

**I CAN
ANIMATE**

**ANIMATION
FOR ALL**
CREATE & SHARE

Stop
Motion
Animation

Introduction

Forward by David Bunting

"When I first started animating aged 9, I used a Super8 cine camera and needed to wait about three weeks for the film to be processed before I could see the work of my endeavours. It was costly and if I made a mistake I had to film the shot again. Back then, with hardly any book on the subject, animation seemed, to an inquisitive child like me, shrouded in mystery inside the vaults of the magic studios of Hollywood. How times have changed.

Now, with I Can Animate and a webcam, a bedroom, school or youth group can be transformed into a studio where you can make your own animated films and watch the results instantaneously - and then publish online for the world to see!

I Can Animate opens up the door to animation as a creative tool for learning like never before. Animation really is movie magic at its most spellbinding, unleashing imagination and creativity. In fact, it is probably one of the first cultural experiences most children have. My school teachers saw the potential that animation had to engage me with the wider curriculum.

Now as an animator, I've visited schools around the country and seen first hand the transformations it can have on children's learning. You are never too young or old to have a go at animation. Boy, I've even worked with nursery pupils who have created amazing animations by drawing in the sandpit. It is the ultimate creative tool, capable of making lessons unforgettable, blending art and science with cutting edge technology powerful enough for your imagination to know no bounds, yet simple enough for a young child to easily use. I Can Animate lets you get hands on all sorts of animation techniques, using kinaesthetic skills for learning. Be it a time-lapse capturing the opening of a daffodil or a movie masterpiece to celebrate at school or a young people's film festival, I Can Animate lets everyone discover one of the great modern art forms of the world."

[David Bunting](#)

Animator, educator, & filmmaker

Profile



David Bunting's feature film credits include Thunderbirds and Disney's "The Tigger Movie". David trained in feature film storyboarding at Aardman Animations before storyboarding on Shaun the Sheep. In 2008 he co-produced the multi award winning

["The Astronomers Sun."](#)

David regularly gives talks on animation and is committed to furthering the advancement of animation as a creative educational tool. His education programmes have been acclaimed as models of good practice. Many children's films supervised by David have won international awards and have been screened at the world's largest animation festivals.

I Can Animate has become one of the most widely used stop frame animation programs in education and has a huge following amongst amateur enthusiasts.

I Can Animate 2 has a wealth of fantastic features that allow animators of all ages and levels of expertise, to create professional looking animated films.

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I Can Animate 2 Manual – Written by Roger M Young MSc, Cert Ed.

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Version 2.4 Mac OS X



System Requirements

To run version 2.4.0 or later, a Macintosh computer running Mac OS X 10.8, or later.

7 MB of free hard disc space to install to and a minimum of 2 GB of memory.


Installation & Registration

- Internet download, run the installer and follow the onscreen prompts.
- A filer window will open, run the I Can Animate 2 installer package and follow the on screen instructions.
- Once installation is complete, run the I Can Animate 2 application from your Applications folder.
- **Click on the I Can Animate 2 menu at the top of the screen and from the list that appears, select Register now...**
- Enter your details and the serial number which can be found on the licence card included in the software pack or that has been eMailed to you.
- Enter your details and the serial number which can be found on the licence card included in the software pack or that has been eMailed to you.
- I Can Animate 2 will run for a trial period of 7 days after which you will need to enter a valid serial number to continue to use it. You can enter your serial number at any time.
- To keep you up to date with developments and to help with technical support, please register your product online at;

http://www.kudlian.net/Kudlian_Software/Registerproduct.html



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I Want to Create...

When you start to animate it is very easy to get carried away, trying to do too much. Professional animation studios such as the world famous Aardman Animation™, work on the premise that a days shooting might result in a second and a half of screen time! Fortunately you probably won't have all the constraints that they do, but you do need to remember that for each second of animation you wish to shoot, you are going to need to capture 12 frames at the default settings (15 fps for NTSC).

Careful planning and preparation will result in much more professional looking films, more enjoyment and ultimately cut down on the time it takes to create your animated movie.

Step 1 - The Story

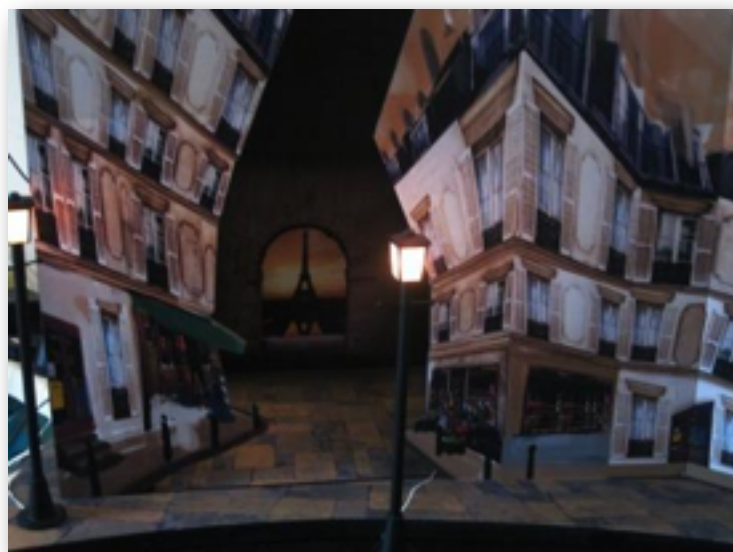
Having a great story is one thing, having a great story that you can animate is another. Be realistic about what you can create in the time you have available. TV adverts last twenty or thirty seconds, but in that time can tell a life story, if they are planned correctly.

Write down the basic details about your story and then expand it into a script that you will work to. You can include additional information such as how many characters it contains but don't have cast of thousands. Detail where the action will take place, etc.

Step 2 - Creating the characters

You can have great fun getting into the personality of your characters, professional animators do it all the time! Don't just think about what your characters are going to look like, but consider where they live, who their families are, do they have any friends, what do they like doing, what don't they like, what are their favourite foods, hobbies and so on.

A [character sheet](#) is a good idea. We've supplied one at the end of this manual that you can print out and use. This sheet is only a guide, you can make your own and ask different questions if you like. Now you are ready to make your characters from whatever materials you have decided. Modelling clay and building bricks are not the only materials you can use! You can animate almost anything.



Step 3 - Storyboard

This is basically a sequence of sketches. It doesn't need to be a work of art, stick figures and line drawings will suffice. It can be annotated with explanations of what is going on and the resources, sounds, and type of shots that are required. [Storyboard templates](#) and other resources sheets can be found in the [Appendix](#) at the end of this guide and downloaded from the [I Can Animate](#) website.

Step 4 - Be Prepared

Get everything ready before you start capturing frames. Build your set, download or create your sound files, and if you are using them, make sure you have lights and that you have ironed and secured the chroma key screen!

Make sure everyone knows what they are doing.

Step 5 - Camera

I Can Animate 2 requires a camera that is plugged into either the USB or Firewire port on your computer. If you are using an older firewire camera then you may need to purchase additional hardware for your computer.

Camcorders connecting through the USB port are unlikely to work as they do not support a live feed, unless they are webcam enabled. Please check with your camera supplier for specifications.

If drivers are included with your camera you will need to ensure that they are installed to your computer and are up to date, but try to find one where drivers are not required.

Webcams are relatively inexpensive but the quality of the images produced by cameras can vary considerably. There are a number of high definition (HD) webcams now available and these are ideal for use with I Can Animate as they produce very high quality images. It is also a good idea to think about how you will mount your camera as many webcams are supplied with only a monitor/screen clip and have no tripod mounting point.

You'll need to position the camera so that it is not easily moved. This is really important when capturing a series of frames as you do not want to have to keep resetting the camera. We would advise that you use a tripod to mount the camera. A small table tripod will be quite adequate and a tripod will also give you more flexibility when positioning the camera.

Step 6 - Lights, camera action...

We know you are itching to make an animation so without further ado, here is a guide to creating your first, potentially award winning, animation.

Good luck, and have fun.

[A Quick Start Guide](#) can be found in the Appendix, you may print this sheet out.

Getting Started

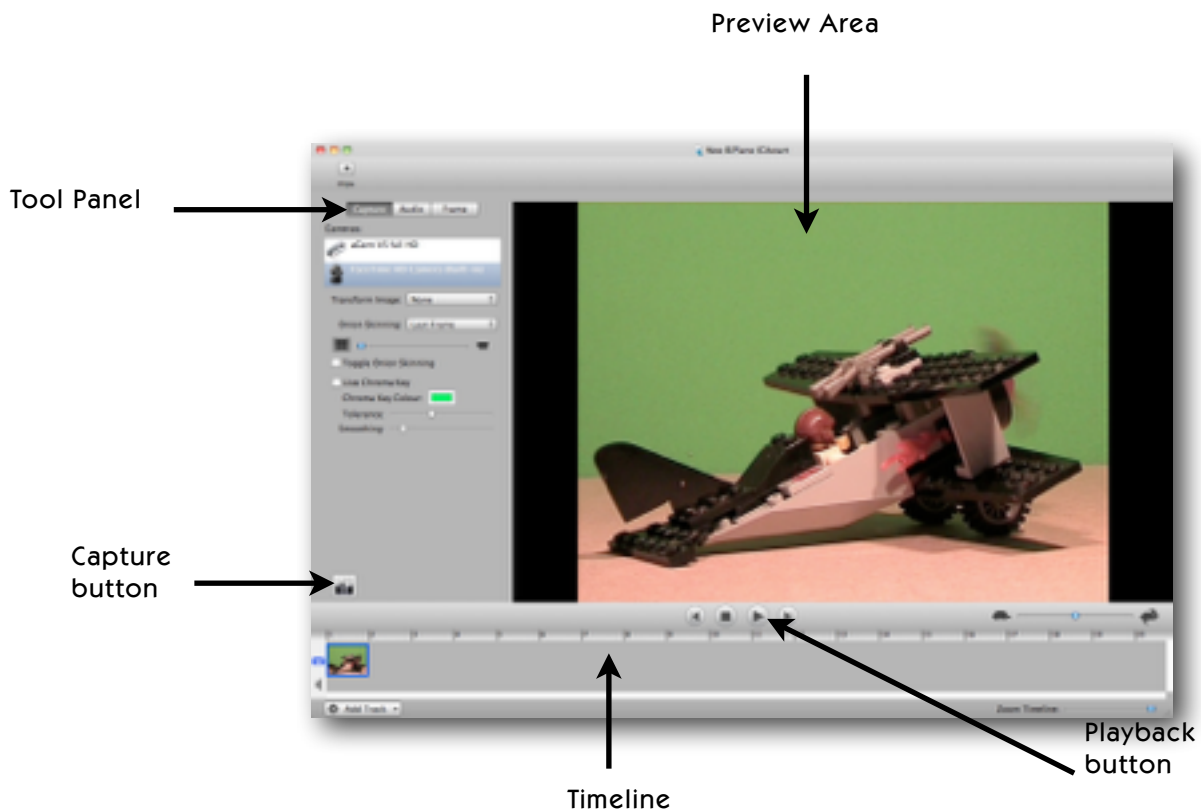
Lets show you how easy it is to animate with I Can Animate.

☐ HINT - Where you see this symbol, hints and tips will be offered.

Once you have installed the I Can Animate software and plugged in a [suitable camera](#), you are nearly ready. The only other thing that you will need is an object to animate.

☐ HINT - It is a good idea before running I Can Animate you plug your camera into the computer and, if necessary, switch the camera on.

- 1) Launch I Can Animate from the Applications folder in the normal way for your computer.
- 2) The first time you run I Can Animate it will automatically default to the Capture screen.



[The preview window](#) shows exactly what your camera is pointing at.

The Preview Area - displays your animation. If you are in Capture mode, it will display what your camera is currently pointing at.

The Timeline - is at the bottom of the window. Each time you capture an image it will appear in the timeline as a thumbnail picture. This allows you to quickly ensure that you have not inadvertently captured your hand in a shot in your eagerness to create your masterpiece and if you have, you can delete the frame by clicking on it in the timeline and pressing the delete or backspace key on the keyboard. Then just take the picture again. The timeline can contain different types of tracks but to start with there is only a capture track and an audio track.



Capture track, denoted by a camera symbol.



Audio track, denoted by a speaker symbol.

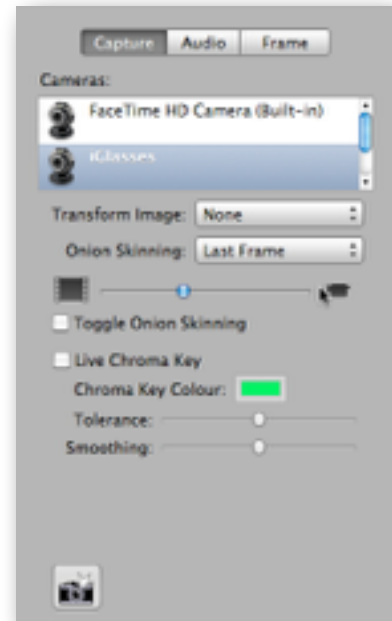
Tool Panel - Down the left hand side of the window is the 'tool panel'. The tools available will vary depending on which mode you are in.

You can select to edit different tracks from the buttons at the top of the tool panel. By default they are Capture, Audio and Frame. These are all dealt with individually later in this guide.

In the Capture window the options are;

- **Cameras**, the name of the camera or cameras plugged into the computer, you can select one of these for the live feed,
- **Transform image**, the orientation of the image e.g. No rotation, Flip Horizontal, Flip Vertical or Rotate 180 degrees,
- [Onion Skinning](#). You can apply this on up to four frames.

More options are available but for the time being let's concentrate on getting your animation started. You can find details of the additional options later.



Back to the animating....

- 3) Click on the Capture button to capture a frame. You will hear the sound of a camera shutter closing as the picture is captured. This sound can be turned off in [Capture Preferences](#).



- Hint - We would suggest you take a twelve identical shots to start your opening sequence. You can use the number keys on the keyboard to quickly take multiples of shots, you've already taken one shot so pressing 9 followed by 2 will give you your total of twelve frames. These will all appear in the timeline.
- 4) Next move the character you are animating. Only a very small movement is required. The amount you need to move to create a realistic action comes with practice. To get this correct, animators use a technique called [onion skinning](#) to ensure that they get just the right amount of movement in between each frame. Click the link for more information on [onion skinning](#). Once you have moved your character take another frame using either the capture button or the number key 1 on the keyboard.

[Onion skinning](#) is turned on by default, using the last captured frame. If you watch the preview window whilst you move your object or character, you will see a ghosting effect. The preview window is displaying the frame that you have just taken and overlaying what the camera is seeing.

- 5) Move the character again, taking care not to knock either the camera or your character, and take another frame. Repeat this procedure until you have captured about thirty frames.
- 6) You can now review your animation;



Click on the Select the first frame button to take you to the first of your captured frames.



Click the Play button. The sequence will playback.



Your animation will be played in the preview area.

At the default settings you need to capture 12.5 frames (15 for NTSC) for one second of animation. With thirty frames, you have less than three seconds ($30/12.5=2.4$) of playback so don't blink, it is going to be quick!



HINT - If you look at the tab that is selected you may see it is now set to Frame. To capture more frames you will need to reselect the Capture tab.

Now capture the rest of your frames.



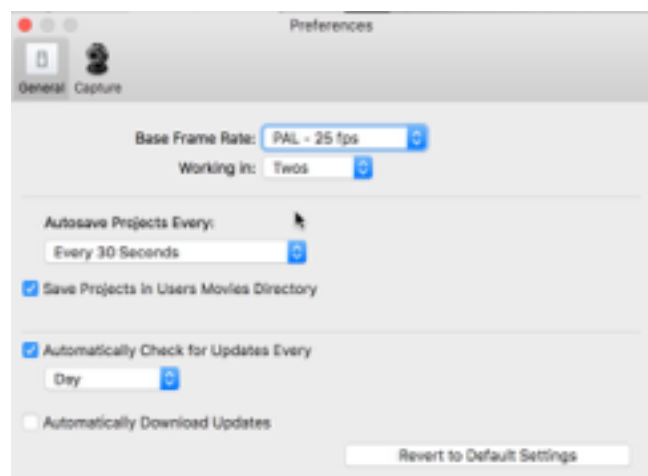
HINT - At the end of a sequence of movement add in a 'pause' of 6 or 8 frames before continuing with the next movement. Your animation will then look more realistic when you play it back. To finish your animated sequence take 12 identical frames.

Well done, you have now created your first animation.

Saving

You do not need to worry about saving your project as I Can Animate has automatically saving it every 30 seconds, whilst you have been animating. This means that you should never loose any of your animations again. The animations are stored in your 'I Can Animate' folder located by default, in the Movies folder on your computer.

You are advised to leave to Save Projects folder at the default location.



My Projects

Each animation you create is stored as an I Can Animate 2 project. To access your projects you will need to click on the button in the top left hand corner of the I Can Animate Window.

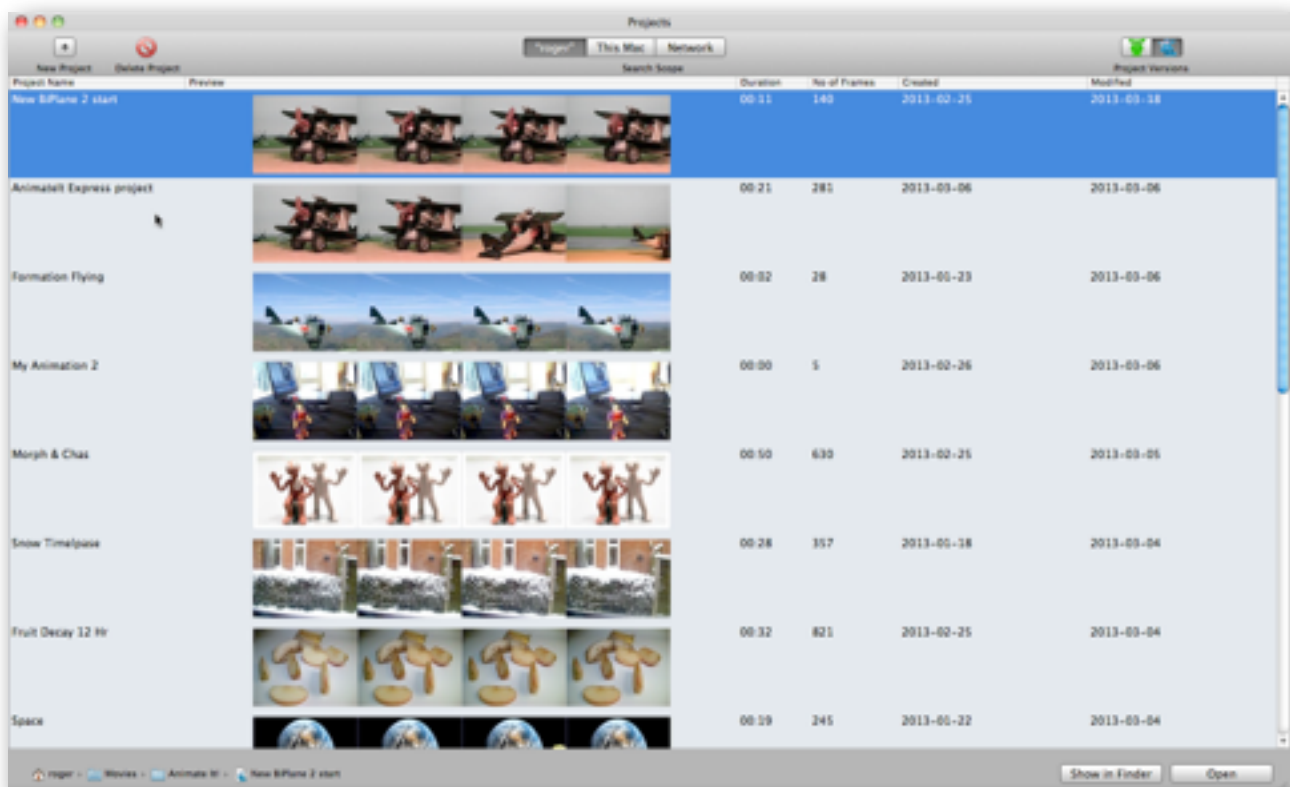
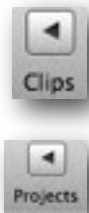
Navigating by this button is hierarchical and the label will change depending on which screen you are currently on.

It is important to remember that;

Projects are made up of **Clips** and **Clips** contain **Frames**

Projects ----Clips----Frames

- If you are on the Capture screen then the button will be labelled Clips and if you are in the Clips view it will be labelled Projects.
- If you are in the Projects view then these buttons are not present.



Projects are listed in the main window and can be ordered by clicking on the column titles. Each project will be given a 'default name' when it is created i.e. My Animation1, My Animation 2 and so on.

You can change the project name to be more meaningful by selecting the project name, and entering a new one.

Information about the project is also listed to the right of the key frames. This is currently the number of frames in your animation, duration and the date that it was created and last modified.

New Project

To create a new project;

You need to be in the Projects screen.



Click on the New Project button.



A new project will automatically be created and you will be taken straight to the capture screen to begin animating. Should you wish to change the name of your project, just return to the Projects window.

The new project will be the first in the list.



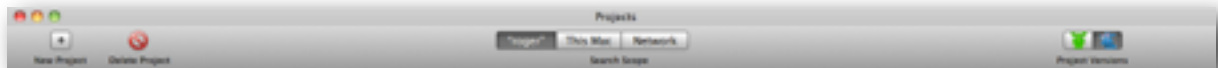
HINT - When naming your projects, try to make the name you use meaningful. No two projects can have the same name.

Finding, Importing and Sharing Projects

You can import and share projects with other I Can Animate users, including Windows PC and I Can Animate iOS users.

I Can Animate 2 on the Mac is able to automatically find and list projects in your user area on the computer you are working on and, if you are connected to a network, any drive that is shared. Both I Can Animate 2 and I Can Animate projects are displayed.

Finding Projects - In the Projects view there are three buttons at the top of the window. From left to right they are;



“User” - Your user name, scans for projects in your user area.

This Mac - scans for all projects on the local computer

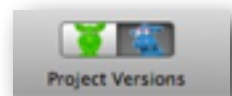
Network - scans for projects on shared drives on the network

In addition you can select the version number of project files to search. In the illustration to the right, the search will be on I Can Animate 2 projects.

Selecting the I Can Animate 1 file icon will search for those projects instead.

Projects created using early version of I Can Animate may display with only the file icon instead of a key frame, see below. Once the project has been imported, then a key frame

will be allocated and displayed.



I Can Animate 1




I Can Animate 2




Animate It!

Importing - I Can Animate 1 & 2 projects on other shared drives can be imported directly into your 'local' projects folder. Select the project to import and the Import button becomes active in the bottom right hand corner of the window.

 **Technical** - Projects can be found in ~/Movies/I Can Animate 2/

Project Sharing - Projects can be shared with other I Can Animate 2 users.

 Note, if a project you are trying to share has a background movie track or sound files associated with it, these maybe 'lost'. I Can Animate will do its best to display the movie files and use the sound files, but they may not appear in the project. If this happens you will have to find a compatible movie or sound format for the operating system you are using. There are some websites where you can convert your movies to a suitable format free of charge.

To share a project you first need to locate the file. At the bottom of the Projects window the path to your selected project is shown.

 Click **Show in Finder**, to automatically open the folder in which the project is located.



To make your project available to other Mac users, copy it to a shared location, this might be a shared folder on your machine, network, or a USB pen drive etc. When they launch I Can Animate 2, they can use the **Search Scope** to find and import the project.

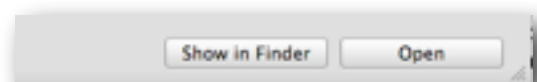
To make the project available to Windows users, copy the project to a portable drive or shared area, and then rename it adding the suffix, **.icananimate2**.

Copy it into the My Documents/I Can Animate 2 projects folder on the Windows computer.

Open a Project

Any project that appears in the list of projects can be opened and edited.

Select the project you wish to open and then click on the Open project button alternatively, you can double click on the project itself.



If the project contains more than one clip, you will be taken to the Clips window. In this window you can add more clips as well as previewing the clips and the overall project.

Rename

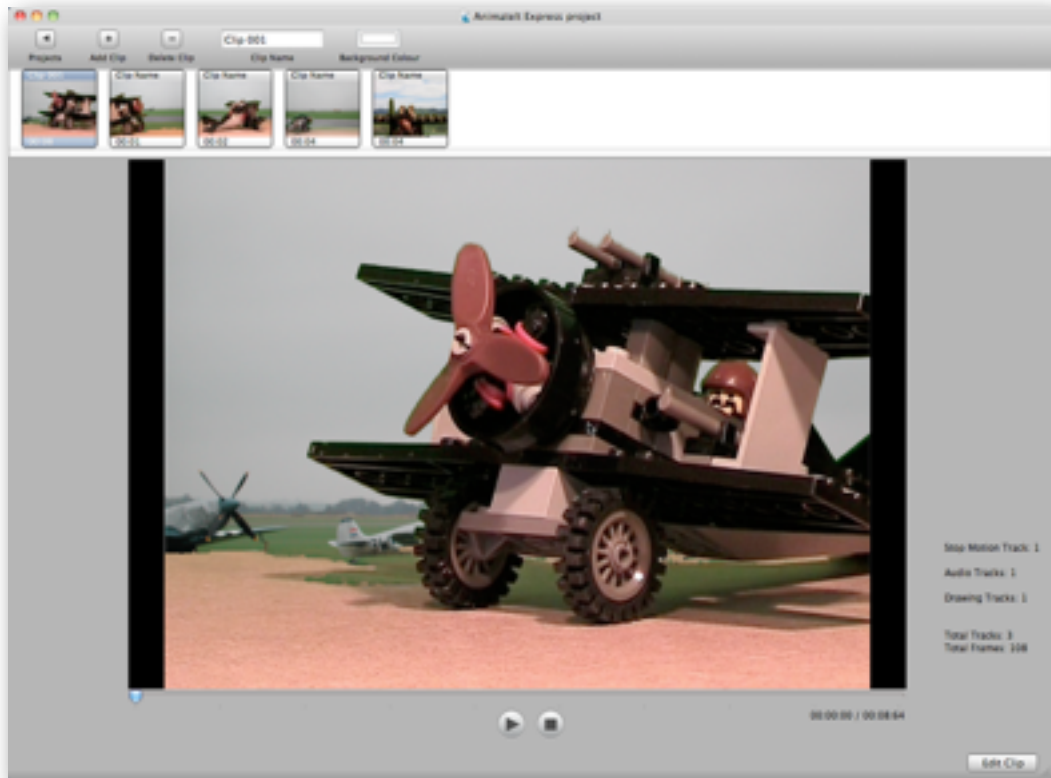
To rename a project select it from the list, then select the project title and enter a new name.



Delete a Project

To delete a project, select the project from the list in the Projects window, and then click on the Delete button in the tool bar. You will be asked to confirm your choice and then the project will be deleted.

Clips



Clips Mode

Animations and films are not generally filmed in one long single session. They are normally shot as separate clips, edited and the clips then 'spliced' together.

I Can Animate allows you to organise your animation into clips and you are strongly encouraged to shoot your animations as a series of separate clips. Shooting in this way is advantageous as it allows you to shoot your scenes in any order, and reorder them once they have been captured. It also means that each clip can use different background pictures if using the [chroma key](#) features, and makes keeping track of your frames a lot easier.

Double clicking on a clip or selecting it and choosing the *Edit Clip* button, opens the Capture/editing window.

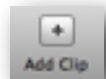
The example above shows an animation comprising of five clips. Each clip can be given a name, this might be a scene name or refer to an action on your storyboard. Also displayed is the duration of the clip. Selecting a clip shows the keyframe in the playback panel, and additional information regarding the clip, total number and types of tracks, and total of frames it contains.

A single clip is automatically created when you create a new project.

Clip Tool Panel

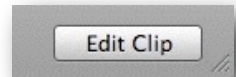
Add Clip

Creates a new empty clip in your project and automatically names it with the name 'Clip' and a value, e.g Clip 002.

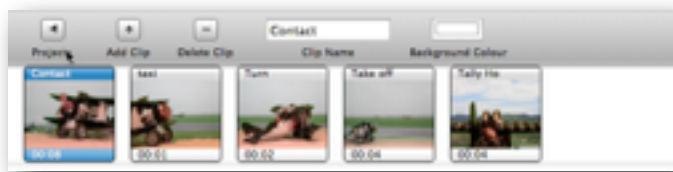


Edit clip

To add to or edit you clip select it and then choose Edit clip from the tools panel. Alternatively you can double click on the clip you wish to edit. You will then go directly to the [capture window](#) where you can begin to capture more frames or choose to add sound, backgrounds, titles and so on.



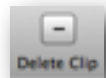
Rename clip



To rename a clip, select the clip and then enter a new name in the Clip Name field.

Delete clip


Select the clip you wish to delete then the Delete clip option from the tool panel. You will be asked to confirm your choice and the clip will be deleted.

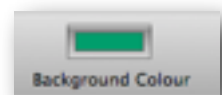


Background Colour

Each clip that you create can have a background colour. Select the clip you wish to change the background colour of in the timeline.

 Select the Background colour well in the tool bar.


 Choose the colour from the colour palette.



You will only see the background colour displayed in clips where no frames have been captured.

Playback

The Clips window also has a preview screen where you can playback your animation.

 Click on the clip you wish to playback.

It will appear in the playback screen click the play button. The time frame is displayed in

Minutes : seconds : hundredths

You can scrub to any point in your animation, and play from that timeframe or just step through the film.

Export and Sharing a Project

Once you have finished your project you can choose to either Export or Share it. You can only export the whole project from the Clips Mode screen.

Export

From the File menu select the **Export Clip...** option to export the selected clip or **Export Project...** ⌘E, to export the complete project.

The Export preferences panel will appear allowing you choose the Size of your movie output, give the file a name and choose the location where you wish to save it.



Export Clips

Image Resolution - What should I choose?

The resolution of an image refers to the number of pixels in that image and is displayed as the width and height of the image in pixels. An image may be expressed for example, as having a resolution of 640 x 480 pixels. The actual total number of pixels is determined by multiplying the width and height of the image. So, an image that is 640 x 480 pixels has 307,200 total pixels.

Monitors, TV screens, computers, laptops, mobile phones, iPods, iPads, and so on, also have screen resolution, which plays a role in how images appear onscreen. For example, if you're viewing an image with a large resolution on a device whose screen has a smaller resolution, you have to scroll to see the entire image. If the image you're viewing has a smaller resolution than your screen, you'll see the entire image without scrolling, and there will be space around the image.

When you Share or Export a project, you are given a choice to render it in a number of sizes, the panel also indicates the sort of devices that suite each type of resolution:

- Tiny, mobile,
- Medium
- Large

- HD 720p
- HD 1080p.

The resolution of the exported movie for each of these sizes varies depending on the aspect ratio (standard or widescreen) you chose when you created the project.

The list below, are the resolutions for each size, based on the original aspect ratio of your project.

- Mobile: 480 by 360 pixels for standard aspect ratio or 480 by 272 pixels for widescreen aspect ratio.
- Medium: 640 by 480 pixels for standard aspect ratio or 640 by 360 pixels for widescreen aspect ratio.
- Large: 720 by 540 pixels for standard aspect ratio or 960 by 540 pixels for widescreen aspect ratio.
This size can be rendered only if the resolution of your original video is at least 960 by 540 pixels (widescreen aspect ratio) or 720 by 540 pixels (standard aspect ratio).
- HD 720p: 1280 by 720 pixels for widescreen aspect ratio.
This size can be rendered only if the resolution of your original video is at least 960 by 540 pixels and your project is set to widescreen aspect ratio (16:9).
- HD 1080p: 1920 by 1080 pixels for widescreen aspect ratio.
This size can be rendered only if the resolution of your original video is greater than 1280 by 720 pixels and your project is set to widescreen aspect ratio (16:9).

Once you have made your selections and select the **Export** button, and choose a name and location to save to.

Exporting may take a while depending on your choices, how long your animation is and the performance of your computer, please be patient.

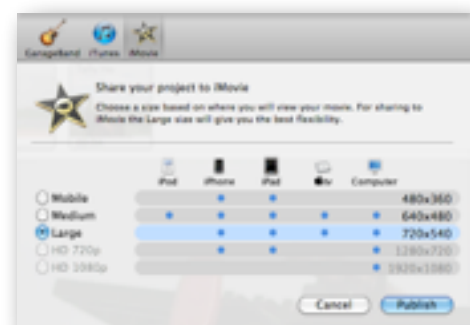
Share a Project

From the File menu select the **Share** option.

The Share preferences panel will appear allowing you choose the Size of your movie output, and the application you wish to share it with, GarageBand, iTunes or iMovie.

When you have decided the project will automatically be shared with the application you have chosen and that application will then launch allowing you to continue post production editing.

- **iMovie 10 on OS X 10.9 Mavericks no longer supports Movie tracks. I Can Animate can therefore no longer Share a movie file to GarageBand.**



Project Settings

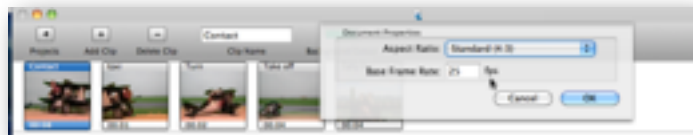
Project based preferences can be applied to individual projects and are chosen in the Project Properties option.

This is accessed through the File menu and by then selecting Project Properties... ⌘J, from the list.

Changes made here will be applied to the **whole project** you are currently working on. To apply them to a different project you will need to first open that project.



Aspect ratio



The aspect ratio of an image is the ratio of the width of the image to its height, expressed as two numbers separated by a colon. Two common aspect ratios are 4:3, the universal video format of

the 20th century, and 16:9, universal for high-definition television and European digital television, a third value 3:2, is used for mobile devices such as the iPhone and iPod Touch.

I Can Animate can use all these formats but you will need a widescreen camera to take advantage of the 16:9 format.

Base Frame Rate

This is determined by the number of frames per second and can be set to any value but the commonly used values are 24fps, 25fps or 30fps.

- 24fps - This rate is used mainly by filmmakers.
- 25fps - This is the predominant video system used in the UK and Europe, and a great many other countries, and refers to 25 frames being transmitted every second. This is known as [PAL](#) (Phase Alternating Line)
- 30fps - The transmission speed used in North America and some Pacific areas. This system is known as [NTSC](#) (National Television System Committee).

More information on [frame rates can be found later in this guide](#).

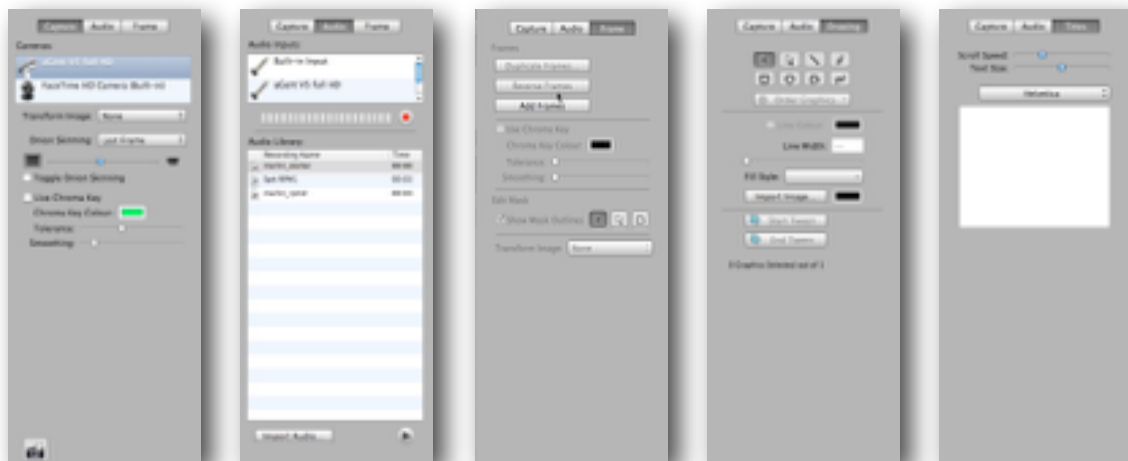
Capture



Capture Screen

We've already looked at the [capture window](#) briefly in the 'Quick Start' section. The Capture window, allows you to capture and edit your animation. It is divided into three main areas, the tool panel on the left, the preview window, and the timeline at the bottom of the window.

The Tool panels contents change to reflect the choices you make in this window and contain tools appropriate to your selection. The different panels appear based on selection of buttons and or selections made in the timeline at the bottom of the screen.



Capture

Audio

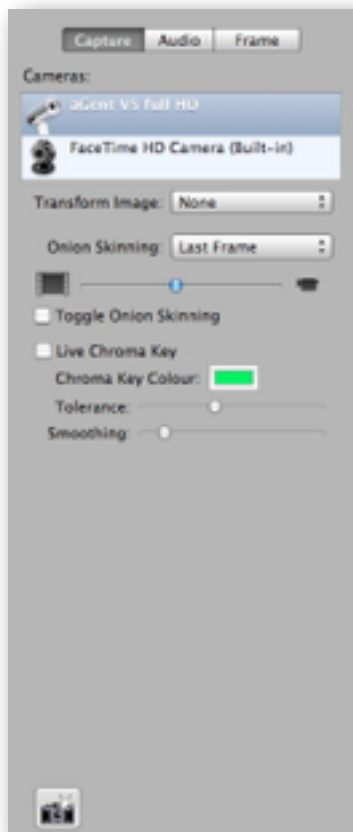
Frame

Drawing

Titles

Each of the functions of these panels will be dealt with independently.

Capture Mode



Clips button - takes you to the [Clips view](#).

Capture, Audio, Drawing - These buttons change the mode of the display and will each be dealt with later.

Cameras - A list of cameras available to I Can Animate appears here. To select a camera to use just click on its name in the window. The display in the preview area will now reflect what is being 'seen' by your chosen camera. Control of the cameras settings, such as Brightness, White balance Contrast, Gamma etc, can now only be facilitated through a third party application and we would recommend [iGlasses](#).

Transform Image - If your camera has been mounted on a rostrum or you wish to mount the camera very low to a surface and to do that need to mount it upside down, this feature will also allow you to reflect the image either vertically or horizontally.



Click on the popup-menu to choose the desired transformation.

Onion skinning - Displays the feed from the camera as well as the last captured frame(s).

Onion Skinning

What is it?

Onion skinning is a technique with roots that go back to the early 1920's when Disney™ animators would create each frame of their animations on different transparent sheets, or gels. These early animators came up with onion skinning as a way to ensure that these individual gels lined up properly to create a seamless animation. Techniques that are still used today.

The process starts with the first frame of the animation where the animator draws an outline of the animated character, to which no colour is added. A second gel is laid over the first. In the second gel, the animator re-draws the animation, but moves the character slightly into the position necessary for frame two of the animated sequence. The advantage of this process is that you can see the previous position of the animation you are drawing through the transparent gels.

The process is repeated by adding additional gels, one on top of the other. Each gel is a frame of the animation. By holding the gels to the light they could see all the positions of the animated character in one view.

When you create a flick book you are doing something very similar.

I Can Animate uses this technique allowing you to view the progressive movement of an object over a series of frames, essential when trying to gauge the distance to move objects from one frame to another.

Each time you capture a new frame it is added to the end of the clip and the frame selection will advance so that the new frame will become part of the selection. The preview will now show the feed from the camera. If you choose to use the onion skin it will then show the selected frame and

the feed through the camera overlaid. Until you move the objects being animated you might not see the onion skinning effect.

A maximum of four frames and the feed from the camera may be onion skinned.

You may also find this feature useful if you inadvertently move your model or camera, allowing you to reposition either with accuracy.

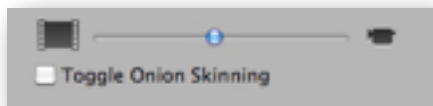
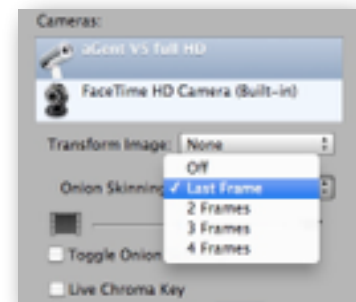
Onion skinning in Capture mode.



Selecting the Onion skin

By default I Can Animate always has the onion skinning feature enabled on the Last Frame. This quite simply means that the feed from the camera is being displayed over the top of the last frame taken.

Select the Onion Skinning disclosure arrow and from the menu choose how many frames you wish to use in your onion skin. You can choose from one to four frames.



The relative opacity of the camera/frame feed is controlled by the slider and is only enabled when the view is set to onion skinning.

If you look carefully at the examples below, you can see the different layers making up each example.

Onion Skinning over 1, 2, 3 and 4 frames.

Toggle Onion Skinning

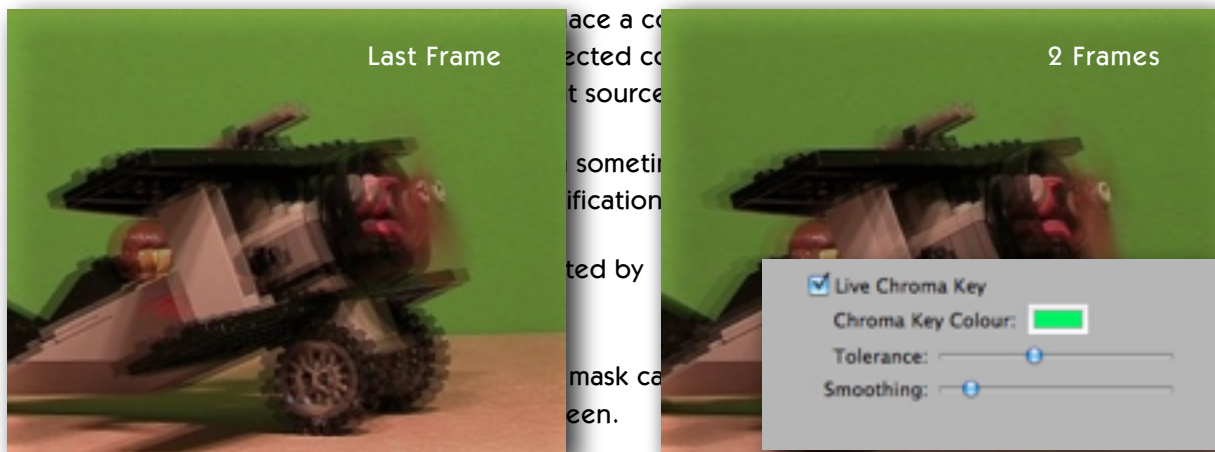
Selecting this setting will automatically move the camera opacity slider back and forth to give you a better idea of the movement from the selected frame to the image from the camera.

If you do not want to use the onion skin feature, then move the slider control to the far left to show only the last captured frame, to the right, and only the feed from the camera is shown.



Live Chroma Key

Please refer to the section on [Using the Chroma Key](#) for more details on using the chroma key mask.



To Change the Key Colour:



Tolerance

This slider enables you to set a tolerance for chroma key colour. Ideally you will want to set this as low as possible so that all the background is shown. If you set it too high you may find that some of your foreground subjects start to disappear. If you need to set it very high it is because your chroma key background is not evenly lit. Please refer to the section [Chroma Key Backdrops](#) for tips on using a chroma key background.

Smoothing

The Smoothing slider enables you to smooth off the edges of your foreground so eliminating some of the jagged edges around the foreground subject.

Capture



Clicking the capture button or pressing the 1 key will capture a frame.

Alternatively, pressing any of the number keys on the keyboard will take a corresponding number of frames i.e. pressing number 5 takes five identical frames.



I Can Animate supports multiple undo and redo. This means that you can undo and redo any actions that you undertake for. If you inadvertently delete a frame, undo the action and the frame will reappear.

Undo and redo are accessed through the Edit menu or by the keyboard shortcuts;

⌘Z for undo

⇧⌘Z for redo

Timeline

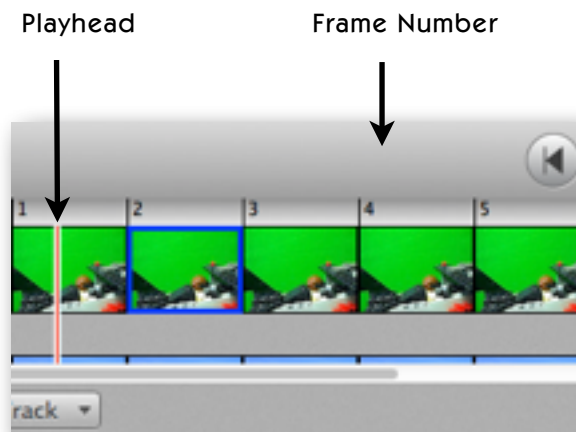
The timeline is located at the bottom of the window when you are in any of the editing modes.

The timeline contains tracks, and by default a new project timeline will contain a **capture track** and an **audio track**.

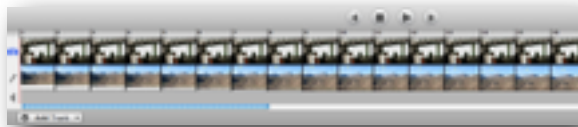


The timeline has a frame number scale so that you can see exactly which frame you are working on at any time and a playhead is visible during playback and editing.

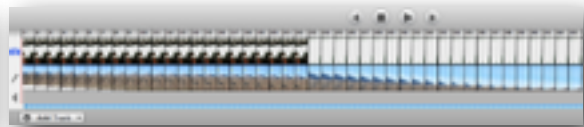
Double clicking at any point in the timeline will cause the playhead to immediately jump to that location.



The timeline can also be zoomed using the zoom control. This allows you to quickly navigate to captured frames as well as making copying and extending tracks easier.



No Zoom



Zoomed out

Adding Tracks

Two tracks are always present in a new clip, the Capture track and an Audio track. Each track is represented by a symbol on the left hand side of the timeline.

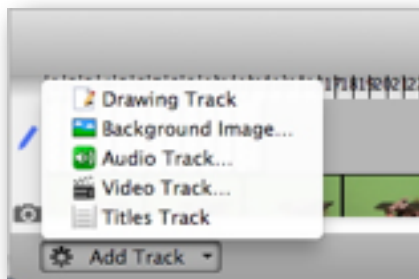


Capture Track - Frames captured using the camera appear in this track.



Audio Track - Add audio tracks and import sound files to your animation.

Additional tracks can be added to the timeline:



Under the timeline on the left hand side of the window, is the **Add Track** button.

Selecting this opens a menu from which you can choose the track you wish to add. There is no limit to the number of each type of track that you can add to the timeline, but you should be aware that adding large numbers of tracks, especially if they contain audio, video or images, can slow some computers down and may produce large files.



Drawing track - [Sits in front](#) of the captured track. You can draw objects using the drawing tools and also import images.



Background Image Track - [Sits behind](#) the captured image track. Used for importing backgrounds that can be used with the [chroma key](#) feature.

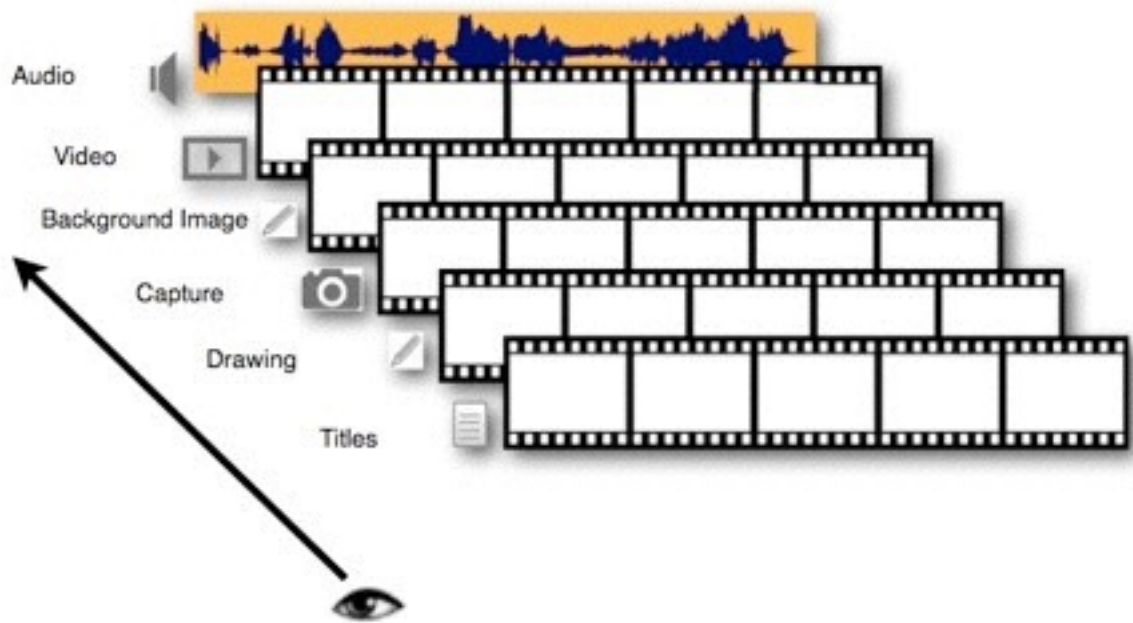


Video - Similar to a background track except that you can import video to be used in the background when using the chroma key.



Titles Track - [Sits in front](#) of all other tracks and allows you to overlay text onto tracks. Can be used for titling and crediting your animations.

The timeline tracks can be visualised as separate 'film tracks' that can be layered one on top of the other. Conceptually, some tracks are 'in front' of the captured image track, others will 'be behind' the captured image track. The diagram below shows the hierarchy.



Tracks hierarchy

Deleting Tracks

Tracks can be deleted from the timeline by right clicking on them and confirming the *Delete Track* with a mouse button click.

The capture track cannot be deleted from the timeline, but can of course be empty.

Modifying the Effective Frame Rate

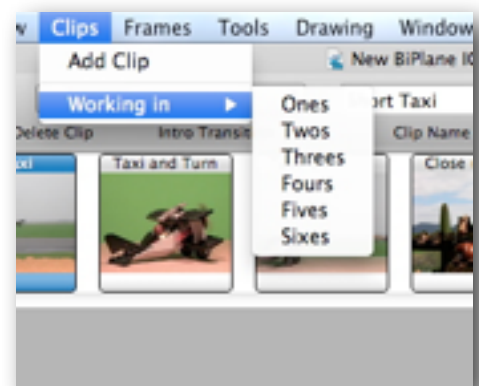
The effective frames per second can be controlled for each individual clip.

Select the Clips menu and from the *Working in* option, choose the value you wish to use. This rate is applied only to the current clip.

The actual effective rate is determined by the [Base Frame Rate](#) figure set in [Project settings](#) and the working in value.

If you have set the Base Frame Rate to the UK digital video standard of 25 frames per second, the rates would be;

- 25 fps (working in ones)
- 12.5 fps (working in twos)
- 8.33 fps working in threes)
- 6.25 fps (working in fours)



5.00 fps (working in fives)

4.16 fps (working in sixes)

on the other hand if you are shooting to the NTSC standard of 30 fps, then the presets are;

30 fps (working in ones)

15 fps (working in twos)

10 fps (working in threes)

7.5 fps (working in fours)

6.0 fps (working in fives)

5.0 fps (working in sixes)

Ordinarily we would suggest that you use the 'working in twos' value unless you have reason to do otherwise. This is the default setting in I Can Animate and the setting most commonly used by animators.

Chroma Key Introduction

Using the chroma key composition tool within I Can Animate allows you to combine a background image with your animation in the foreground. This can either be a still digital image or a movie file. Use of the chroma key can add real depth to your animation, add interest and bring it to life.



Traditionally in films and television chroma keying is done against either a green or blue background as these colours are most least like human skin tones.

In digital animation green has become the preferred colour to use as digital cameras retain more detail in the green channel and it requires less light than blue. Green also has a higher luminance value than blue and in early digital formats the green channel was sampled twice as often as the blue, making it easier to work with.

Animation chroma screens can be purchased from Kudlian Software.

Visit <http://www.kudlian.net> for more details.

In reality the choice of chroma colour is dependent on the colours used in the characters in your animation. For example if you are animating green characters, using a green screen would mean that they too would disappear when the chroma key filter is applied.

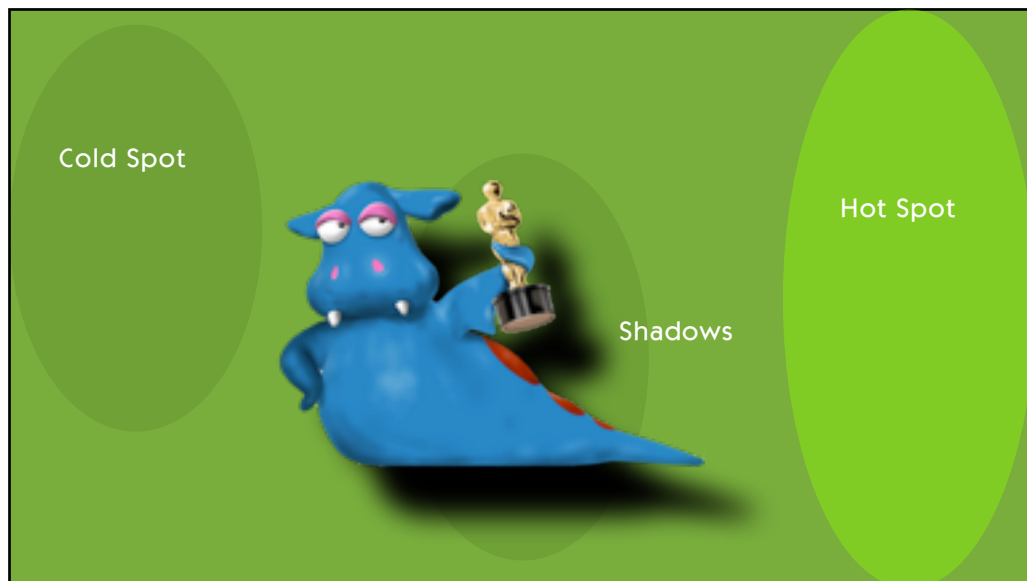
I Can Animate has been designed to allow you to choose any colour as a chroma key background, though we highly recommend using either green or blue wherever possible. We will use the term 'green screen' when referring to using the chroma key feature.

The chroma key mask, which will also be referred to, is the area which will be replaced with a background picture or movie in your finished animation. It is shown in the software by a grey checkerboard, and known as the matte.



Lighting

The most important challenge when working with chroma key is ensuring that the screen is evenly lit and avoiding:



Shadows or cold spots are darker areas on the chroma key screen;

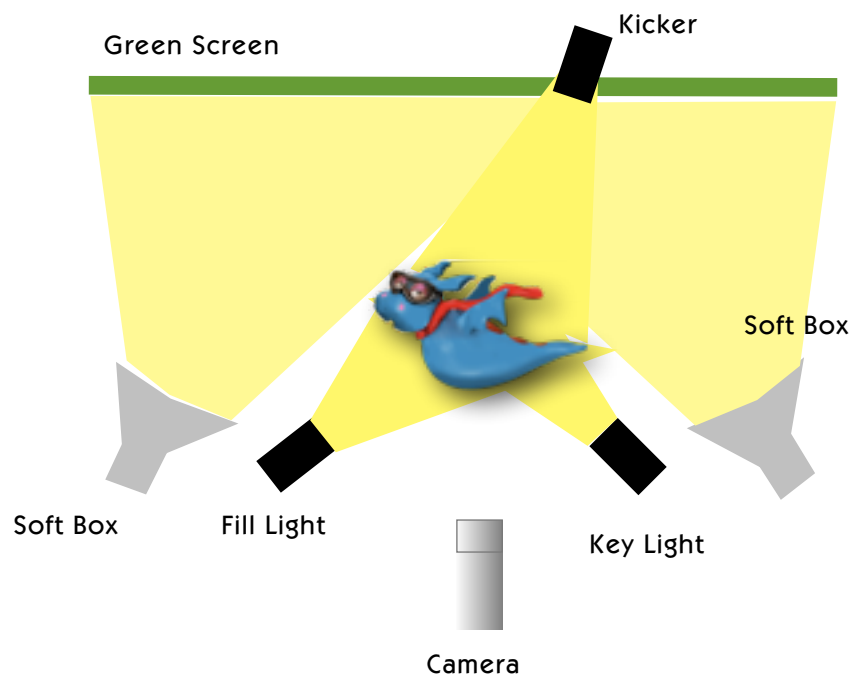
Hot spots are areas that are brighter than the rest of the screen.

An evenly lit screen gives a smaller colour range to be replaced which will in turn give far better results. Natural light from a window gives some of the best light possible though you may lose some of this if you are animating late into the day and don't forget the sun moves round!

Try to choose a material for your chroma key background which is not shiny as this tends to reflect the light resulting in a green tinge to the subject and in turn might make it more difficult to key. A matt surface is much better, and it is also a good idea to ensure that the material is thick enough not to let light through from the back and so give different coloured areas. Attaching your chroma key screen to a backboard is a good way of avoiding this.

If you are using artificial lighting then try to get lamps that give a soft diffuse light rather than a strong direct beam. Getting lighting correct can be a lot of trial and error, but the diagram below might help when you are creating your set and trying to light it.

This depicts an ideal lighting solution, although it does not show that you might also need to light from above. In most cases you probably would not need to go to this sort of configuration to achieve good lighting for animating. Just make sure that your lighting is uniform, soft and try to avoid shadows.



The two Soft boxes are set at an angle of about 70 degrees from the screen.

Using Chroma Key

In I Can Animate the chroma key can be applied in two ways:



Live - Which will apply the chroma key effect whilst you are capturing frames.



Post Filming - Which will apply the chroma key effect to frames you select in the timeline.

There is no difference in how you choose to apply the chroma key layer, though working in the live mode will allow you to see the chroma key mask being applied to each frame as you capture it. This makes it easier to ensure that your characters are in the right place during filming.

Using Live Capture Mode

Live Chroma Key allows you to ensure that you have the correct lighting and no shadows in your shot before capturing the frame. A good key is essential to ensure that you do not get any picture 'noise'. Getting it right to start with means less time trying to sort it out later.

The Live Chroma Key function can be found in the Capture Tool panel.



Ensure that I Can Animate is in Capture Mode.



Activate the Live Chroma Key



Select the Chroma Key Colour well, the colour palette will appear.



Using the colour picker tool, select the colour you wish to use as your chroma key from the image preview on the capture screen. (This is the image coming in from your active camera) The colour well should now show the new colour that you wish to key against.

 Close the colour picker to reactivate the **Live Chroma Key**.

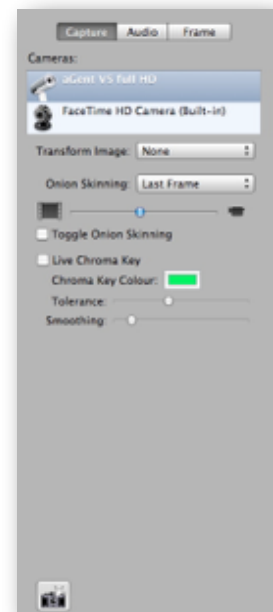
This will now apply the chroma mask or matte to the area you have chosen on each new frame you capture or on frames where the chroma key has been switched on.



Good Key



Poor Key

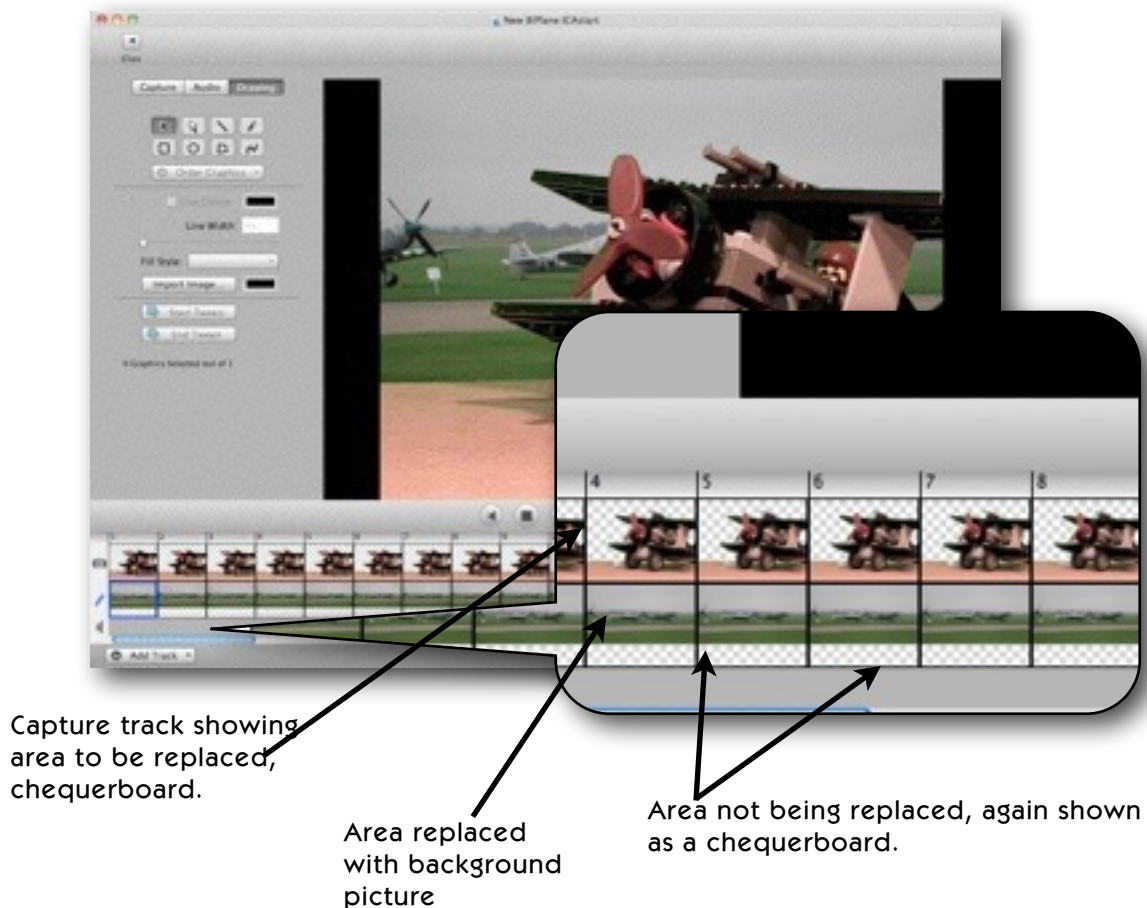


To obtain a good key you may need to adjust the tolerance slider. This enables you to set a tolerance for +the chroma key colour. Ideally it needs to be as small as possible, whilst ensuring that all the background screen has been replaced with the mask. If set too high, as shown in the second example, right, some of your foreground subject(s) start to disappear and is probably because your chroma key background is not evenly or well lit, try changing the lighting.

I Can Animate also allows you to 'smooth' the edge around the foreground subject making blend much better into the background.

You are now ready to start capturing frames against the green screen.

Each time you capture a frame the chroma key settings will be saved along with the frame. When you view the frames in 'Frames' view you will see that the chroma key is automatically turned on and the background picture will replace the checkerboard. If no background picture is present, then the slides background colour will display, by default this is [blue](#).



In the example above the subject has been captured in front of a green screen. The preview window shows the first frame with the background picture replacing the green screen.

In the timeline you can see the capture track showing the area being replaced and below that the background track shows the area not being replaced.

Continue capturing frames. The chroma key settings will be retained for each new frame, so you should not have to change anything.

Adding the Background Picture

You can add the background in after you have finished capturing frames, but you might want to see the matte during filming to use reference points.

Select the **Add Track** button at the bottom of the window and from the list that appears choose **Background image...**

A finder window will appear allowing you to navigate to the file you wish to use as a background picture.

☐ The higher the quality of picture the better your finished result will appear.

The background image track will automatically extend to the same number of frames that you have captured or 12 frames, whichever is the greater.

Use the 'thumb' at the end of the track to extend or decrease the length of the background image track.

More information on [backgrounds](#) can be found further on in this guide.

Chroma Key Tips

- ☐ Make sure the chroma key screen is flat with no wrinkles and is [uniformly lit](#). Shadows on the screen will cause poor results. This is one of the most important areas to consider.
- ☐ Don't have the subject too close to the screen as this can cause shadows to be thrown onto the screen.
- ☐ Make sure the subject is well lit. Do not light directly from the front as this may also cause shadows to appear on the screen.
- ☐ Ensure that the subject does not have any of the colour of the screen or that area will have part of the background appearing on it.
- ☐ Experiment with having the subject slightly out of focus as this can help blend the edges of the subject with the background.

Background Tracks





When you are using a background, whether it be still image or movie, try to acquire as good a quality resource as you can. The result will look much better.

Backgrounds are a per clip resource. If you wish to use different backgrounds in your animation then it is preferable to shoot a different clip for each background you intend to use.

If you are using a movie as a background then it should last only as long as the duration of your animated clip as this will potentially save space and speed up rendering.

Inserting a Background Picture

To insert a background into your animation;


-  Select the **Add Track** button located underneath the Tracks display.
-  Select '**Background Image...**' from the menu.
-  An explorer window will open allowing you to navigate to, choose and import an image.
-  The track will appear below the captured track and is denoted by the Pencil icon.

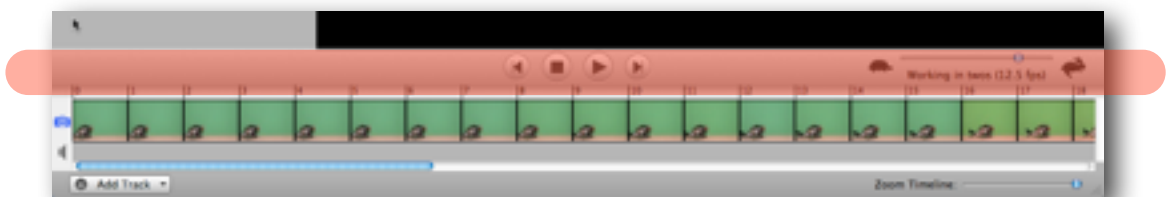



Twelve frames will automatically appear in the background track to begin with. If you have already captured more than twelve frames, then an equal number of background frames will be added.

Expand the Timeline View

You can alter the size of the tracks view in order to be able to see more tracks.

-  Move the mouse pointer over the area of the I Can Animate window between the preview screen and the timeline. In the diagram below it has been shaded red.



-  Click and hold the mouse button.

The pointer symbol will change, depending on which direction you are able to expand the timeline.



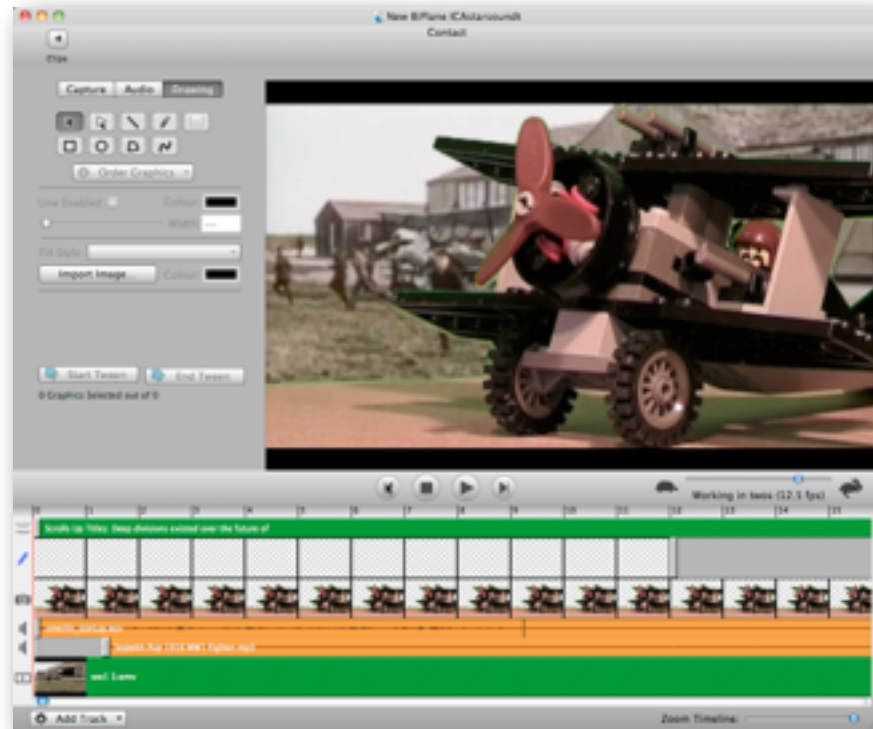
Can only expand up



Can only expand down



Expand up or down



This shows multiple tracks in the timeline.

Effects using the Background Image

Once you have placed your background image onto the timeline it can be edited to create various effects:

Resize

If the background image is too small or you wish to only show part of it, then you can alter its position and size.



Select the first frame in the Background track. The image should now appear in preview.

If you have already captured a few frames against a green screen then the background picture will be displayed behind your characters.

The imported picture will be shown in the background and initially has a dotted line with handles in each corner. This shows how large the graphic is in comparison to the area that you have available to fill. The dotted line and handles will appear each time you select the background picture.



The higher the quality of the image you import the better.

You can move and reposition the background picture as well as increase and decrease its size, and rotate it.



Click on the background picture in the preview window and hold down the mouse button. When you now move the mouse, the picture moves as well. If you move it across to the right hand side you will eventually see the edge of your picture. In each of the corners of the picture are handles. These allow you to resize the picture, and a rotation handle that allows you to rotate the picture.



Try it to see the effect.



Hover your mouse pointer over the resizing handle, it changes to a double headed arrow showing the direction in which you can expand, minimise or rotate the picture.

While you are doing this watch what happens in the background track, to the other frames. You will see them change as well.

Try making the picture larger in the preview window using the resizing handles and then position the picture so that it shows only the area you wish to appear in your animation.

Zooming and Panning









The illusion of movement is created by using pans and zooms on the background picture.

Download the demonstration project [Hillside](#) from our website. This file contains an I Can Animate project and a background picture.

The effect that we are going to create is of the aircraft flying towards the hill.

A single frame is captured looking through the wing of the aircraft.


The clip needs to last for around 4 seconds and working at the standard frame rate of 12.5 frames per seconds, we are going to require a further 50 frames. (PAL)

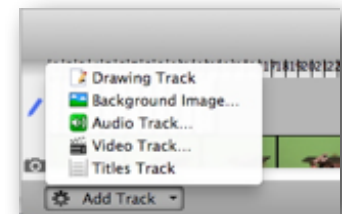
-  [Import the project](#) Hillside, it will appear in your projects list as **Hillside**. You might need to select the **This Mac** button in the projects window if you can't see it straight away.
-  Select the project and then either double click it or select the Open button. The project will load and you'll go to the Clips view.
-  Next double click the clip or select it and choose the **Edit clip** button.
-  Click on the first frame in the timeline. Note the Frame tab is selected.
-  Select the **Duplicate Frames...** option from the tool panel. A second frame will now appear in the timeline. This is a copy of frame 1. The keyboard shortcut **cmd (⌘) D** also duplicates the frame.
-  Repeat until you have 5 frames in the timeline.
-  Click on frame 1 in the capture track and press and hold the Shift key on your keyboard, then select frame 5, to select all the frames or use the keyboard shortcut **⌘ D**.
-  Select Duplicate Frames... from the tool panel. This time the Duplicate Frames sheet will appear. Just select the *Insert after selected frames* option.

Five frames are now duplicated and inserted after the selected frames, you now have ten frames.

-  Repeat this procedure until you have around fifty frames in total.

Next add in the background track. A background picture was supplied with the example file you downloaded. Make sure this is accessible.


-  Select the **Add Track** button and then **Background image** from the list. An explorer window will open allowing you to navigate to the location on your computer where you have stored the downloaded project picture. Select it and click **Import**.



An equal number of background image frames will now appear in a new background track in your timeline.




Remember you can [expand the height on the timeline](#) using the mouse.

-  **HINT-** Deleting the background track, right click the mouse over the track in the timeline, a Delete track option will appear, confirm deletion with a right mouse click. If you change your mind again, the keyboard shortcut of cmd and Z (⌘Z) will undo the last action. (Shift ⌘ Z - redo)


Applying the Chroma Key

Unless you have already switched the chroma key feature on, then your animation will still have the green backdrop showing behind your characters.

To apply the chroma key to captured frames you first need to select the frames. This can be done in several ways:

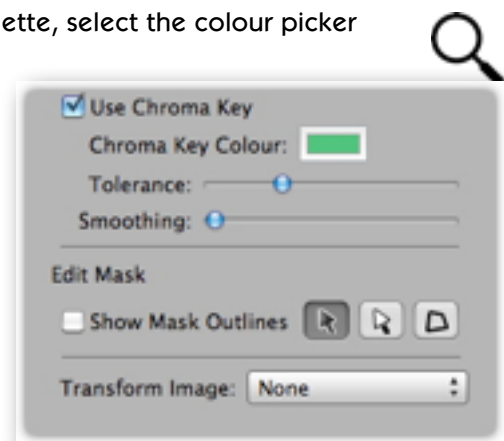
-  Click on the first frame that you wish to apply the chroma key effect.

The **Frame** view is now active.




-  Click in the colour well to make active the colour palette, select the colour picker (magnifying glass), and click on the green background in the preview window.

-  Select the **Use Chroma Key** checkbox.

Your background picture will appear in the preview window, replacing the green background. If only some of the green is replaced, then you can use the **Tolerance** slider to try to eliminate all the 'noise'. This process is very much trial and error and how effective you will be depends on how well the subject was lit, reflections, colour of foreground subject and so on.



To apply the chroma key to all frames in the current clip;

-  Select any captured frame in the timeline so that a blue line appears around it, this shows that the frame is selected.
-  Then use **cmd A** to select all frames. All the frames should then have a blue highlight.
-  Select the **Use Chroma Key** checkbox in the Frames tool panel to turn the chroma key on for all frames. If you have captured a large number of frames, then it might take a moment to composite the images, please be patient, it's worth it.

The preview will then show both the captured image and the background picture will have replaced the matte.



From this...



to this.

Background Effects

Interesting effects can be created by using pans and zooms or a combination of both on the background picture.

Setting the Zoom of the Background Picture:

The zoom on a picture can be changed by altering the size of the image. In the example we will make the aeroplane appear to fly towards the hills in the distance. The effect is easily created by gradually enlarging the background picture over the sequence of frames. This would be time consuming to do frame by frame but I Can Animate can create this effect quickly and easily.

Make sure the chroma key is turned on for frame 1;



Click on frame 1 in the background track. The Drawing tab and preview should now be selected.

Also notice the dotted line surrounding the background picture in preview and the handles, small squares, that can be used to alter the size of the graphic.

Can't see them?



Move the mouse pointer into the preview area and click and drag the mouse, the picture will move. Drag it towards the edge of the preview area and you will see the edge of the picture appear.



Release the mouse button to see the dotted line showing the edge of the picture.



Hold the Shift key down, click and drag from the corner of graphic



Using the shift key during resizing maintains the aspect ratio of the picture.




Alter the size of the picture so that it just fills the area where the chroma key has been applied. You might need to move the overall position of the picture, by clicking and dragging anywhere on

the background picture. You might also notice that as you alter the size and position of the picture this is also reflected in all the thumbnails in the timeline. When you are moving the picture around you may well see a white border where there is no picture. This is normal and is just the edge of your picture.

If you want to position the picture exactly back to a previous position(s) use the Undo/Redo commands.

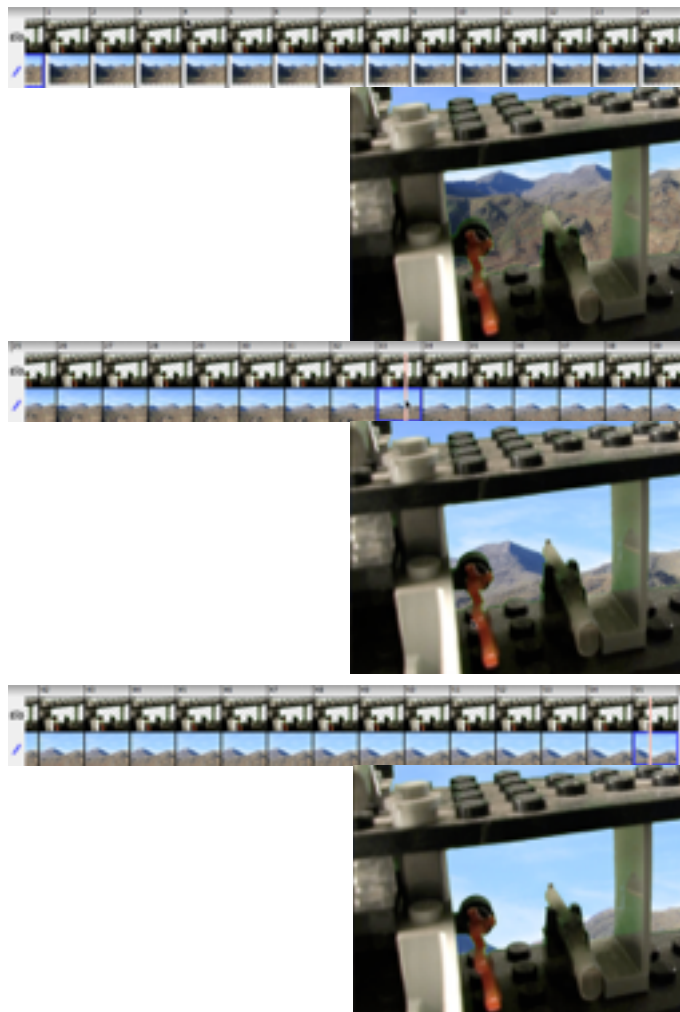
Once frame 1 has been modified, we need to do a similar thing to the last frame.

Tweening the Background Settings:

-  Select the last background frame in the clip.
-  Move the background picture to be somewhere different to the first frames.
-  Click on the End Tween button

Notice what happens to the thumbnails as you make the changes. I Can Animate is automatically tweening all the intermediate frames.

The sequence below shows the frames at the start of the clip, in the middle and at the end. Look carefully and you can see the subtle progression in the background pictures that when played back, will give the illusion of the aircraft flying towards and over the top of the hills.



When you have finished modifying the background picture, go to the beginning click on the Play button to see the effect.

You can also modify the zoom and pan settings at any point during the clip, and I Can Animate will automatically tween the preceding and following frames.

Adding Objects to the background track

The background track can also contain drawn objects and imported pictures. In the example below we can see that there are no captured frames, only Background and Audio tracks.

We have also introduced a spacecraft in the bottom right of the screen. This is a picture downloaded from the internet to which a transparency has been applied.

- ☐ The transparency has been added in another software package. Apples Preview application has this feature and can be used to good effect.



The finished 'short', showing the spacecraft moving off into the distance, rotating, on its journey through the nebula, can be previewed on our website. To recreate that movement is very easy using I Can Animate and there's a "how to tutorial" to download.

[Nebula](http://www.kudlian.net/products/icananimatev2/examples/nebula.html)

<http://www.kudlian.net/products/icananimatev2/examples/nebula.html>

Audio


I Can Animate 2 has the ability to add sound directly to an animation allowing you to either;

- Import a sound file from your computer wav, mp3.
- Record directly into I Can Animate using an input device for example, a microphone.

You can have as many different audio tracks as you like within your animation. To keep the timeline as clutter free as possible, the program defaults to opening with just one audio track. Adding many audio tracks might also cause confusion, and lead to very large files.

- ☐ You may well find that your animation takes longer to create, but it's worth it.

Adding additional Audio Tracks


-  Select the Audio tab from the Tools panel.

Importing Audio files into the Audio Library

Each animation that you create can have it's own audio library. The audio files can then be used with any clip within the project. You can import mp3 and wav files allowing compatibility I Can Animate 2 files created on Windows.

- ☐ **HINT** - It is a good idea to make sure the audio files you are importing have meaningful names so that they are easily recognisable and that they are edited prior to importing, to keep their sizes small.

To import an audio file:

-  Select the **Import Audio...** option from the Audio tool panel.

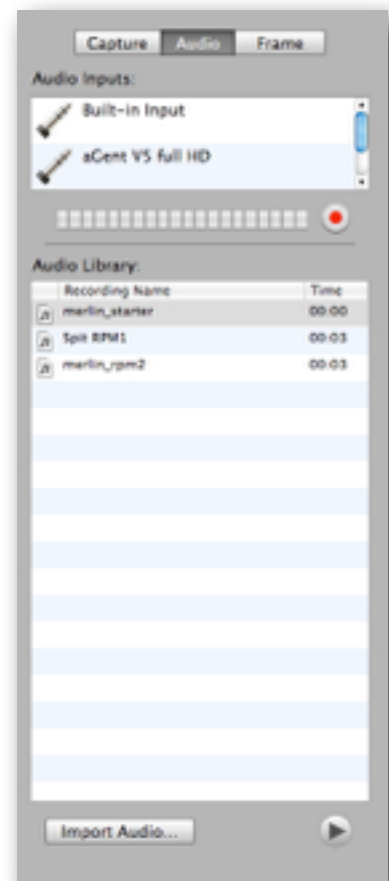
This will then open an explorer window which will allow you to navigate to the audio file you wish to import.

- ☐ Imports .wav and .mp3 sound files.

Select the file, then click on **Import** and the file will appear in your library. The playback duration will also be displayed.










You can populate the library with as many sound files as you like but remember each file will be saved with your project so it is a good idea not to import sound files you do not aim to use. Once imported they cannot be deleted from the library.

To hear the file select it and click the Play button just below the list window.




Recording Audio

As well as being able to import audio files into I Can Animate, you can also use a microphone to record sounds directly into your animation.


-  Select the Audio tab in the tool bar at the top of the window.
-  Choose the microphone you wish to use from the Audio Inputs available.
-  Test the microphone. As you speak the bar in the sound meter will fluctuate depending on how loudly you are speaking.
-  You may have to alter the sound settings on your computer using the **System Preferences...** if the input level is low.
-  Select the position in your animation you would like your recording to begin by clicking on the appropriate frame in the timeline. The Playhead should appear at that point.
-  Click on the Start recording button to begin your recording. An audio track is created and your recording will be added to this at the position of the playhead as well a to the audio library. 
-  When you have finished, click on the Stop recording button. 

A copy of your recording is also placed into the Audio Library.

-  **HINT:** It is a good idea to script what you want to record if it is a voice over. Don't make the sound clips long and rambling.

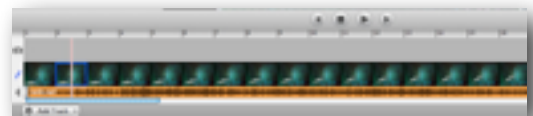
Adding Audio to the Timeline

Additional sound files can be added to your animation by creating additional sound tracks.

Make sure there is an empty Audio track in the timeline, you will see this symbol next to it if 

not then you will need to [add one](#).

Drag and drop the soundtrack file you wish to use from the library into the timeline. You do not have to be accurate with where you drop the file as they can be moved in the timeline, but to take care as moving the mouse pointer outside of the audio track bounds, deletes the file.



Moving the Audio File

To move your sound file click and drag on it in the timeline, you can move it to the left or right.

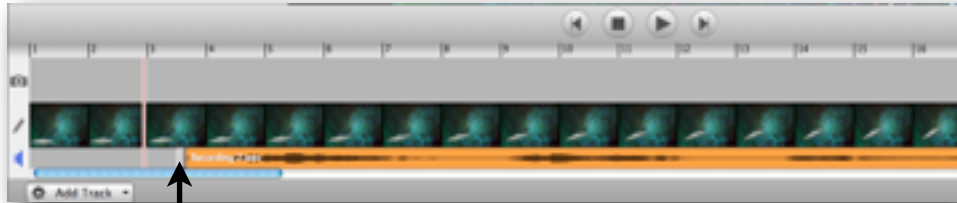
Deleting an Audio File

Audio files can be deleted from the timeline by right clicking on them and selecting the Delete Track button. The Audio files are **not deleted** from the Audio Library as they may be used in another clip.

Changing the Duration of the Audio Clip

To save space and keep file sizes small, you should always only import the sound files you are going to use and they should only be as long as is needed. There are a number of audio software titles available that you can edit sound files in.

I Can Animate does however allow you to change the duration of a sound file by shortening the file from its beginning or end. The file is not physically altered in any way, only the time it plays for and the part of the file it plays.



At the beginning and end of each Audio clip is a Thumb. If you move your mouse pointer over it a symbol will appear as shown below;
Thumb

The audio clip can be shortened or extended.

The audio clip can only be shortened, if you are at the beginning or end of the clip.

Clicking and dragging on the audio clip in the direction of the arrow will change the duration of the audio clip, i.e. shortening it or extending it.




Duplicating Frames


One of the powerful features of I Can Animate is its frame duplicating. You can just duplicate a single frame which will be inserted after the selected frame, but there are other options and it is even possible to duplicate a selection of frames and reverse them. This is particularly useful if for example, you have animated an eye closing and then just want to use the same frames again to show it opening, in I Can Animate this is easily achievable as all you do is insert the frames in reverse order.

Duplicating a Frame:

To duplicate a single frame you must have only one frame selected.

 Select the frame you wish to duplicate.


Note the Frame tab is now automatically selected in the tool bar.

 Click on the Duplicate Frames... button in the tool panel. The frame is inserted next to the original frame and the duplicated frame then becomes selected. If you wish you can drag the duplicated frame to a new position.

Duplicating a Selection of Frames:

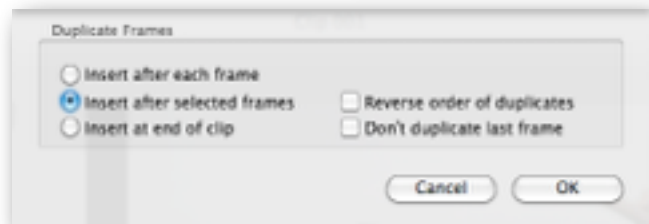
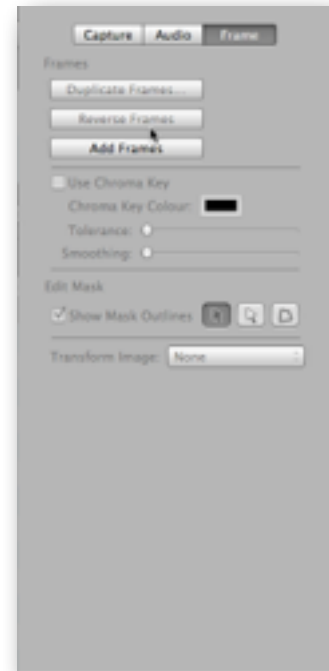
To duplicate multiple frames you must have more than one frame selected.

 Select the frames you wish to duplicate.

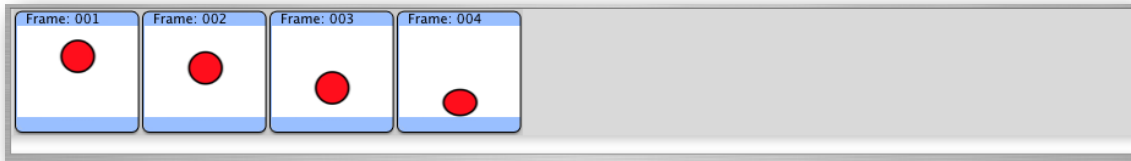
 Click on Duplicate Frames... in the tool panel. A sheet will appear showing a number of copying options. After you have made your selection click OK

You can choose to reverse the order of the frames you have just copied. This is particularly useful if you have animated an eye which has gone from open to closed and you want to duplicate the frames of the eye opening again, but you need the order of frames reversing.

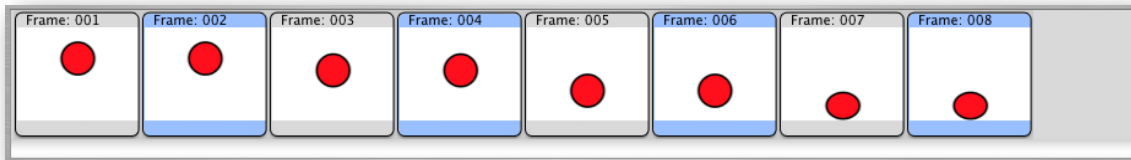
The easiest way to explain how each of the options work is by looking at the results of duplicating the frames in the graphic examples below depicting a falling ball. The duplicated frames are the ones that are shown selected. This is an example only and you should be aware that it is not possible to duplicate graphics frames in this way, you should refer to the section on tweening for this.



These are our five frames we are going to duplicate.

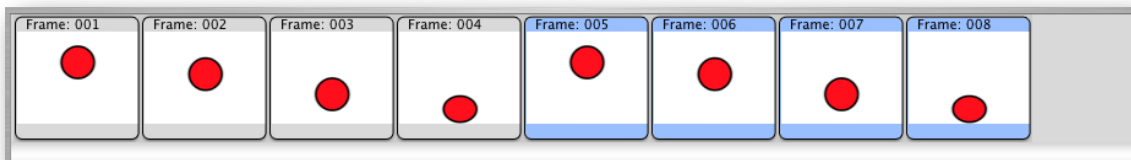


Insert after each frame produces:



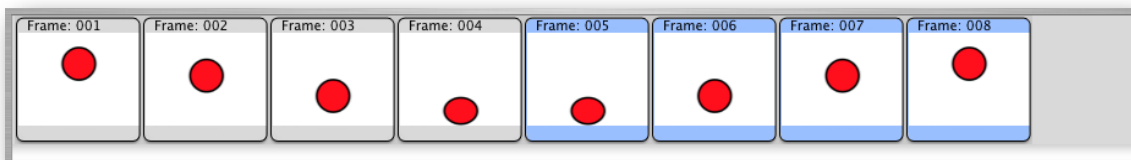
This would have the effect of slowing down the animation as each frame is now appearing for twice as long.

Insert after selected frames produces:



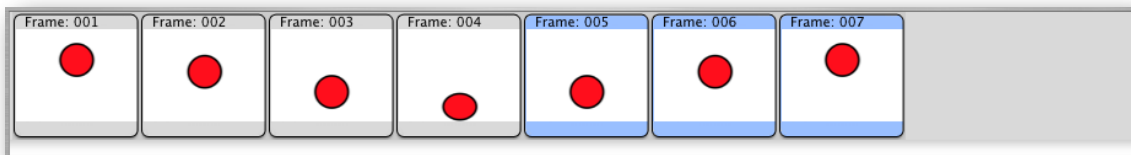
This is useful if you have a complete cycle of animation which you wish to reproduce.

Insert after selected frames, and Reverse order of duplicates produces:



Here you can see that the ball is now appearing to bounce back again. This is useful where you have animated the first cycle of an animation and wish to then reproduce it in reverse. Another example might be a character waving.

Insert after selected frames with Reverse order of duplicates and Don't duplicate last frame produces:



This is similar to the previous copy but we haven't duplicated the last frame of the ball being squashed. This will stop the ball appearing to pause as it is squashed.

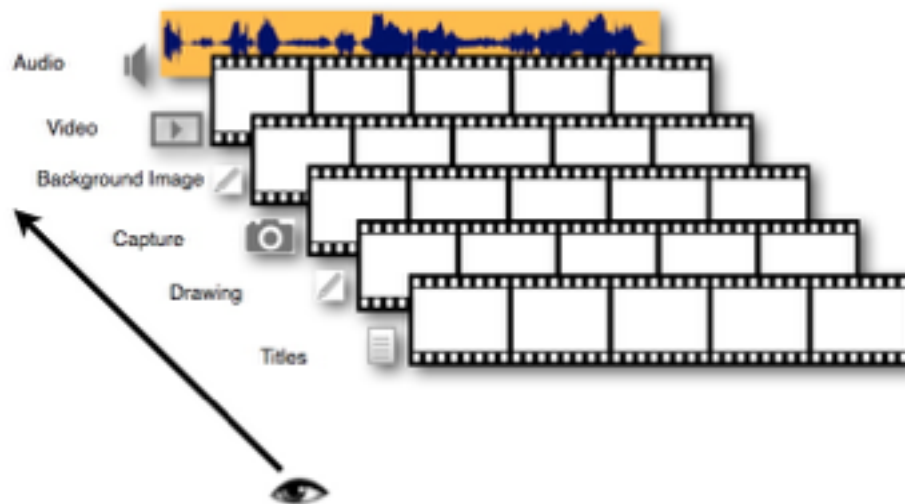
Drawing

I Can Animate also features path based drawing tools. The drawing tools are provided to allow for the creation of effects, adding objects and masking of objects.

Any shapes created in a frame can be easily manipulated and duplicated in other frames.

Drawing tools can only be used in a drawing track. This differs considerably from the original I Can Animate.

There are now two 'types' of drawing track in I Can Animate each having their [own hierarchy in the compositing](#). It is important to understand where each one sits in relation to the capture track and what the effect of using each type is.



- ✍ Drawing track - this sits in front of the captured track
- ✍ [Background image track](#) - this sits behind the captured image track

You do not have to have any captured images to use the drawing features and can create animations just using the drawing features.

There are a couple of rules to remember when you are using the drawing tools.

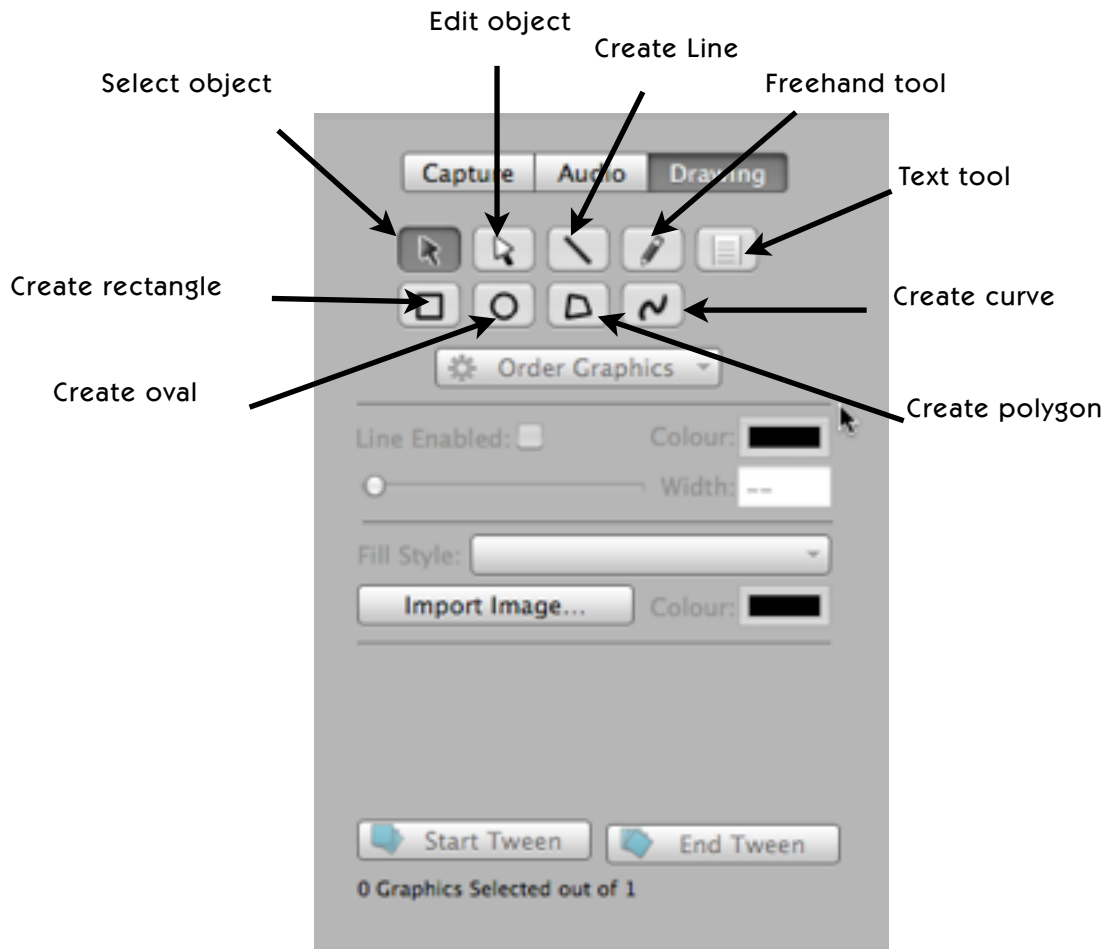
You can only draw into a frame.

This may seem fairly obvious, but when you are starting with a new I Can Animate project there are no frames and you will need to add the appropriate tracks.

You must select a shape, (or a number of shapes), in order to change their Fill Style, Line Colour, Line Width or any of their other properties. You use the Select tool to select objects you have created.

Drawing Tools

The Drawing panel has a number of tools which you use depending on if you want to select, edit, create a new shape or add text.



The currently selected tool in the diagram above is the Select object tool.

Select:

The select tool is used to select, move, resize and delete shapes. To select a shape you must click on the shape or the line of the shape. By holding down the Shift key you can add more than one shape to the selection. Any changes you make will then apply to all the selected shapes. You can also group multiple shapes together. When a shape is selected it's bounds are displayed with a rectangle with a dotted line border around them. The rectangle always encompasses all selected shapes. The small rectangles in each corner can be used to resize the shapes and the rotation handles allow you to rotate your selection.

Edit path:

The Edit path tool allows you to move the individual points that make up a path. You use it in a similar manner to the select tool to select a shape. When the shape is selected, each path point has a small rectangle over it. You can click and drag these points to adjust the shape.

**Create line:**

Select this tool, then click and drag to draw a straight line.

**Freehand tool:**

The Freehand tool allows you to create an arbitrary shaped path. Select this tool, then click and drag to draw a path. When this tool is selected the cursor changes to a pencil.

**Create Rectangle:**

The Create rectangle tool lets you drag out a rectangle. Select this tool, then click and drag to create a rectangle.

**Create oval:**

The Create oval tool lets you drag out an ellipse. Select this tool, then click and drag to create an ellipse.

**Create Polygon:**

This tool allows you to create many sided shapes, it is especially useful for tracing around objects on the captured layer. Click the mouse at the point where you wish to start drawing and then move to the second point and click again. A line will automatically be drawn to connect these two points. Continue moving and clicking until you have the desired shape. If you position the last point very close to the starting point the tool will automatically close the shape. When this tool is selected the cursor changes to a pen.

**Create curve:**

This works in a similar way to the polygon tool except that each time you click in the drawing area a curved line is drawn between the points. When this tool is selected the cursor changes to a pen.

**Text Tool:**

This text tool allows you to add text as objects.



Select the Text tool

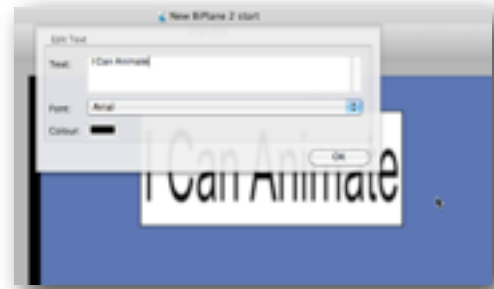


Click and drag out a text box.



- Double click inside the text box and an editing sheet will appear.

Text can be entered and the font face and colour chosen. The text box can then be treated like any other drawn object, resized, coloured, tweened and so on. You can create some very fancy credits to your animations in this way.



Fill Style and Line Colour

You need to select the shape you intend to change by either using the Select or Edit path tool.

The Fill style and Line colour controls will now be enabled and will reflect the current settings on the object.

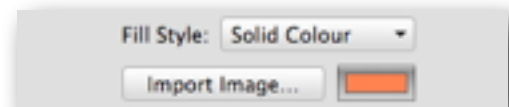
To change the Fill Style

An object can have no fill (None), a solid fill colour or be filled with an image. The image can be one that you import and is added to a list for this project so that it might be used again.

- Select the object you wish to fill.

- From the Fill Style button choose from the drop down list

- If you want a solid colour - select the Colour well and from the colour picker, choose the colour you wish to use. This will be reflected in the colour well. Alternatively if you click on the colour picker tool in the colour palette and then move the tool across into the preview screen and select a colour.



- Fill with an image - select the **Import Image...** button and using the explorer window navigate to and select the image you wish to use. The image will then be used to fill your shape and also be added into the Fill Style list.

- Using an image that has a mask can create some great effects.

Line Width

- Select the shape whose line width you wish to change.

- Either type a value into the text field or use the slider to alter the line width. The value is in points and is limited between 0 and 20.

Resizing and Rotating an Object

Objects can easily be resized and rotated. When an object is selected, a dotted rectangle will appear surrounding it. In each corner of the rectangle will be a small white square known as a handle, and a rotation handle.

To resize the object;

- Click and drag on any of the handles. Holding down the Shift key at the same time will retain the aspect ratio during resizing.

To rotate the object;

- Click and drag on any of the rotation handles.



The object can also be moved by clicking and dragging on it.

Arrange the Order of Objects

As you create and add new objects or images to your drawing you may notice that each new object or image appears on top of any previous one. Try dragging an object that you have just created over one you have previously created. I Can Animate allows re arranging the order :

- Select the object(s) whose order you wish to change.
- Select the **Order Graphics** button from the Drawing tool panel.
- Choose one of the re-ordering options from the list that appears. The re-ordering options are:



Bring to Front



Bring Forward



Send Backward



Send to Back.

The position of the object(s) in the layering order will affect which of these options is available.

Grouping Objects

I Can Animate allows you to group objects and images together. This is very convenient if you have drawn an object which is made up of other objects which you then want to copy or move together.



To group shapes together:

- Select at least two objects or images that you wish to group. To select multiple shapes hold down the Shift key while clicking to select the shapes.
- ☐ **HINT:** Remember if you have added text to your drawing track this can also be selected and treated like any other drawn object.

When objects are grouped, they become one object so that any changes you now make will apply to all objects in the group. If you want to just make a change to one object in the group then you will need to ungroup them first.




Ungrouping Objects

To ungroup a group of objects:

-  Select the group of objects you wish to ungroup.
-  Select Ungroup from the Drawing menu

Deleting Objects









To delete a shape;

-  Select the object you wish to delete
-  Press either the Backspace or Delete key on the keyboard.
-  HINT: Remember if you make a mistake there is always the undo and redo options.

Copy and Pasting Objects

All drawn objects can be copied and pasted from one frame to another and from one clip to another.

Simple copy and paste;

-  Click on a frame in a drawing track, the Drawing tab should now be selected and you have access to the drawing panel.
-  Select the objects you wish to draw.
-  Click in the preview window and draw an object.
-  Click on the Select tool and then on the object you wish to copy in the preview screen. It will become selected.
-  CTRL and C copies the selected object to the clipboard
-  Select the frame that you are going to copy to
-  Click on the preview screen
-  CTRL and V will paste the object to that frame.

Copying over Multiples of Frames

If you require an object to appear in some or all of the frames in your timeline you could of course copy and paste it individually in to each one, time consuming!

I Can Animate allows you to very quickly copy an object to consecutive frames. We can best show this feature by creating a basic ball bouncing animation...



Create a new project



Add a drawing track to the timeline using the **Add Track** button. This track appears in the timeline above the Capture and Audio tracks which are there by default.

Twelve drawing frames will automatically be added.



Using the 'thumb' at the end of the last frames, extend (drag) the number of frames in the timeline to around 60.



Double click on frame 1 in the drawing track in the timeline to activate the Drawing tools.



Use the ellipse tool and the rectangle tool to draw a ball and 'floor', you can colour them if you wish.



Select both objects (Shift and click), note the Start Tween option is now active in the tool panel.



Select **Start Tween** and watch what happens in the timeline.



Scroll through to the slide about half way through your sequence, in this example frame 30, and then click on it to select it.



Using the Edit tool click on the red ball in the preview area and give it a slightly compressed/squashed appearance and then drag it to the floor. Watch what happens in the rest of the frames in the timeline.



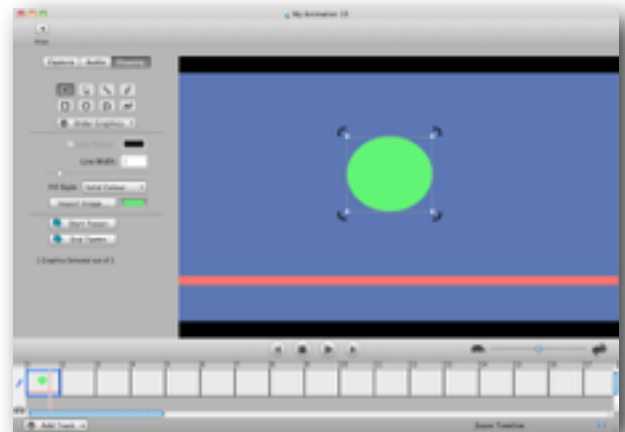
Scroll through to the last frame, and select it in the timeline. Using the Select tool, select the ball and change its shape back to a circle and then move it back up the screen to its starting position.



Select the End Tween button from the tool panel.



Click on the Skip to Start button and then replay your animation.



The demonstration file that you might have already downloaded, Nebula, was created using the automatic copying and tweening feature

See the Nebula demonstration movie...

<http://www.kudlian.net/products/icananimatev2/examples/nebula.html>

Time Lapse

Time Lapse is a technique whereby the frequency at which frames are captured is much lower than that which will be used to play the sequence back. When replayed at normal speed, time appears to be moving faster and thus lapsing.

I Can Animate has a built in Time Lapse facility. This has many useful applications across the curriculum, from watching seeds grow to fruit decaying and filming a sunrise or sunset.

You can only set a time lapse on a single open project.

To use this feature:

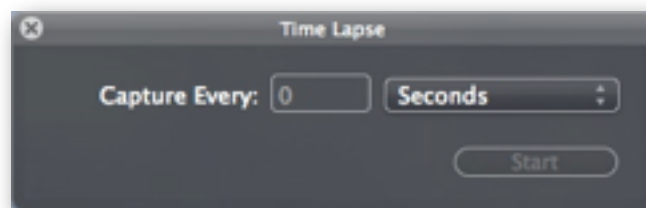


Create a new project.



On the capture screen click on the Tools menu and choose Time Lapse... (⌘T)

This will open the Time lapse screen where you can enter the time interval in the text field and then choose an appropriate time unit to capture over.



Capture times between frames can be as little as 0.1 seconds.

Click on the Start button to start the time lapse. You will be locked out of the other features of I Can Animate during time lapse and the time lapse screen will remain visible until you select the Stop button.

If you do not wish to take any more time lapse then click on the Close button.

The captured frames will be displayed in the timeline. Using the playback buttons you can now review you time lapse.

Increasing or Decreasing the Playback Speed

If you wish to slow or speed up your time lapse clip you can alter the effective frames per second of the clip through the [Timeline panel](#) or use the slider on the right of the Preview screen to alter the playback speed.






Video Backgrounds

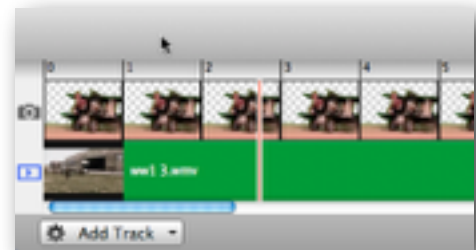
I Can Animate supports adding videos into the background as well as a still image.

If you are intending to use a video as a background track you should be aware that this might have repercussions on the performance of your computer. Your animation files and those that you export may also be quite large.


-  **HINT** - If you are using a video trim it to the required length before importing it into I Can Animate. This will help keep files small.

Imported movie files will be used to replace the chroma key mask in your animation and whilst I Can Animate will try to import all types of movie files, system constraints might prevent certain types being used.

I Can Animate does not display the imported video file frame by frame in the timeline. A key frame is shown at frame 1 and the remaining video is represented as coloured track.



Importing a Video



-  Select the Add Track button and then Video Track... from the list.

An explorer window will open allowing you to browse to the location of your video file.

-  Select the file you wish to use and then **Import**.

The Video track will appear in the timeline.

To see the movie behind your subject you will first need to have captured your animation in front of a chroma key screen.

-  Select the first captured frame in the timeline.
-  The Frame tab should be selected, then select the **Use Chroma Key** checkbox.

You will need to select the Chroma Key colour and then using the sliders, set the Tolerance and smoothing. You should refer to the section on [Chroma Key](#) in this guide for further information.

-  Select all the frames in the timeline and [apply the chroma key](#).

Once the chroma key has been applied the movie will appear in the background of your preview. When you playback your animation the movie will also play in the background. You can use the playhead to scrub through your movie to determine if any of the captured frames require the chroma key tolerance modifying.

On lower specification machines you may find playback is slightly jerky, but your exported movie should play smoothly.

Title Track

Films are generally accompanied by credits and these can appear at both the beginning and end of a production and of course films can have subtitles.

Opening credits are shown at the beginning and list the most important members of the production. They are usually shown as text superimposed on a blank screen or static pictures, or sometimes on top of action in the show. Opening credits usually mention the major actors, guest stars, producers and director, as opposed to closing credits which lists the entire production crew.

Closing credits come at the end of a film and list all the cast and crew involved in the production. They are usually shown on the screen in small characters, which either flip very quickly from page to page, or scroll from bottom to top of the screen, often very quickly. Credits which scroll either left-to-right or up-and-down are also known as rolling credits, which comes from pre digital days when the names were literally on a roll of paper and would pass in front of the camera.

Titles can added to your I Can Animate animation in two ways, they can be created using the [drawing tools](#), as we have already seen, or by adding a Title Track to the timeline.



Select the Add Track button and from the list choose Titles Track



A Title track will be placed above the Capture track in the timeline and is denoted by the Tracks symbol.

Text placed on the title will appear in front of all other tracks during playback

A Titles tool panel also becomes active when the Titles track is selected.



Select the Add a new title button. A tile is inserted at the playhead.



Titles positions can be changed by dragging them in the timeline.



Choose how you want the text to appear, as a Scrolling credit; Centred; as a Subtitle.



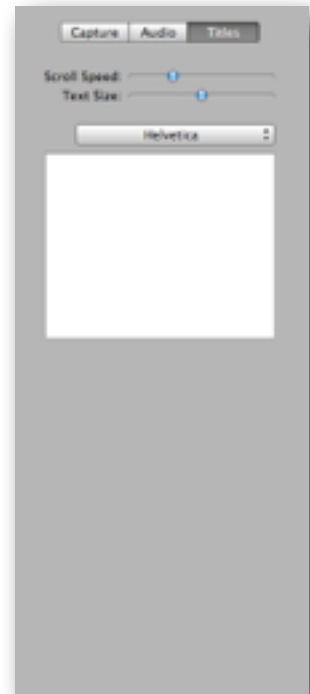
Type in the text you wish to display.



Choose your Font, Colour and Size



If you are unable to see any text in the preview just move the playhead to a position somewhere in the Title track.



The scroll speed can be altered using the slider in the tool panel. If you watch this in the timeline you will see the duration of the track lengthen. If you want more text in the timeline, move the playhead to the point where you wish it to start and click the Add new title button again.

Frame Rates

All types of moving image have what is called a frame rate, this is the number of frames that are displayed each second. In cinema films this is 24 frames per second (fps), but television in the UK and many other countries uses 25 fps. America, Canada, Mexico and Japan have a format called NTSC and this uses 29.97 (nearly 30) fps.

When you are making a movie you need to think about time and how long you want each clip to last. Whether you are working with PAL (25 fps) or NTSC (effectively 30 fps), you will need to think about how many frames are required to produce a clip of a given length in time.

If for example, you want 10 seconds of animation and are working in PAL, that means you would need to capture $25 \times 10 = 250$ frames, (or 300 for NTSC). That's a lot of frames for just 10 seconds.

Professional animators have a technique whereby they are able to cut down the number of movements they need to set up by capturing two frames at once, they then make the movements of the characters twice what they would be normally. If they really want to cut down their workload they can even capture three or four frames at a time, but then the action would appear quite jerky. This is part of a technique called limited animation.

When using a computer, you don't need to keep capturing two, three or four frames, (unless you deliberately want to freeze the image for a moment), instead you only need to capture one frame as we can make the computer do the 'extra work'.

I Can Animate can automatically duplicate your captured frames for you when it exports them, in effect slowing down the action. The number of frames which it duplicates is what is sometimes called the limiting factor. The higher the limiting factor, the slower your action will appear when played back.

So returning to the mathematics of the number of frames you need to capture; for 10 seconds we need $10 \times 25 = 250$ frames when exported, by setting the effective frame rate to 12.5 (using PAL) we only need to capture half as many frames, $250 / 2 = 125$ frames. The 125 frames you capture and I Can Animate plays back and eventually exports, is automatically doubled to recreate the 250, saving you time.

If that is still too many then you can set the effective frames per second using the slider in the bottom right hand corner of the capture screen or Clicking the Clips menu and choosing a *Working in...* value Timeline tools panel to only capture $250 / 3 = 83$ frames (8 per second approximately).

I Can Animate will always capture, working in 2's or 12.5 frames per second (Pal) at half full frame rate by default.

Appendix 1

Training on Animation

Kudlian Software can advise and organise specialist animation training for schools and other groups. Please visit the [Training Academy](#) for more details.

Suppliers of Animation Accessories – UK

Aardman Animations use a clay called Newplast which is available from Kudlian Software Ltd. – <http://www.kudlian.net>

Tel: +44 (0)1926 842544 Fax: +44 (0)1926 843537

Armatures - We can recommend and supply high quality armatures. Check out... <http://www.kudlian.net/products/armatures/>

Reference Books

[Stop Motion, Craft Skills for Model Animation](#) – Susannah Shaw (Publ. Focal Press)

[The Complete Animation Course](#) – Chris Patmore (Publ. Thames & Hudson)

[The Animation Bible!](#) – Maureen Furniss, (Publ. Laurence King)

Making an Animated Film a practical guide - Matt West (Publ. Crowood Press)

[Digital Compositing for Film and Video](#) – Steve Wright (Publ. Focal Press)

Appendix 2 - Terms

PAL

PAL is the predominant video system used in a number of countries as listed below. In PAL, 25 frames are transmitted each second.

Argentina (N) Bangladesh, China, Germany India, Ireland, Jordan, Liberia, Nigeria, Pakistan, South W. Africa, Switzerland, Uganda, Yugoslavia, Austria, Belgium, Denmark, Hong Kong, Indonesia, Israel, Kenya, Malaysia, Norway, Singapore, Sudan, Thailand, United Kingdom Zambia, Australia, Brazil (M), Finland, Iceland, Iraq, Italy, Kuwait, Netherlands, New Guinea, South Africa, Sweden, Turkey, United Arab Emirates.

NTSC

NTSC is the video system used in North America, Japan, most of South America and in the countries listed below. In NTSC, 30 frames are transmitted each second.

Canada, Cuba, Japan, Panama, Puerto Rico, U.S.A, Chile, Dominican Republic, Mexico, Peru, South Korea, Costa Rica, Ecuador, Nicaragua, Philippines, Taiwan.

Wide or Long Shot

A shot showing everything in the scene in full. Good to use as an opening shot.

Medium Shot

A shot that usually shows the characters from around the waist up and can also be used to show parts of the background and objects.

Close up

Shows a character's face but can also be used to show parts of the background and objects.

Zoom

Involves the objects being made to transition smoothly closer or further away. Zooms using the camera should be used 'sparingly'.

Pan

In photography, **panning** refers to the horizontal movement or rotation of a still or video camera, or the scanning of a subject horizontally on video or a display device. Panning a camera results in a motion similar to that of someone shaking their head "no" or of an aircraft performing a yaw rotation.

Track(ing)

The camera moves sideways keeping pace with a character or object that is moving. An example might be a person walking.

Matte

Mattes are used in photography and special effects filmmaking to combine two or more image elements into a single, final image. Usually they are used to combine a foreground image, in this case the characters we are animating, with a background image.

Appendix 3 - Importing

Importing a Windows Project

Projects created with I Can Animate 2 on Windows can be imported into I Can Animate on the Mac.


Whilst I Can Animate will try to import all the components of the file, you might find that some types of sound files and movie files that you have used in your original file will not be imported. This will be down to an incompatibility of the file type and will be an issue that Windows users will also encounter if they are attempting to import files created on a Mac.

You should always get the Capture, Drawing and Title tracks information transferred.

If you do find for example, a movie that you have used as a background track not imported then you will need to either find a compatible version for your computer or, convert the original movie track you have used.


A .wmv file for example, used in a windows project will not transfer over and you would need to convert the movie file to either a .mov or .mp4 file to use it on Mac OS X

To import a Windows project:

 Locate the project on the Windows machine

 By default this should be in the users;

/My Documents/I Can Animate 2 Projects folder.

 Copy this folder to a suitable device, USB memory stick, and then to the I Can Animate folder on your Mac;

~/Movies/I Can Animate 2

The project will now appear in the Projects window.


Importing a Project from iOS

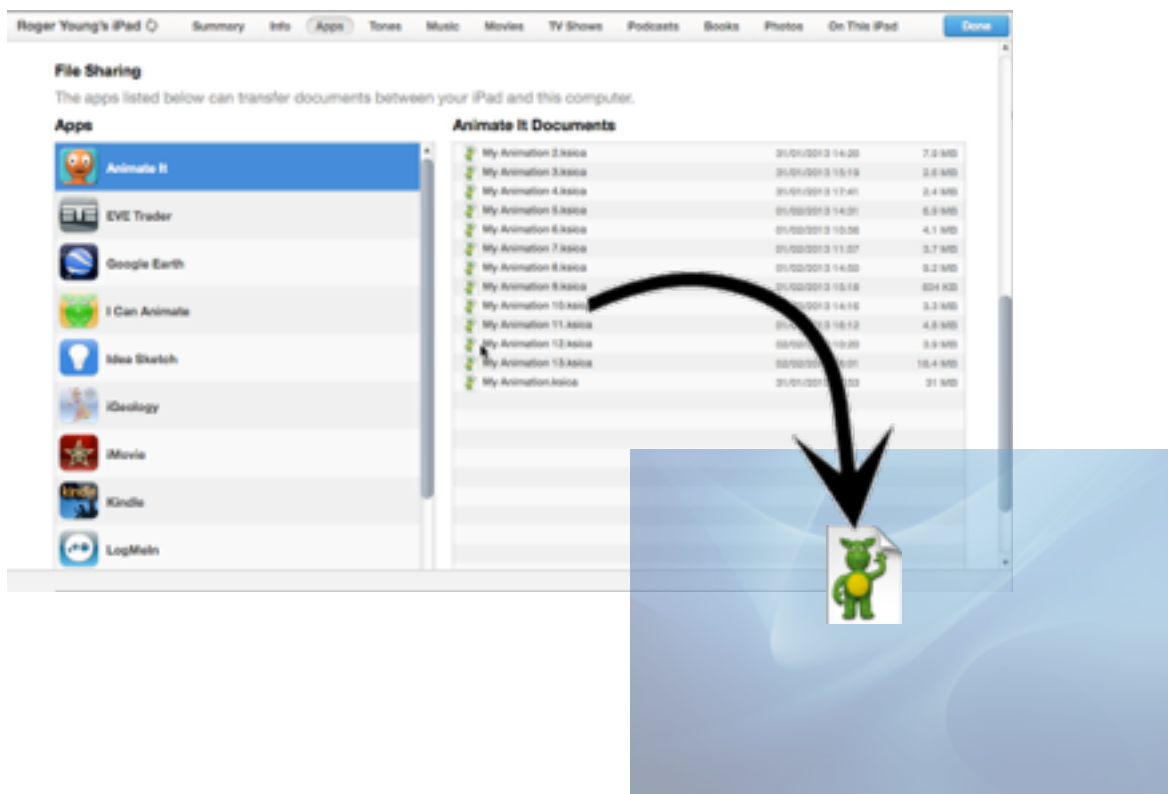
The desktop version of I Can Animate for Mac OS X can also edit projects created on your iOS device, iPod, iPhone, iPad and iPad Mini. When you plug your device into your desktop or laptop computer, iTunes will load.


 On your iOS device, make sure you have exported your project using the Export Project File option on your iOS device.

I Can Animate for iOS supports file sharing which means that when you select the Apps button for your device in iTunes, any projects on the device will appear in the File Sharing display in iTunes.

 Scroll down to the File Sharing window in iTunes


-  Select I Can Animate .If there are any files associated with I Can Animate or Animate It! they will be displayed in the table to the right.



-  Click on the project you wish to transfer to your desktop and drag and drop it onto your desktop.

I Can Animate is designed to import both Animate It! files and I Can Animate files.










The file you download is the same as an I Can Animate 1 file so will need to be imported correctly to use it in I Can Animate 2.

-  Change the [Project versions](#) button in the Clips view of I Can Animate to see the project in the Projects viewer, select it and then select the **Import** button.

The Project can now be edited in I Can Animate 2.

"Quiet Please... Lights, Camera, & Action..."

A Quick start guide to your first animation.

-  Plug in Your Camera. (You'll need a USB webcam or firewire camcorder)
-  Launch I Can Animate from the Applications folder.
-  Position the character you are going to animate in a starting pose, you can check this is correct in the preview window.
-  Click on the Capture button to take your first frame.
-  Use the number keys at the top of the keyboard to capture a further identical eleven frames, you'll now have twelve identical frames. This will give you a 1 second pause.
-  Move your character very slightly and take another single frame. The onion skinning can help you determine the amount of movement.
-  Move your character again, and take another single frame, keep repeating this process until you are happy with your animation.
-  Remember you can review (playback) your animation at any time.
-  When you have finished animating, click on the File menu and choose Export or Share from the list.

HINTS:

Remember you are going to need around twelve frames for every second of animation.

Start your clip with twelve identical frames.

Add a six frame 'pause' at the end of a sequence of movement.

You can review your animation at any time using the play button.

To continue animating ensure that you have the Capture tab selected.

At the end of your animation finish with twelve identical frames.

Your animation has been automatically saved to your I Can Animate Project folder.

Character Sheet

Character Sheet No. _____

What is your
character's name?

Where does your
character live?

Does your character
have a family? List
them.

Who are your characters
friends?

What is your characters
personality like?

What does your character like
to eat and drink?

What does your character
like to do? personality
like?

Is your character afraid of
anything?

What is your character
wearing?

Does your character have
a job and if so what is it?

Does your character have
any pets?

Now turn over and
draw a picture of your
character.

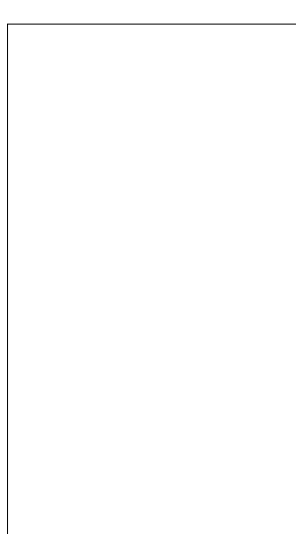
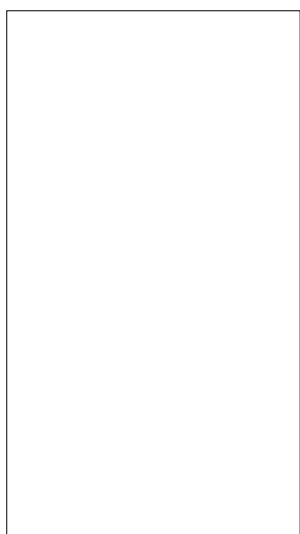
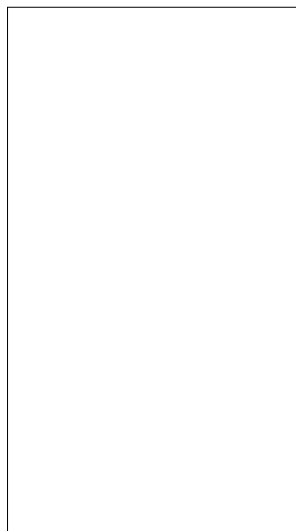
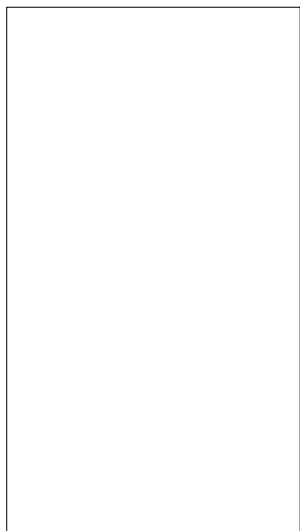
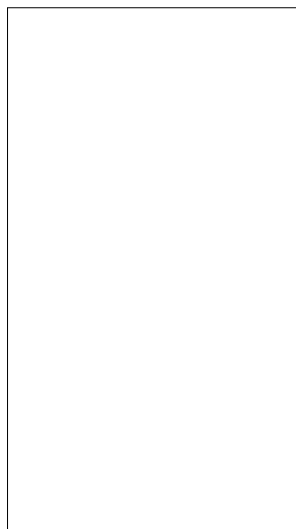
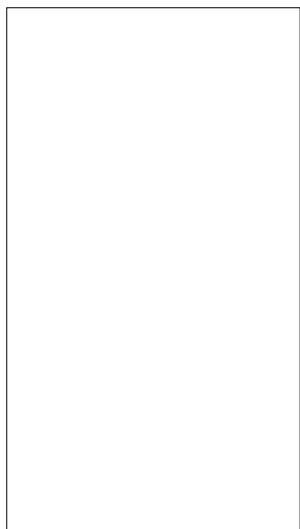
Frame Number	Time increment Min:Sec:Frame	Action/Comment	Sound/ Resource
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
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21			
22			
23			
24			
25			

Storyboard 1



I CAN 2
ANIMATE

I Can Animate Storyboard



Storyboard 2

Name:

Date:

Title:

Scene/Clip:

Directors Notes

Drawings/Pictures

Sounds and effects

--

Duration: _____

--

Duration: _____

--

Duration: _____

--

Duration: _____



Lip Syncing - Mouth Shapes

So you want your characters to talk?

Some of the best loved and most watched children's stop frame animations rely on sounds and suggestion instead of actual speech, Morph, Shaun the Sheep and Timmy Time from world famous animation studios Aardman Animation and of course the Ooglies from BBC Scotland. These animations have world wide appeal not only for their characters and story lines, but also because they do not have to have 'voice overs'.

Any sort of sound syncing can be time consuming and especially so in the case of speech. The mouth shapes below are those most commonly used when forming words. You can visualise how a phrase is going to look by standing in front of a mirror and speak the words you are animating. Pronounce the words distinctly, over emphasising them so that the mouth shapes become clear.

Use the 'dope sheet' to plan which frame needs to show which shape.

Frame Number	Time increment Min:Sec:Frame	Action/Comment	Sound/Resources
1		HE 	He
2		HE	
3		LLO	
4		LLO 	Ho
5		LLO	
6		LLO	
7		LLO	
8		LLO	
9		LLO	
10		LLO	
11		LLO	
12		LLO	
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			

Network Installations

I Can Animate automatically saves projects to the users Movie/I Can Animate folder.

On one of your computers, ensuring that you are logged on with full administrator access rights, install I Can Animate 2.

After installing, run I Can Animate 2 from the Applications folder.

Choose the I Can Animate 2 menu at the top of the screen and select Register Software... from the menu that opens.

Enter your registration details, including the Serial number that you have purchased, and confirm.

The software is now registered.

Step 3: Deploying on your Network

In the normal way for your network, deploy I Can Animate to your client computers.

You will also need to deploy the registration certificate to the correct location on each client computer. The certificate can be found at:

Macintosh HD/Library/Application Support/I Can Animate 2/

The file is called Registration and should not be modified in any way. It should be deployed to the same location on all client machines.