutter speed, this week we are going to learn all about aperture and how it works and the effect it has on light coming into the camera.

Depth of Field: Lastly we will then we will look at understanding DOF and how to use it creatively.

Lens Types:

So let's look at lenses and understand how they work.

First let's have a look at lenses that are available to us. Depends on camera (may not have the ability to change lens)

So there are many options available and a big variety of lenses.

2 main types:

1. Prime (Fixed Focal Length)
2. Zoom (Variable Focal Length)

(Under these zoom and fixed lenses there are then different types for lots of different scenes and for different effects. Bear in mind that these lenses are available as both fixed and zoom options and this is where some people can become confused.)

- Fisheye
- Super wide
- Wide
- General
- Telephoto
- Macro

Field of View:

Different lenses have different angles of view. Understanding the angle of view will allow you to make a better decision on what lens will suit your scene.

The lower the Focal mm (millimetre), the wider the lens is. So at 10 mm you are looking at fisheye, which is a 180-degree field of view.

As the focal length increases, the width or the angle of view becomes less. AS you get closer, you see less on the edges.

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What is Focal Length?

- Focal length simply refers to how much the lens can see.
- **A lower focal length** will mean a **wider shot**. A **longer focal length** will mean that a closer or **more zoomed in shot**.

What focal length is actual referring to is the distance from where the image is sharp in the lens in relation to the cameras sensor.

What lens should I use?

(here are some pros and cons)

Prime Lens:

Pro's	Con's
Easier to focus	Can be expensive
Wide apertures	<u>Limited range</u>
Better image quality	

Zoom Lenses

Pro's	Con's
Very versatile	Poorer quality
More affordable	Difficult to focus while filming (when zooming)
	When zoom aperture closes

What is Aperture?

An Aperture is a mechanism in the lens that controls the volume of light in the scene.

Aperture has 2 functions:

1. Volume of light
2. Depth of field

The aperture is the function of the lens, not the camera.

- It can be very wide (letting in a lot of light)
- It can also be small/tight (restricting light in)
- The aperture works like the IRIS in our eyes.
- When more light is needed the pupil expands
- When less is needed it contracts to restrict light

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f1.4 | f2.8 | f4 | f5.6 | f8 | f11 | f16 | f22

Let me start by saying that these are common apertures and are 1 stop apart from each other.

A stop with an aperture is known as an f-stop. This is a measurement of light.

There are more apertures in between each of these, these are 1/3rds of stops. But lets get familiar with the common stops for the moment.

IMPORTANT TO NOTE:

Aperture:

- The smaller the number = the bigger the aperture
- The higher the number = the smaller the aperture

Examples:



Notice how a small portion of the image is in focus.

This would be known as a **shallow depth of field**

Would be an aperture of about f2.8



Notice everything is sharp and in focus

This would be known as tight or **deep depth of field**

Aperture of about f22

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Using Aperture:

Using shallow depth of field creatively:

- Setting mood
- Directing the viewers focus
- Highlighting a point of interest, you may want the audience to see
- You can hide objects also

Shallow DOF means that you can focus the attention on a particular area in a scene.

This is very useful for close ups and making sure that nothing in the back ground breaks viewers' attention.

Using deep/wide depth of field creatively:

- Sense of scale
- Establishing shots

This will keep everything sharp and is useful for giving a sense of scale to scenes.

Focus Tips:

When to use Auto Focus?

- Helps with tricky shots
- When panning & titling
- Running & Gunning
- Helps to initially set focus

Zoom in & Focus on the eyes

Monitors & LCD screens are great for checking focus.

Focus Assist/Peaking:

- Focus Peaking is a mode you can turn on in your camera settings, where the camera will highlight the area of the scene that is in focus whilst your filming. This can be great and very helpful for faced paced action.

For any of you Youtubers out there, which I know I have a few.

A lot of the times you might be shooting yourself.

A tip to get great focus every time is:

- to position something where your eyes are
- Focus on the object
- Switch to manual focus (so when you enter the scene the camera doesn't rea-just)

There's nothing worse than doing an entire video and realising the focus isn't sharp

Thank you



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