Stop Motion Animation Workshop 3
Animating!

What you need:
A camera.

Animation App or Software.

A tabletop tripod with an attachment for a mobile device or some other way of fixing the camera in place.

A well-lit space to work in, preferably with a wall behind and a power outlet to keep your device charged or if you need to use a lamp for light

Sticky tack & sticky tape

ANIMEX

This is a typical set up, the background is fixed in place using sticky tack, here a webcam is attached to a clamp with a tripod screw fitting. The webcam is connected to a computer.

Here is another set up this time using a mobile phone held on Gorilla Pod (a tripod with bendy legs) with a mobile device attachment. Attachments like this are very cheap and come in different sizes depending on your device, make sure you get the right size.
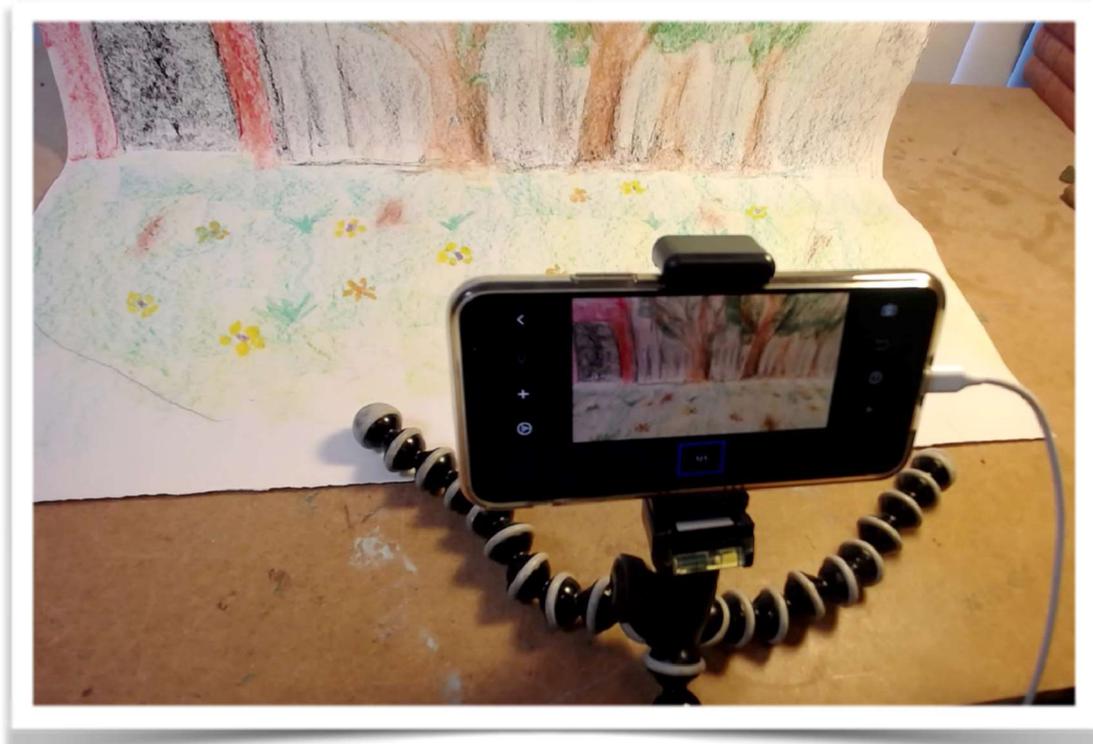
IMPORTANT! Always use your cameras or devices in LANDSCAPE!

Sticky tape the tripod in place to stop it moving while you are animating.

Lighting

A quick note about lighting your scene – I use an Angle Poise type desk lamps or natural indoor light, as well as some professional lighting – some animation software will also allow you to adjust exposure when capturing images. It's not a good idea to animate using the light of the sun, because over time the sun moves and that will show up quite clearly in your animation, try to use indoor natural lighting or lamps.

Animation Apps & Software

In this workshop I'm going to use an app on my phone/tablet called Stop Motion Studio Pro.
This program is available on all major formats – Apple, Windows, iOS and Android. It's quite cheap, about £5 for the mobile version, and about £10 for the computer version. There is also a free version of this software, which has certain limitations, but you can do basic animating.

There are other programs available also – they can also be free or paid for but note that generally with free programs they are usually taster versions of paid for apps and will be restricted in some way either with a watermark or be time limited or even frame count limited.

Other animation apps include:

- iStop Motion – Mac
- I Can Animate! – Mac & Windows, Android and iOS
- QStop Motion – Windows
- Monkey Jam - Windows
- Stop Motion Animator - Windows
- iMotion – Mac
- Stop Animator – IOS
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I'm using a paid version of Stop Motion Studio Pro, that gives me some additional tools within the app to make animating a little easier such as control over frame rates, exposure, white balance and onion skinning – I'll touch on these as I explain the process of animating.

Animating

In all animation you build up the film frame by frame, usually I work at 12 frames a second, sometimes this is referred to as 12fps or animating on 2s.

In the professional animation world they generally work at 24 frames a second.

While making animation we must think about how long it takes a character or a thing to move and we break that down into seconds and frames.

Example

If your character was waving and saying hello that might take 3 seconds in real time, if you were animating that you would need to take 36 pictures (3 seconds x 12 frames per second) of your character moving its arm changing it just a little bit each time.

Try to time out your actions in seconds then multiply that by 12 that will tell you how many pictures to take.

Get someone to time you doing the actions yourself that will help.

You also have to be aware of how much to move frame to frame, the bigger the change you make in each picture you take the faster the action will be when you play it back in real time.

Only make small changes frame to frame unless of course you want it to play back fast – be aware though if the animation runs too fast you may lose your audience, as they won't understand what is going because it's too quick to follow – generally only make small changes every frame.

To help you understand how many frames you need in your animation you should refer back to your story - try to time the actions and any speech in seconds and with a little bit of simple maths you can work out how many pictures you need to take:

(SECONDS) X 12 = HOW MANY PICTURES YOU NEED TO TAKE

Time in Seconds x 12 = Number of Frames
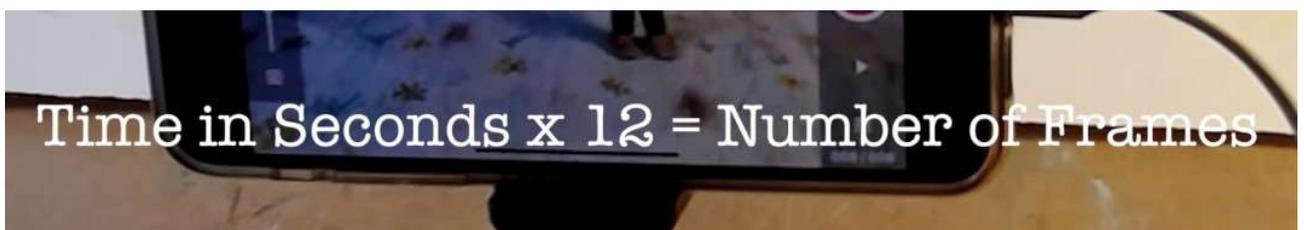
In the animation industry the timings for each of their scenes will generally come from the sound production stage in conjunction with a storyboard.

The actors will record their dialogue and this will be edited together along with images from a storyboard in something called a leica reel or an animatic, this is then used to help with the timing and will inform the animators how many frames they have to create the actions needed.

Now we aren't doing, that we are going to be adding sound after we have animated so we need to roughly time how long it takes to do our actions in seconds then multiply that by 12 and that will tell you how many pictures to take for each of your scenes and still have the sound reasonably match up to the animation.

There is nothing stopping you creating the sound first and timing exactly how many pictures to take for each of your scenes.

The reason I'm using Stop Motion Studio Pro is mainly because it is a cross platform program, that is it's the same on mobile devices both Apple and Android as it is on Windows and Mac computers, with only a few differences in layout. So, it's a good bit of kit to do these workshops with!

Most animation apps though will be quite similar; in that they take pictures in a sequence and will export them as a video.

How To Use Stop Motion Studio Pro

Tap on the Stop Motion icon, the purple square with a white camera inside, to start the app.
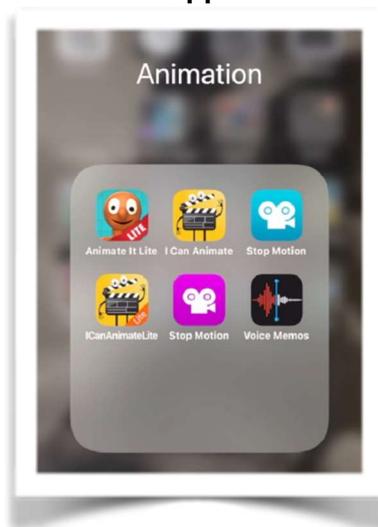
Now you're faced with this screen where all your projects will be shown, you can share your films from this screen, but we'll look at that later when you've made an animation.
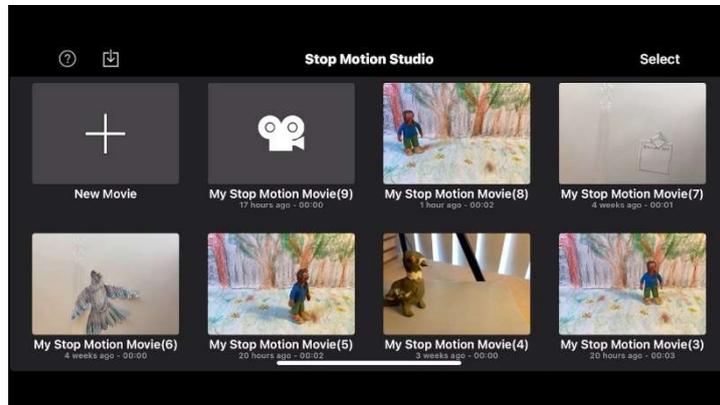
Tap on the big + icon with the name NEW MOVIE to begin a new project.

The next screen displays what the camera currently sees in the main section and has some other icons around it.
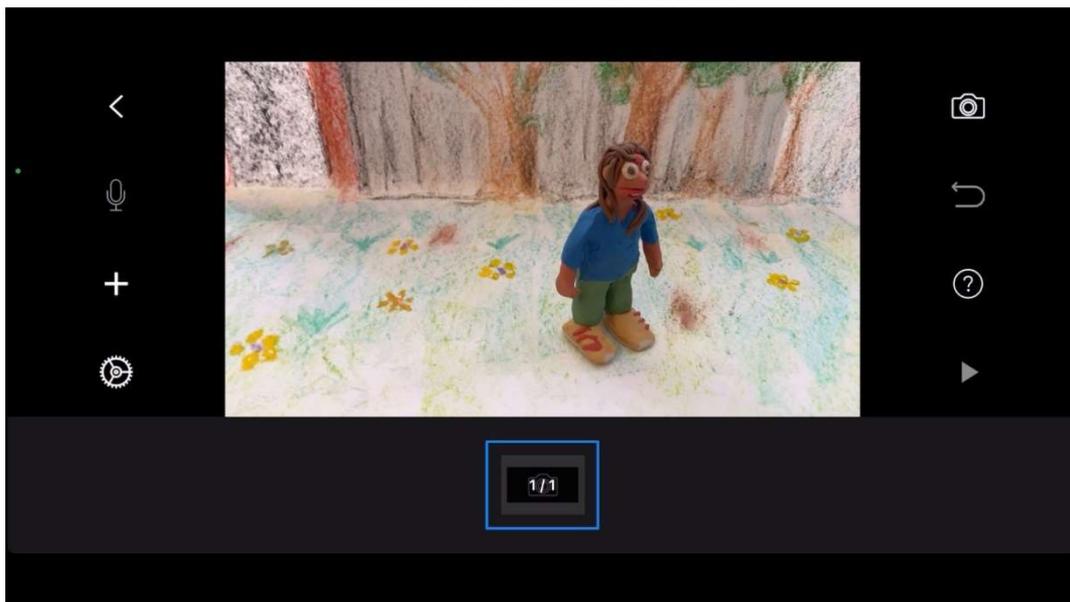
On the left you have a back arrow that takes you back to the previous screen. The microphone icon is where you can add sound to frames, it will be greyed out at the moment because we haven't created any animation yet. We'll add sound later.

The + sign allows you to:

• **Add still images from your photos.**
• **Add title and credits from some templates included in the program.**
• **Add an audio file that you could pre-record.**
• **Add a clip generally another video or animation clip - essentially a basic editor.**
• **Add a file from the cloud or elsewhere.**
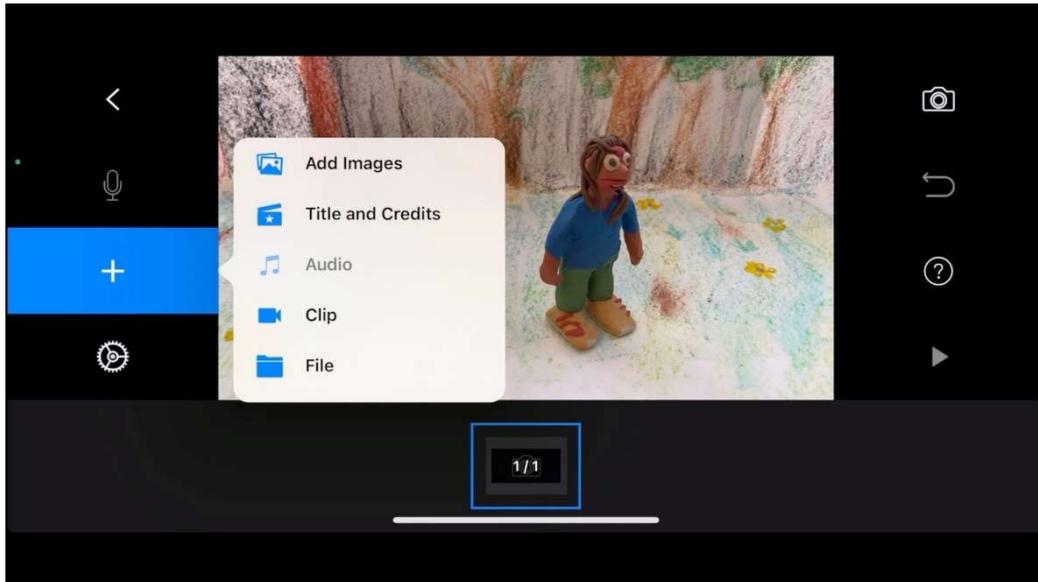
The gear icon gives us access to some more settings these ones are quite important to set before we take any pictures.
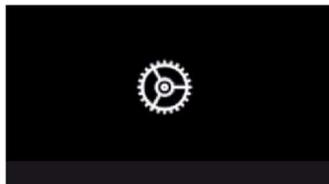
The first option has a speed dial icon and the slider controls how many frames a second our animation uses we want to set this to 12.
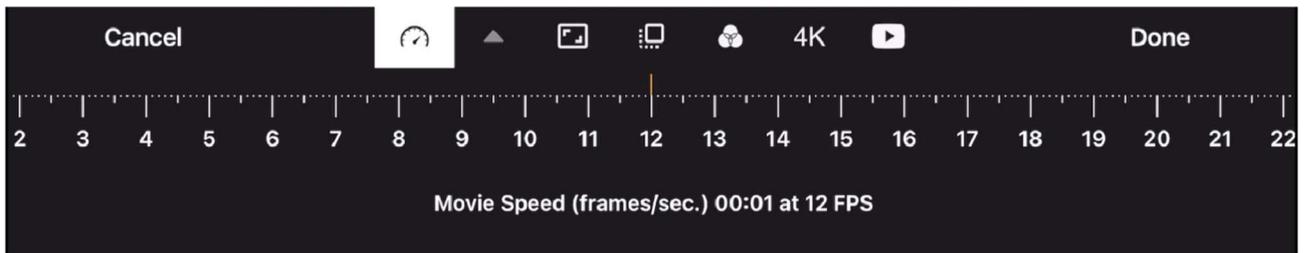
The triangle icon can add a fade in or out or between clips.
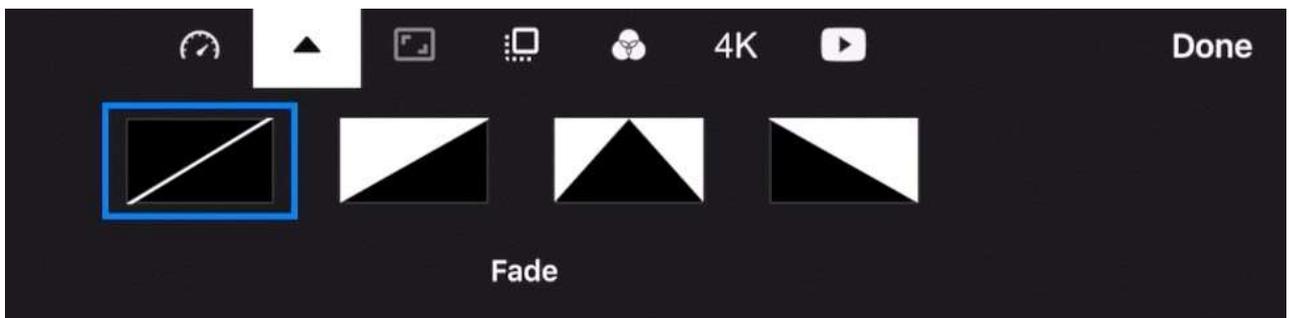
The next icon controls the aspect ratio or the shape of our screen we'll leave this at the default 16:9.

Default (16:9)
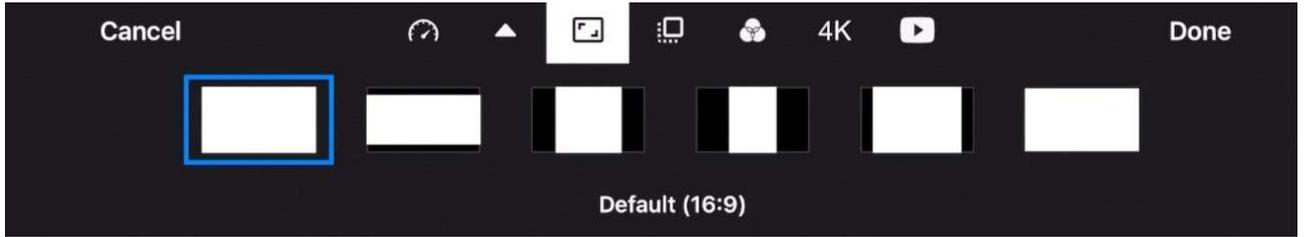
The next icon adds a foreground and you can import your own images here but note any images you do import will have to have a transparent part to them to work.

Foreground
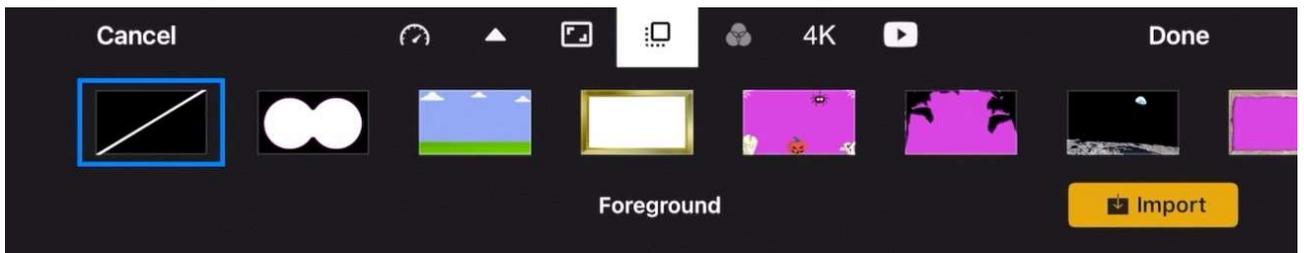
The next icon adjusts the overall colour of your animation.

Filter
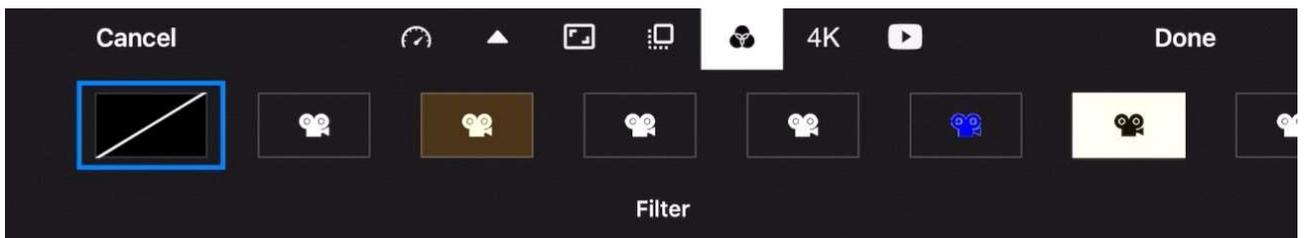
The next icon is important, 4K allows you to adjust the quality of the animation you produce the higher the quality the bigger the file though so be careful not to choose the highest quality especially if your device is already full of pictures and videos and apps you may run out of space very quickly.
Choose HD or HQ.

SD   HD   HQ   4K

Full HD Quality
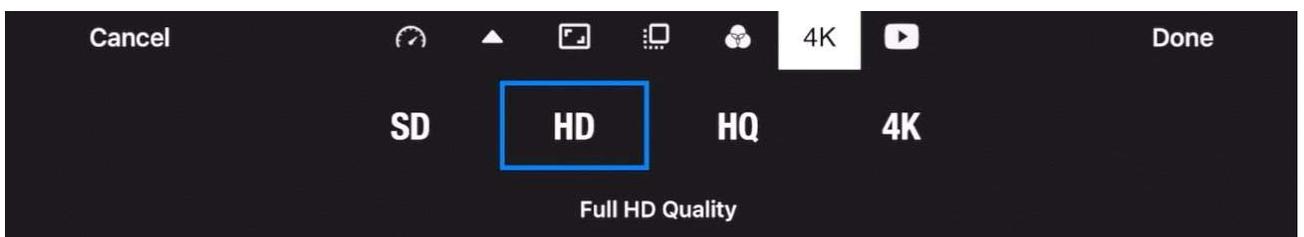
The next icon determines the playback options to watch through once, play the last few frames or loop playback, include the live feed or add a 3 second pause after playing.
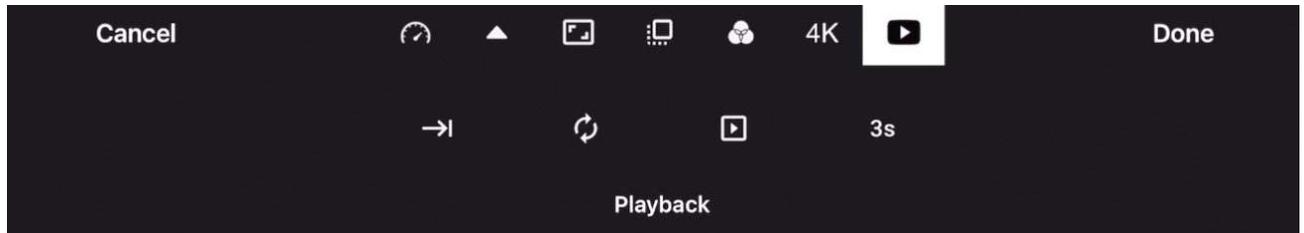
On the other side of the screen, tapping on the camera icon takes us to the next screen where we add frames, more in a moment.
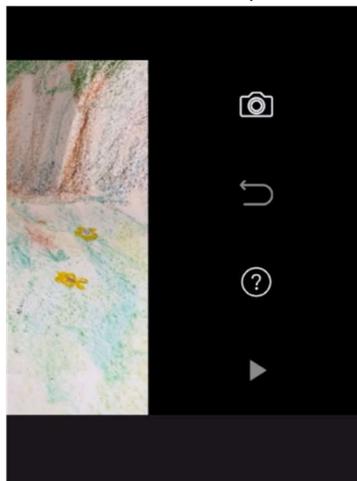
Under the Camera icon is the Undo add frame icon.
The '?' will tell you what the icons do.

There is also a play button at the bottom right.

To start taking pictures we select the camera icon.
In this screen we again see what the camera sees in the main centre window and there
are some more icons around the edges.

On the right hand side we have a back arrow to take us to the previous screen.
The clock icon sets a timer to automatically take pictures at an interval we can set –
this is great for time lapse animations.
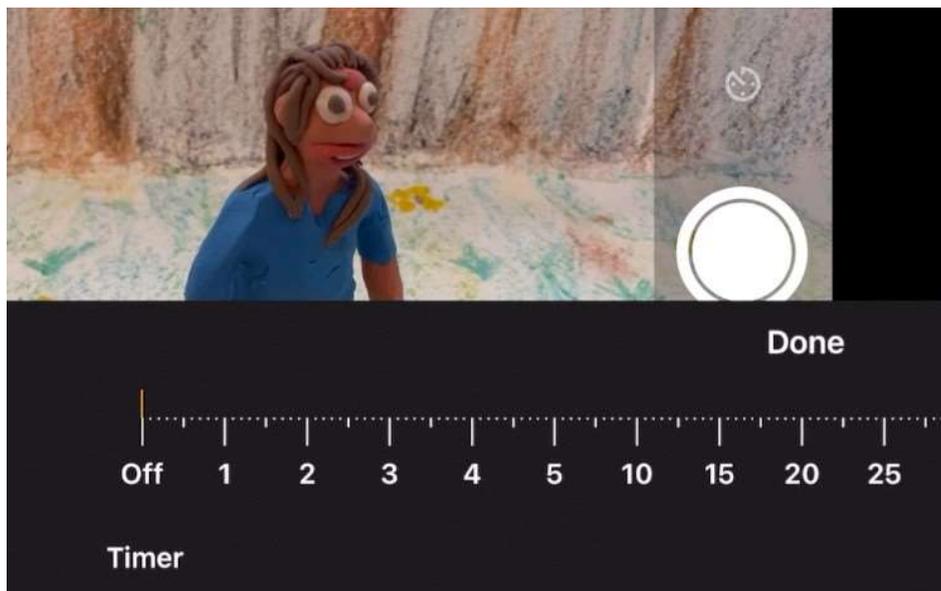
The big red button will take a picture.

The play button underneath will play our animation!

The settings icon will offer up some more options that we can change which we should do now.

There are several sub-options:

Camera – allows you to select which camera on your device is used, front or back, green screen or a remote camera.
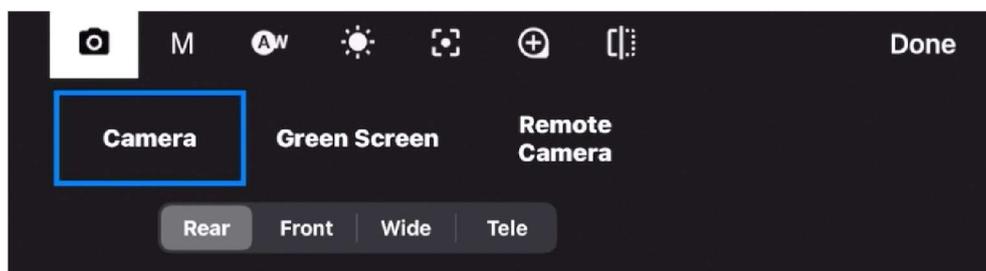
M – allows you to control focus and exposure, the options are:
• Auto – which will adjust focus and exposure for every picture you take – this may cause your finished animation to look like it is flickering.
• AL lock focus & exposure – you tap on the AL to set both and fix them so they will always be the same.
• P – you tap on the P to set focus which locks it in but allows you to manually adjust the exposure using a slide adjuster.
• M gives you manual control of both focus and exposure using a slide adjuster.
I would choose AL or P - this should stop the light and focus changing while you are animating which would make your film look like its flickering.
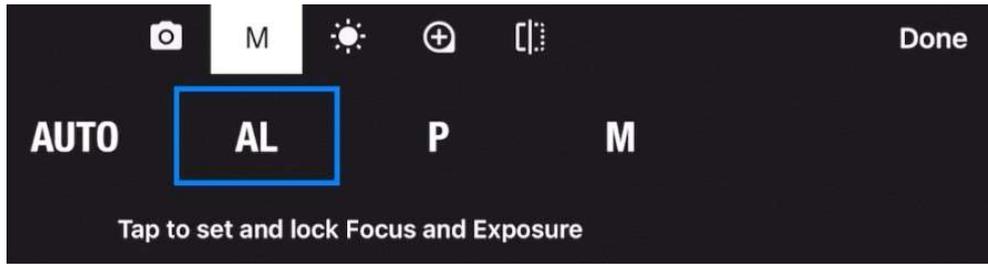
Next option along is Zoom – it depends on the quality of the lenses on your device but zooming will tend to lower the quality of the image captured – much better to actually move the camera closer.
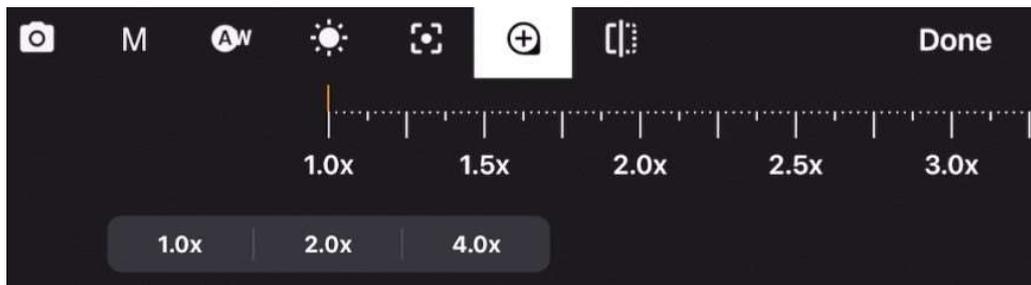
IF YOU ARE USING THE GREEN SCREEN OPTION

There will be an additional box with a + in it to adjust how strongly the green is keyed out.
The next icon along lets you choose the image you replace the green with and here you can import your own images.
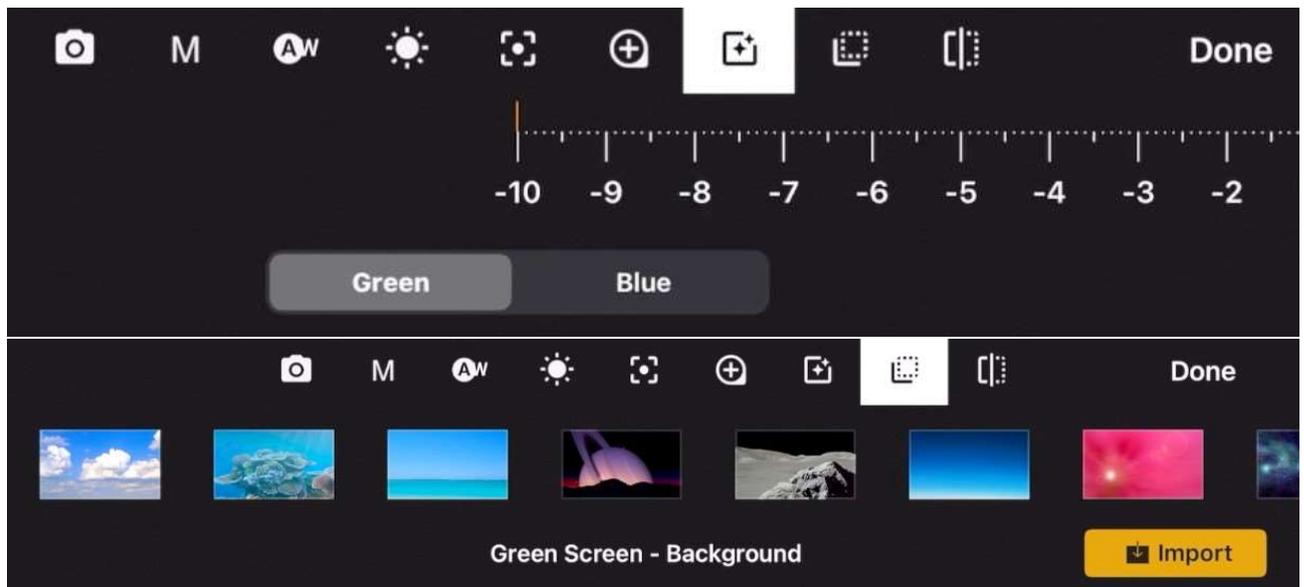
The next option along allows you to rotate or flip your views, handy if your set up means your camera is in an awkward position.
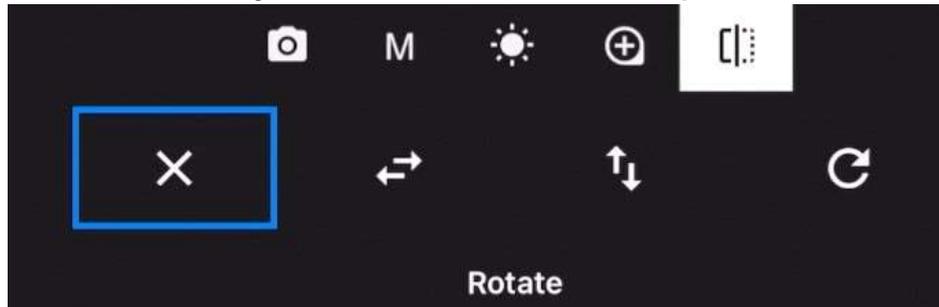
Finally on the right side of the screen at the bottom are some numbers that show how many frames are in our animation and what frame we are at within the animation.

Here I am at frame position 5 out of a total 5 frames.

On the left-hand side is our 'onion skinning' slider this allows you to see as you are animating how much something has been moved – it shows you the image you have just taken and the next (live) image you are about to take. This is a great way to judge how much to move compared to the last picture you took. Now is a good point to remind you:

DON'T MOVE THINGS TOO MUCH!

Otherwise when you playback the animation it'll be too quick and the audience may not know what is happening. Small changes will result in smoother animation.

At the top tapping on the small number in a box selects how many pictures we can see in onion skinning, the default is 1 but you can select up to 5 images to see at once, that can sometimes be quite confusing, but it can also reveal the line of action for your movements, but it is aimed more at professional animators.

The grid icon at the bottom places a grid guide on the screen to help line animation up.

Now you should have a basic knowledge of all the settings in Stop Motion Pro but the best way to learn about it is to have a go.

Try all the settings out on your own animation so you get used to what they do.

OK! Now you are ready to START TAKING PICTURES!

Adding Sound In Stop Motion Studio Pro

Go to the project window.
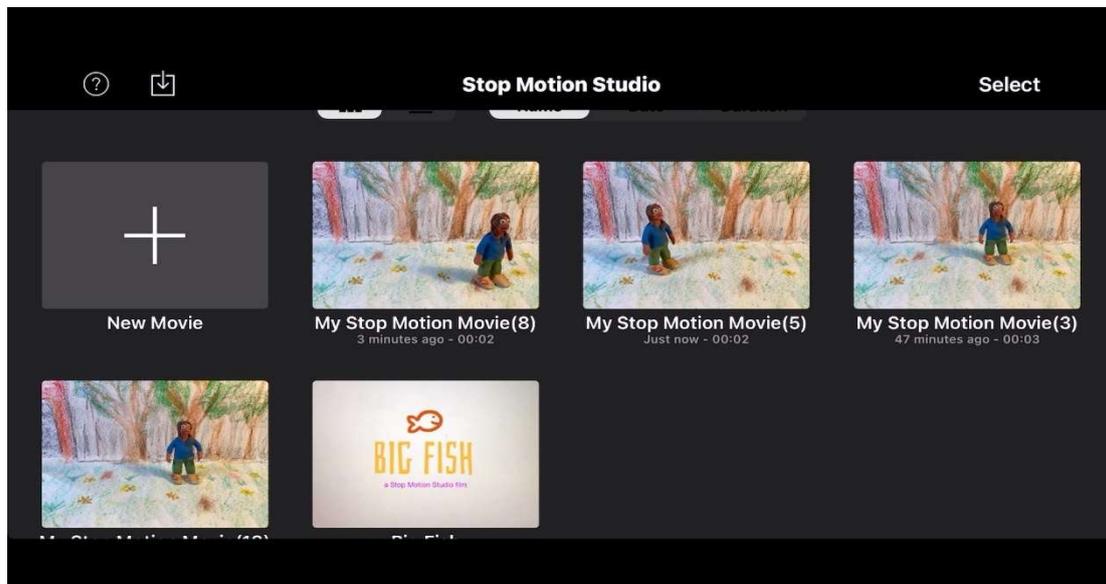
Select your project and in the next window you'll see along with your animation the frames in your animation along the bottom on what we call the timeline.
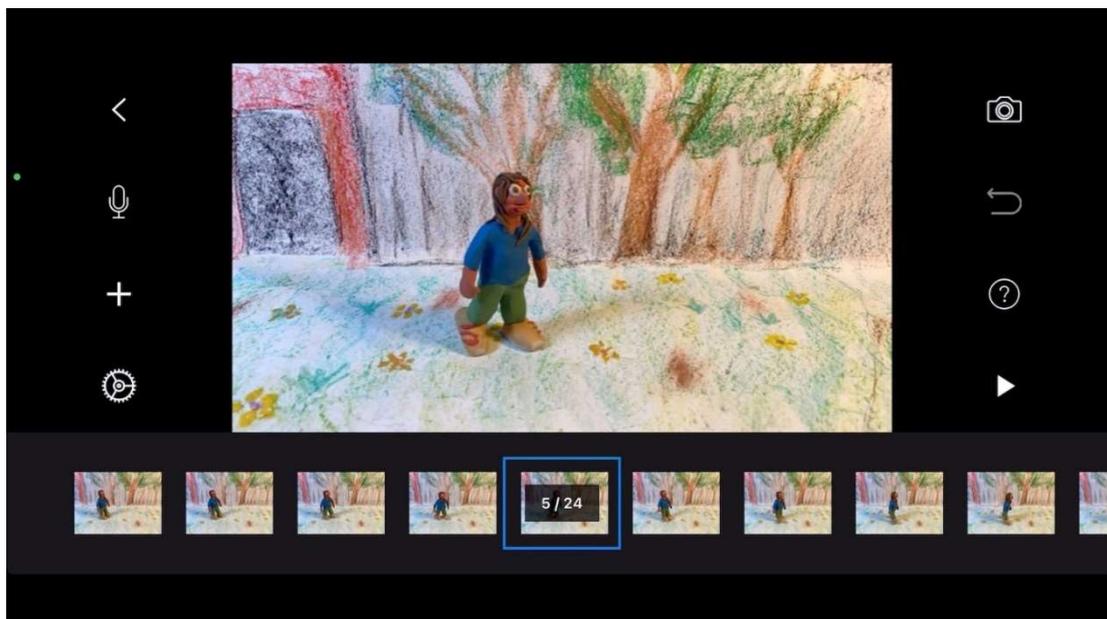
Choose a frame for your sound to start on.

To record your sound direct into the app tap on the Microphone icon.

A Record button will pop up. Tap on Record.
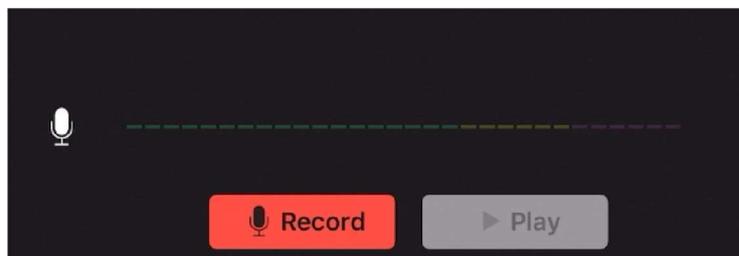
You'll get a 3 second countdown and then you make your sound, pay attention to the volume meter so that you don't make your sound too loud - if you do it will sound distorted, try to keep the recording level in the green as you record.
When you've finished tap on stop.
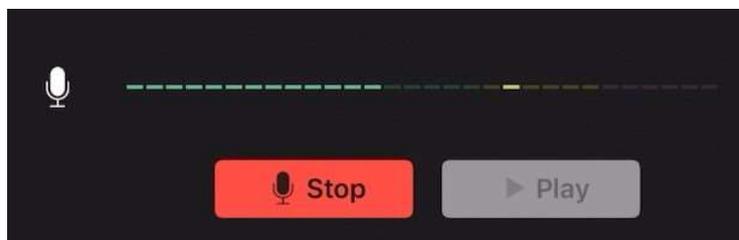
You can play back your recording to make sure it's okay by pressing on the Play button.

When you've finished recording select Done.

You'll notice now that your selected frame on the timeline has a blue note icon to show it has sound attached to it - you can only have one sound attached to one frame - if you want sounds to overlap put it on the next frame along.

When you play the animation to check the sound you'll notice the sound waveform is now visible along the timeline.

In the above example I can see the sound waveform doesn't start in the right place - that is an easy fix. Tap on the frame with the sound attached and this opens up a new menu.

Select Audio.
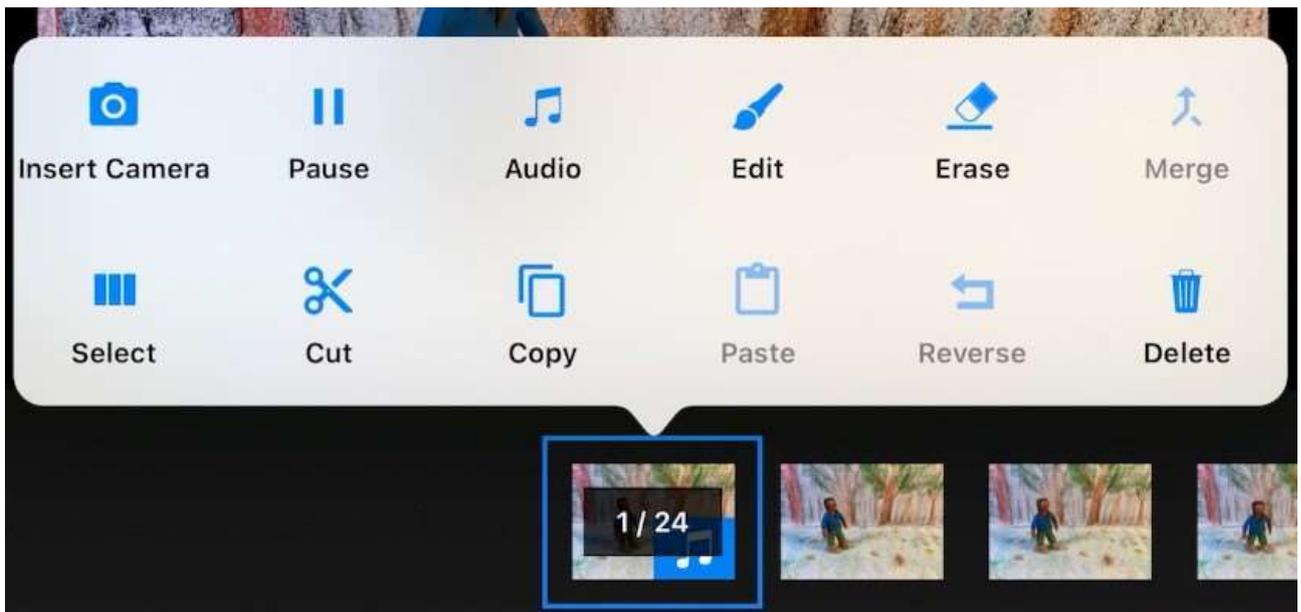
That will open up the audio editing window.

Here you can drag the sliders at the beginning or end of the audio to trim off the bits you don't need.
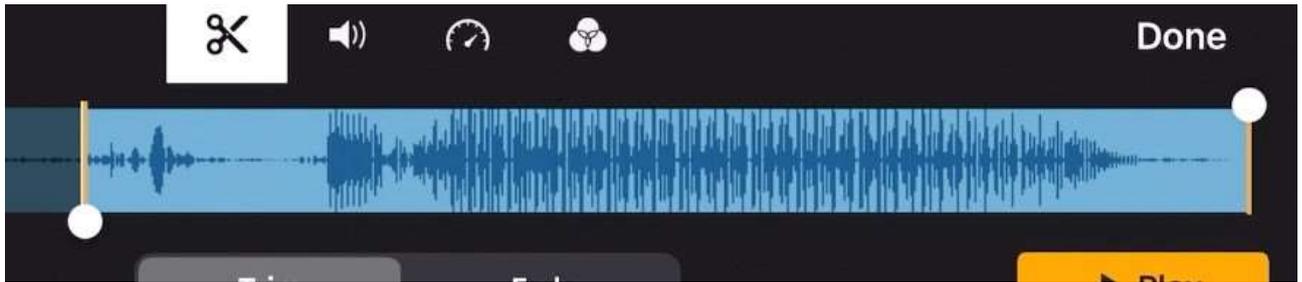
Select Done when you've finished trimming the sound and it will take you back to the previous window with the timeline.

We can now see the waveform starts on the frame we attached it to.

To add pre-recorded sounds select another frame on the timeline where you want the sound to start, then on the left of the screen select the + icon under the microphone icon and choose Audio.
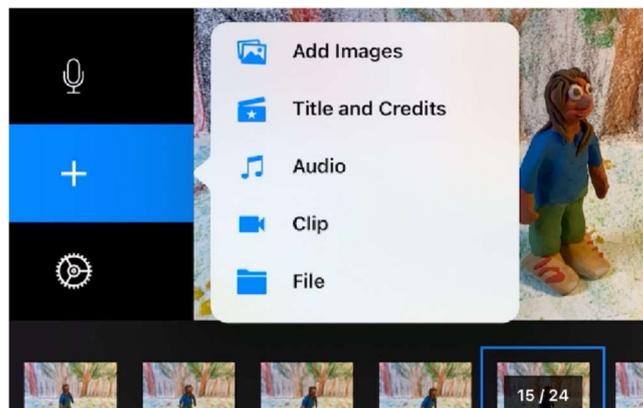
This opens up another window where we can pick a sound from various places:
• Recordings - your own recordings stored on your device.
• Theme Music - some mood tunes that come with the App.
• Sound Effects - some noises that also come with the App.
• Shared - audio stored in your shared areas such as the cloud.
• Library - any music or sounds stored on your device - be aware of the rules for using copyrighted music.

Theme Music		Cancel
▶ Bushwick Tarantella		1:20
▶ Cheery Monday		1:20
▶ Clenched Teeth		1:31
▶ Comfortable Mystery		1:15
▶ Dark Star		0:54
▶ Easy Lemon		0:31
▶ Evening Melodrama		0:40

🎤 Recordings 🎵 **Theme Music** ⭐ Sound Effects ☁ Shared 🎶 Library

You can preview the sounds by tapping on the play buttons next to each. Choosing a sound title will place that sound on the timeline and you can edit that sound as you did before.

You can also fade sounds in or out and this is particularly useful if a sound starts or ends in a way you don't want to hear, it may click or sound distorted or it may be too abrupt. Select the frame with the sound you want to adjust on the timeline, choose Audio and then select the Fade button, the sliders now adjust the length of fade in and out.
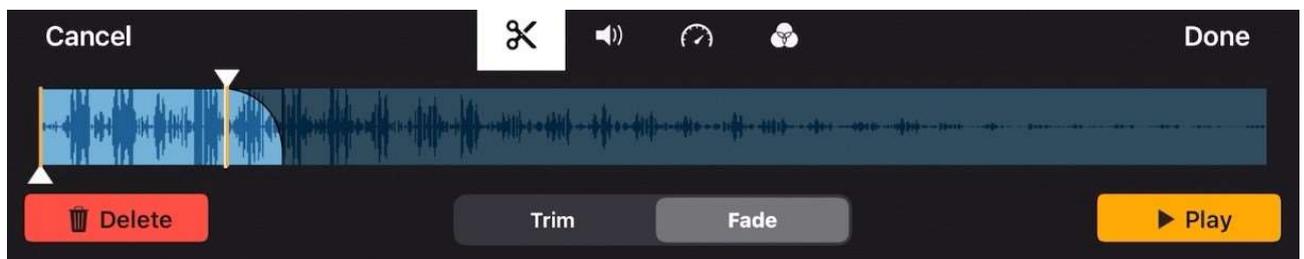
Sharing Your Animation

In the project window tap on Select in the upper right corner.
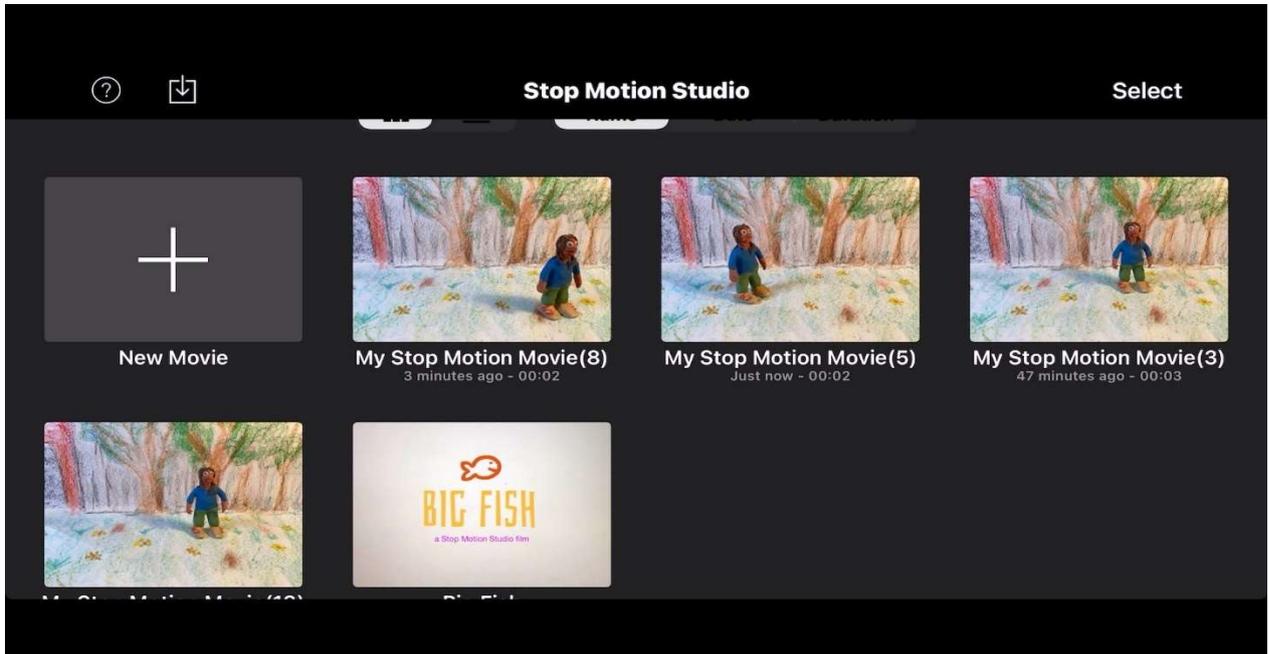
Tap on the project you want to export or share.
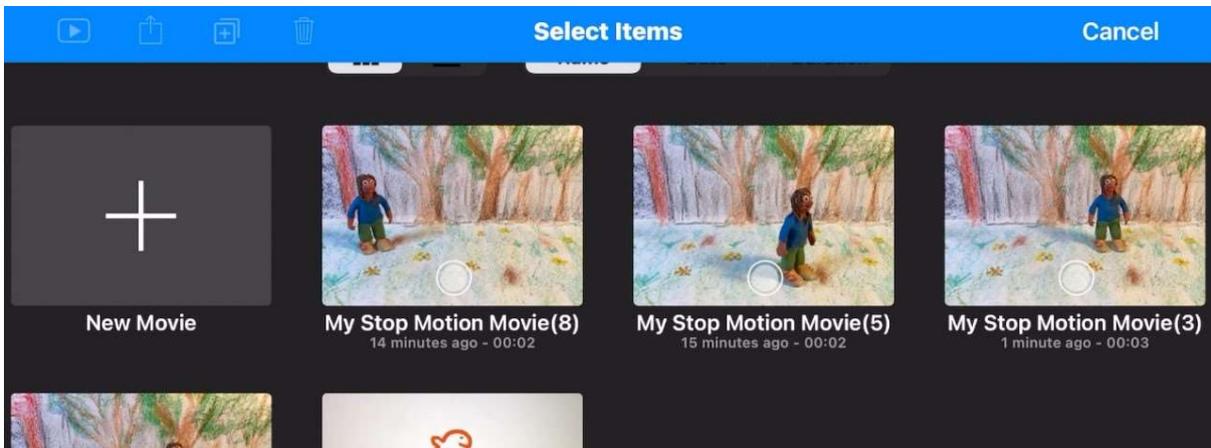
The selected project will now have a blue tick.
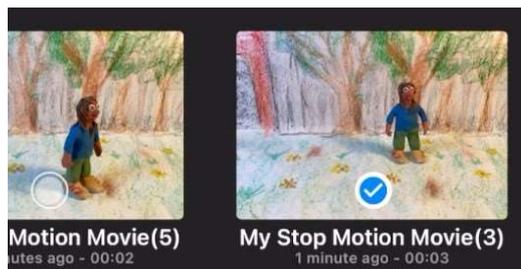
In the upper left corner tap on the share icon - a box with an arrow pointing up. Now a small menu appears with some options to share:

• **Export Movie**
• **Animated GIF**
•
• **All Images** - will export the frames of your animation as individual pictures.
• **Flipbook** - will export as a PDF which you can print to then make a flip book.
• **Project** - will save the project for use on another device with Stop Motion Studio Pro.
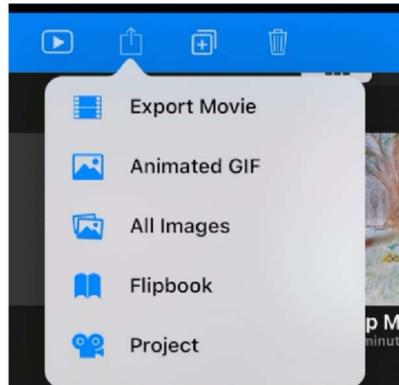
In the next pop up on an iPhone you get the standard share options to choose where to share. Save Video will put the exported video file into the device's Photo Album.

You can also share direct to YouTube, Vimeo or your social media accounts. The video file will be exported using the settings you chose at the start, in our case that was as a High Definition 1920 x 1080 12fps video file.
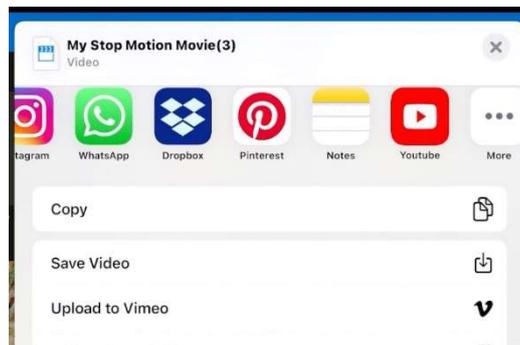
Now you should be able to confidently animate your film and once you're ready head to the next Animex Academy Workshop where you will edit the final stop motion animation you've made ready for its grand premiere!