CRAIG LAURIDSEN

Stop Motion
HANDBOOK

using **GarageBand** and **iStopMotion**

acumen

Newtown Movie School

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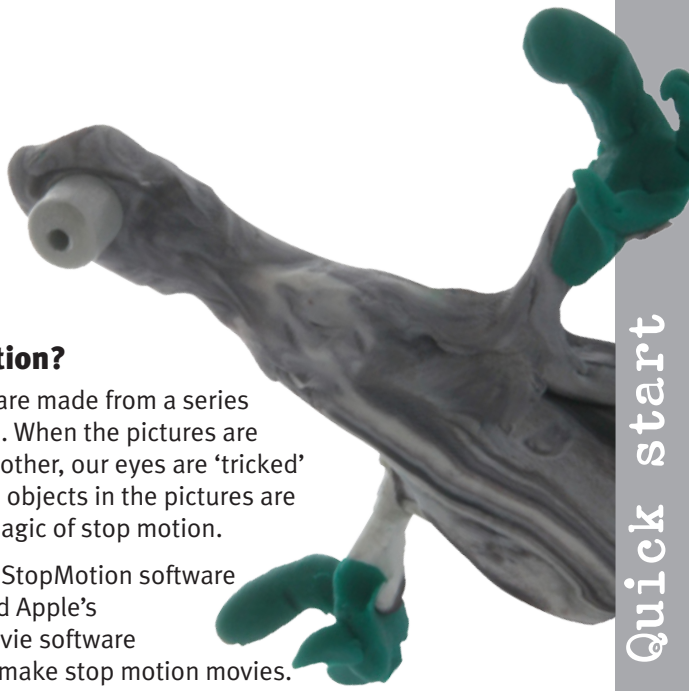

What is stop motion?

Stop motion movies are made from a series of individual pictures. When the pictures are viewed one after the other, our eyes are 'tricked' into thinking that the objects in the pictures are moving. This is the magic of stop motion.

In this book, we use iStopMotion software *(www.boinx.com)* and Apple's GarageBand and iMovie software *(www.apple.com)* to make stop motion movies.

This Quick start chapter is written for those who just want to dive in and get started. If you want more detail, follow the page numbers to the appropriate sections.

This chapter outlines two processes to make stop motion movies:

- writing the script and recording the audio first, and
- recording the pictures first.

The last part of this chapter is a summary of the vital keys for a high quality movie. These are expanded more fully in the rest of this book.

Writing a script

Here is an overview of the process to write a script for a movie.

Step 1: Writing a premise

A story needs to be about something. That something is the premise. It's the central idea, the reason people want to watch the movie. It's often an open question: **'What might happen if...?'**

Movie premises

Bee Movie (2007) – what might happen if bees find out that humans are taking their honey?

High School Musical (2006) – what might happen if someone follows their own dreams instead of dreams other people have for them?

Monsters Inc. (2001) – what might happen if children stop being scared of monsters?

Toy Story 1 (1995) – what might happen if toys come to life when their owner is out of the room?

Groundhog Day (1993) – what might happen if you live the same day over and over again and have the chance to change your choices?

A good premise should be:

- brief – ideally one sentence (maximum 25 words)
- an idea that jumps out at you
- in the present tense.

Sometimes people waste a lot of time trying to improve a story that's not worth telling because the premise is not interesting.

Write down the premise for your movie – "*What might happen if...*"

Tips to develop a story

Watch and learn

You can learn how to write a good story by watching other people's movies – both good and bad. Watch all sorts of movies, not just stop motion ones, and not just your favourite type either.

The story must have a point

The story has to be about something or it will be boring. A common plot is about someone whose life has been interrupted by an event or threat of an event. The story is about how they try to sort it out.

Movies are more successful because they have good stories rather than great special effects.

Choose a hero

Movies should have a hero/ine (also called a protagonist). The hero can be a group of people, an object or a place. They do not always have to be nice, but they should be intriguing.

Make your hero likeable and make their dilemmas something everyone can relate to. Many stories have a hero that the audience would like to be friends with.

Structure your story

Every story needs a beginning, a middle and an end.

When you have more confidence you can mix them up – start your story in the middle and follow it with the end. Then finish by telling the start of the story.

For example, if you start your story with the ending, eg the villain knocks at the door, then tell rest of the story from the beginning so that we can see how the events led up to the villain knocking at the door.

Longer movies often have small side stories to help lead towards the one big story.

Adding loops

Loops are very short pre-recorded beats, rhythms or tunes. GarageBand comes with thousands of loops and you can buy more to extend the range, eg Apple Jam Packs – Voices, Rhythm Section, World Music, Remix Tools, Symphony Orchestra (*www.apple.com*) or *www.bandloops.com*

Loops can be repeated (looped) and combined with other loops to make up a song. Some have a green icon as they are made with synthetic software instruments. Some loops have a blue icon as they are recordings of real instruments.

To add loops:

- Click on the left Loop Browser button 4 (CMD-L)
- In the Loop Browser 5 click on the buttons for the instrument (guitar, keyboard, percussion...), genre (rock, electronic...) and mood (distorted, melodic...). You may have to drag the divider down to reveal all the buttons. The loops that match your description are listed
- Click on a loop to hear it

Sound versus noise

When recording audio, you want a clean, clear recording of the **'sound'** with the least amount of other unwanted sounds – **'noise'**. Every recording will have some noise. These steps help reduce the amount of noise in your recording:

- Find the quietest room you can
- Turn off as many sources of noise as possible, eg hum of computer, tick of wall clock, and turn off your phone
- Shut the doors and windows to block any outside noise. Politely ask people in the next room to keep quiet (don't forget to tell them when they can make a noise again)
- Have actors stand still and not shuffle their feet or rustle their clothes
- Wait until the plane has flown overhead or the neighbour has mown their lawn
- The remaining noise (drone of city traffic or wind in the trees) is the ambient noise you'll need to accept. However, you can **minimise the level of the ambient noise, in relation to the sound level you want to record, by moving the microphone as close as possible to the sound.** For example, if the sound is 1 metre away from the microphone, reducing the distance increases the sound level but does not increase the level of the ambient noises, therefore the noise becomes less noticeable in the recording.

Move closer to the microphone for more sound and less noise

Plasticine – let your imagination run wild

Tips:

- If you want a character to move, use an armature to strengthen the arms and legs
- Where possible, use beads for eyes because they won't lose their shape. The eyes are the 'windows of the soul' and give characters life
- Characters need solid feet and sturdy legs. Aim for a low centre of gravity so the character can easily stand and remain balanced when moving
- Use lightweight objects such as a table tennis ball to give mass to the body without weight.

Here are some examples of stage set ups:

Standard stage with painted background

Paint or create a background design or picture on a sheet of A2-size cardboard. Use any art medium you like. Use an appropriate scale for your characters. You can change the background during your movie to create scene changes.

- Position characters at the front of the stage so the camera focus can separate them from the background (see Make your stop motion movie look like a 'film' on page 81)
- For close-ups, use blocks to raise characters to get a better camera angle or image composition
- Place props on the base of the stage to hide the camera's view of the horizon line – the bottom edge of the background cardboard.

And because a movie is more than one picture, you need to anticipate where your characters will move so that you don't need to constantly move the camera (see Rule 1 on page 103). For example, if a giraffe is to walk onto your stage make sure that you won't cut its head off if your other characters are much shorter.

Look out for dirt and hairs on your sets and characters. Spots of dirt may be small, but when viewed through the camera can look huge. Clean your sets and characters with a cloth and small soft brush, and when working with Plasticine make sure you have clean hands.

The Rule of Thirds

Which of these pictures looks the best?

The picture in the middle has good vertical balance. The character's head is not squashed into the top of the screen, and it is not drowning off the bottom of the screen.

Position the camera so that the character's eyes are one third down the screen and you're a long way towards having a good composition.

In this chapter you will record the pictures for your stop motion movie. You will learn about:

- iStopMotion software
- Recording the pictures
- Making a Lego figure walk
- Making a character talk
- Creating visual effects and recording action sequences
- Avoiding common stop motion mistakes
- Adding a soundtrack
- Adding a background
- Saving your stop motion movie.

Checklist before recording the pictures

- ☐ Soundtrack is complete
- ☐ Tape down all backgrounds, including Lego base boards, so they can't accidentally move
- ☐ Control all lighting sources, including blocking windows, using appropriate artificial lights with diffusers and bounce boards
- ☐ Set camera to manual focus
- ☐ Set all other camera settings such as white balance and exposure
- ☐ Position the camera for good picture composition
- ☐ Clear working area and secure tripod to avoid accidental movement.

iStopMotion

iStopMotion is a great program for helping to produce stop motion movies. The program comes in several versions with different sets of features. This book uses the 'Express' version, although the cheaper 'Home' version will be able to do most of these steps. You'll need the 'Pro' version if you want to make movies with high definition. For more information about iStopMotion go to *www.boinx.com*

The traditional task of editing raw movie footage doesn't exist with stop motion. Each picture is assessed when taken and if it is not suitable another picture is taken immediately. At any point in the process, all pictures should be final. So when the last picture is taken the movie is complete. Where editing is still required, the iStopMotion movie can be opened in iMovie, but this may only be for tasks such as adding a title or credits.

The iStopMotion window

The iStopMotion window has all the controls you'll need to make your stop motion movie.

Making a Lego minifigure walk

The fastest and easiest way to move a Lego minifigure is to jump forward one row at a time. However, the result looks more like a glide than a walk, although this will be suitable for robots. Depending on the walking pace, press the keys 2, 3 or 4 to take several pictures in each position.

Actual step-by-step walking

You can make Lego minifigures actually appear to walk. It takes eight steps for a complete movement of left and right legs:

1. Start with the Lego figure standing still with both legs straight
2. Push the figure away from you and swing the closest leg forward. Stand the figure up again with the closest leg angled forward
3. Rock the figure forward so that it is between rows on the base board – standing on the heel of the front foot, and toe of the back foot. Straighten its back so that the figure is standing tall

4. Rock the figure forward again so that its closest leg is firmly connected to the next row on the base board. The back leg is angled back
5. Pull the figure towards you and swing the back leg forward so that it is standing upright again – ONE step completed
6. Pull the figure towards you and swing the furthest away leg forward. Stand the figure again (opposite action to step 2)

❼ Rock the figure forward so that it is between rows on the base board – standing on the heel of the front foot and toe of the back foot. Straighten its back so that it is standing tall (opposite action to step ❸)

❽ Rock the figure forward again so that the furthest away leg is firmly connected to the next row on the base board. The closest leg is angled back (opposite action to step ❹)

❾ Push the figure away from you and swing the closest leg forward so that it is standing upright again (opposite action to step ❺) and you're back into position ❶ – TWO steps completed. To continue walking repeat the actions from step ❷.

Lego minifigure walk – advanced options

- With each step also move the figure's arms. Swing them in time with the opposite leg
- Move the head. This action may not be rhythmic but might be related to what the figure is looking at as it walks by
- Bend the figure forward at the hips to look like it is running
- Do the moonwalk using these poses from the above steps (for each step press 2 for two copies of the picture):
  - pose ❽, pose ❼, (slide back one space), pose ❼, pose ❻, pose ❹, pose ❸, (slide back one space), pose ❸, pose ❷ and repeat.

Whiteboard artwork

Another very flexible medium for stop motion movies is a whiteboard. It is easy to draw, erase parts of pictures and redraw them to get real animation.

Tips

In addition to all the tips on the previous page, here are tips for successful whiteboard stop motion:

- Whiteboards are highly reflective. Position the camera and whiteboard to avoid glare or reflection. Put a shade over lights for even lighting without reflections
- Wear white clothes to limit reflection
- Clean the whiteboard thoroughly before you start
- Use fresh whiteboard markers with full colour
- Use a cloth to cleanly erase unwanted details. Shadows from previous drawings can ruin the animation and make it look sloppy
- Lay a printed page on the flat surface to set the manual focus. Set the camera's white balance and exposure, then leave the camera and mount alone. Don't bump it
- Add interest by including sequences showing the artist's hand on the artwork as if they were stretching or moving things with their fingers.

For other examples search 'stop motion whiteboard', or 'minilogue/hitchhikers choice' on YouTube, or go to *http://comment.rsablogs.org.uk/videos*

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Perfect for the iPad, iPhone or iPod Touch and other digital readers.

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To order more printed copies or to download the colour EPUB go to *www.acumen.net.nz/pages/NMSSMHandbook.html*

"Stop motion animation has many educational benefits and uses within the classroom, from teaching skills such as teamwork, structural thinking, and planning to providing students with immediate results and instant gratification. Students of all ages quickly learn the simple ins and outs of the software, and are animating within minutes. It is so important to encourage creative thinking within the classroom, and with iStopMotion you can do just that.

The **Stop Motion Handbook** is the perfect way to get acquainted with iStopMotion, from how to write your own storyboard, making clay models, recording the sound, and taking the pictures... Just follow the easy steps and you and your students or children will be animating in no time!"

Oliver Breidenbach, CEO, Boinx Software

Helps push the boundaries of creativity with each project.

Sandra McCallum – Principal

Stop motion gets Year 6-8 boys engaged and excited about learning in the classroom.

Ben Gittos – Teacher

This is such a useful book, full of good ideas and handy hints. I wish it had been around when I was doing stop motion with my class.

Hilary Hague – Teacher

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