Animate and engage!

A guide to creating simple animations

SAFE-T1: www.safe-t1.net.au
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Acknowledgements

The Safe-T1 project team gratefully acknowledge the assistance of:

Dominic Brash

VCAL Teacher, Youth Unit, Faculty of Further Education. Northern Melbourne Institute of TAFE

Adam Whitbread (Producer) Blue Lava

Adam Cooper (Director) Blue Lava

Animate and engage

A fun and productive way to engage students is to help them to create an animation as a group.

Introduction

The students who devised the animation *Lonely Parts Club* were not multimedia students, and had no previous experience or background in animation. Through a series of steps and workshops - incorporating literacy, numeracy and teamwork skills - they discovered the playful work of making plasticine appear to move on the screen in the form of characters.

In the process they worked as a team, discussed ideas, learnt how to write a script, did some tactile modelling and saw their creations come to life. Some of them discovered previously unrecognised talents for sculpting shapes, writing jokes and doing character voices.

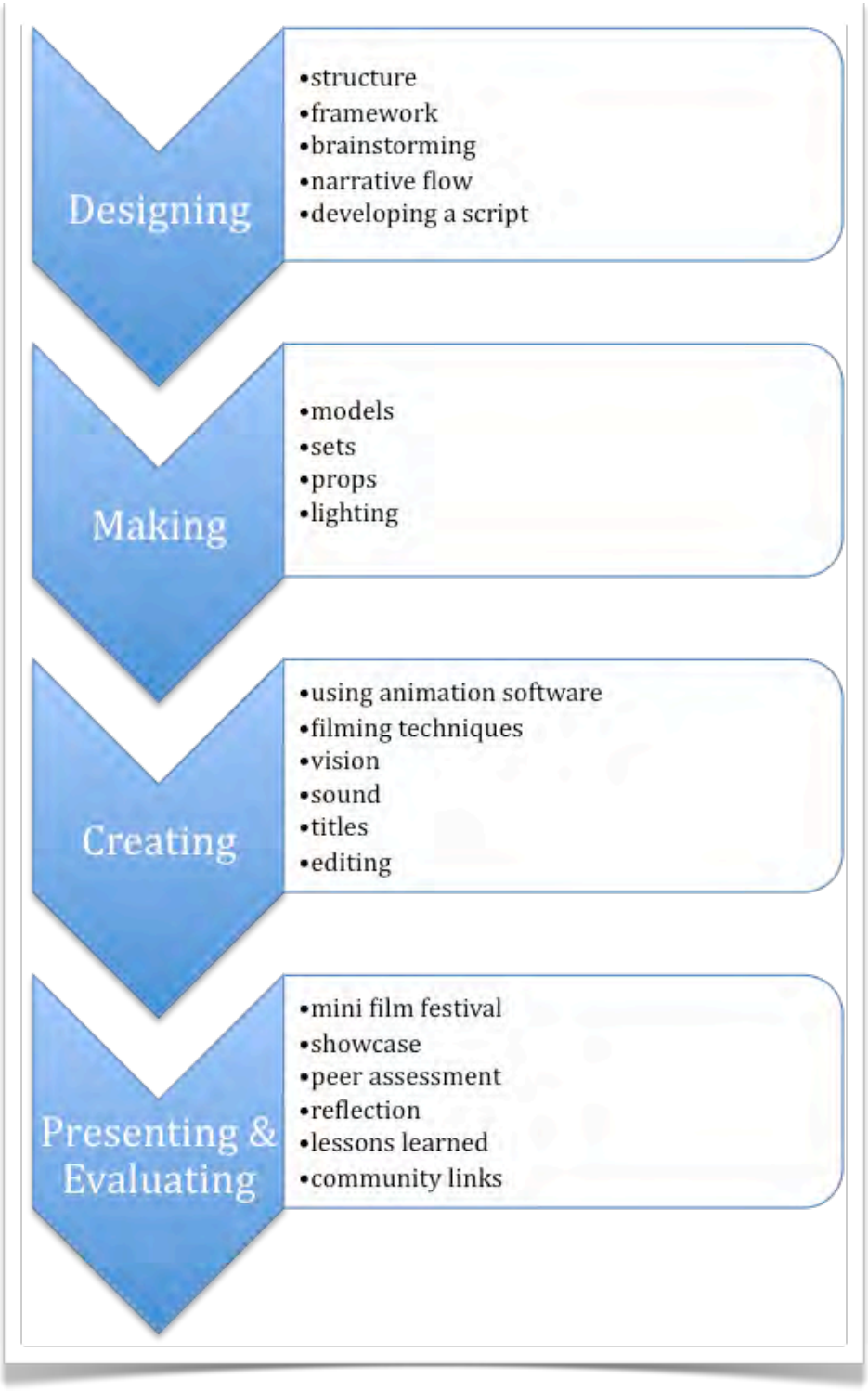
You may not have a background in animation or movie making yourself, but there are many tools and software programs that are free to download, quick to learn and easy to operate. This guide is a broad and brief description of the stages involved and the key tips and tricks to making an animation program work in your classroom.

Context

The student group that participated in this project were enrolled at Northern Metropolitan Institute of TAFE (NMIT). The group of approximately twelve young people were undertaking the Intermediate level of VCAL . In general, they had experienced little success at traditional schools and were reluctant to become involved in what was on offer. Their class was scheduled during a Tuesday when their teacher was able to use a session of between two and four hours devoted to the project. None of the students had any prior experience with animation, and although were not enrolled in a multimedia course as such, the medium of creating a simple film on a given topic addressed many of the required outcomes of their course, across the strands of Literacy, Numeracy and Personal Development Skills .

Stages

Making an animation is not as difficult as you might think, and technical skills are not necessary for most stages of the project. You are only limited by the imaginations of your students- and they can be pretty wild! The product can be quite sophisticated and developed, or very simple. This guide will outline the preparation, resources and skills involved in each stage, and includes a *Tips and Tricks* and *Slips and Trips* sheet for each stage to help you implement a similar project. There is also a glossary included of film terms that may be unfamiliar to you.



Practicalities

Timing

The amount of time allowed for each stage depends on the complexity of the task and the context for the learners. Generally, the making and creating sessions will need to be a minimum of two hours in length, unless the set-up can be left in place for the next session. The animation entitled, *Lonely Parts Club* shown on this site took 2-3 hours per week over a twelve-week semester to develop and produce.

Curriculum links

Curriculum links are shown on page... They are provided as a broad guide only. The generation of evidence to meet specific learning outcomes will depend on the sections of the project you decide to use and the level, experience and background of your student group.

Hard and soft - IT stuff

This project can be completed with a basic set-up but will require some equipment. The minimum requirement would be a laptop (Mac or PC), either with an inbuilt camera or with a webcam attached (these can be purchased relatively cheaply from an electronics store), or a video camera on a tripod if available with connections to the laptop. You will also need a data projector connected to the laptop, and some mechanism for recording a soundtrack, such as a microphone or a mobile phone.

The software used includes:

- word processing e.g. Word
- free animation software e.g. Frame by Frame
- simple editing tools e.g. iMovie
- free sound recording software e.g. Audacity.

Other requirements

You will need a learning space that can be blacked out and a place to store the created objects, set and props. Other requirements such as the materials for creating sets and improvising props are given as suggestions under the heading ‘What you will need’ in the description of each stage.

Making friends

Before you begin, make sure you are friends with the IT crowd, the woodworking department and the literacy or English teacher. These people can all support and help you make this project happen. If they are in on it from the beginning, things will go much more smoothly.

Stage 1 Designing

Introduction

Students may feel doubtful about their ability to complete this kind of project (and so might you!) so be sure to introduce it positively and with confidence in your ability as a group to find out and successfully complete an animation together. The key part of this stage is to get enthusiasm and momentum generated so they can get through it and onto the more tactile areas of the work. This is very much a brainstorming session to get ideas flowing, but be careful to restrict the topic and the length of the proposed animation for most successful results. A 5 to 10 minute animation is good to aim for and will take a great deal of planning and filming.

Who? What? Why?

Giving students a particular focus for the animation will help them - too much choice can slow the project down. In this case, the students were given clear parameters - the topic had to be safety at work for young people. This helped them identify the audience (Who is it for?) and the purpose (Why are we making this?). Give your students a current situation either within the school or community that provides a key message that the animation could focus on. This group of students decided to have the body parts that have been cut off in work accidents assemble at a disco and tell their stories. This enabled the teacher to draw on their knowledge of sayings that include body parts; for example, *You are brainless! I need a shoulder to cry on! Don't lose your head!* and so on. These sayings became the basis for the script and helped create the scenes and the dialogue.

You will need

Narrative outline

Storyboard template - see Appendix for a sample
Go to Activity Sheet 7 of *Ads across the airways* http://www.safe-t1.net.au/index.php?id=249 .for more information on using storyboards

Sample script or script format e.g. Neighbours script available from http://perfectblend.net/reference/script/

Butchers paper/ flip chart

Patience & diplomacy

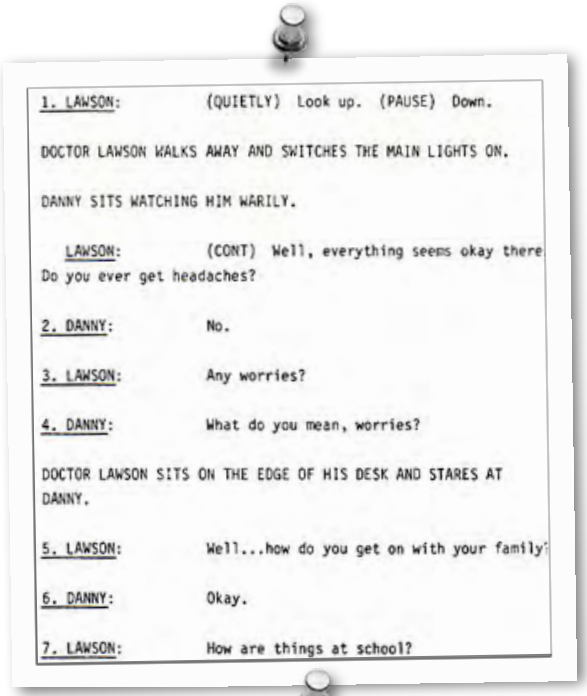
Stage 1. Instructions Getting started

- Introduce the fun idea of making an animation in the classroom - as a group.
- Explain how you will be assessing the project.
- Establish parameters of What - the purpose and Who - the audience.
- Remind the group of narrative principles: for example, establishment; conflict-resolution.
- Choose a genre-style-format; for example; mockumentary, fairy tale, fable, advertisement.
- Brainstorm ideas in small groups or as a larger group.
- Select one idea to work with by group consensus.
- Come up with a setting (one) and simple story line.
- Use a storyboard to frame the action.

Writing it up

- Develop some fun dialogue or scene ideas around the story. This can be done in small groups and written roughly onto butchers paper.
- Create a character list (there should be as many characters as there are students - maybe more but not less).
- Show the group some sample scripts.
- Model script writing on white board.
- Delegate groups to write a scene each (depending on level of confidence).
- Discuss character modelling, ideas for sets and stuff that might need to be sourced to prepare for Stage 2.
- Delegate responsibilities for different areas to student leaders (set, props, music, model making, voice coach).

Stage 1 Tips & tricks



1. LAWSON: (QUIETLY) Look up. (PAUSE) Down.

DOCTOR LAWSON WALKS AWAY AND SWITCHES THE MAIN LIGHTS ON.

DANNY SITS WATCHING HIM WARILY.

LAWSON: (CONT) Well, everything seems okay there. Do you ever get headaches?

2. DANNY: No.

3. LAWSON: Any worries?

4. DANNY: What do you mean, worries?

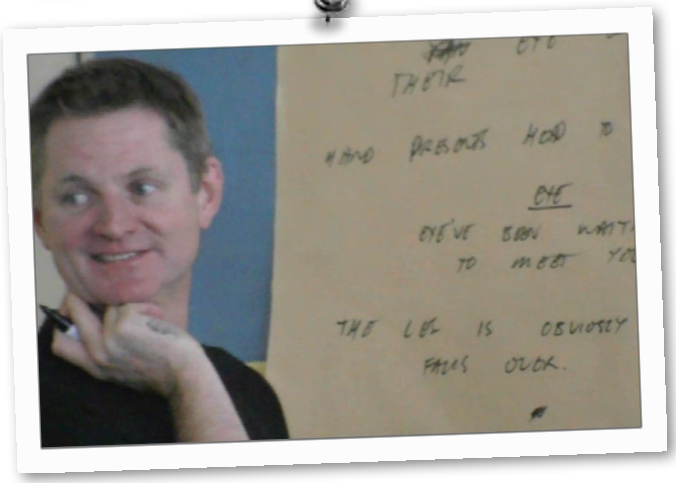
DOCTOR LAWSON SITS ON THE EDGE OF HIS DESK AND STARES AT DANNY.

5. LAWSON: Well...how do you get on with your family?

6. DANNY: Okay.

7. LAWSON: How are things at school?

Give samples of what a script looks like by using one from a popular show such as Neighbours.



Encourage the group to work together by writing their ideas up on ONE sheet that can be typed up later.

SFX: Ambulance siren

HAND opens the door as the ambulance arrives

Ambulance doors open and the **HEAD** rolls out

The **HEAD** rolls down red carpet towards the crowd

Everyone stops and looks – awkward silence –

HAND

I'd like to introduce a new men
together – if you can) – **Head**.

Students can take turns to type up sections of script.

Stage 1 Slips & trips

Don't show a sophisticated (or even a simple) example of other animations at this stage -it will be counter productive.

Keep a record of each stage of the process - rough worksheets, photos and drafts - and display these around the room as you go so progress is visible.

Don't let this stage drag out too long - the key purpose is to get a story outline and a character list.

Stage 2 Making

The fun bit!

Most characters for this kind of animation are made out of plasticine because it is cheap, easy to use, and the models can be manipulated during the filming process. At this stage students start to see something happening, even though they may not yet be able to visualise how these characters will 'move'. Preparation for 'hands-on' modelling such as plasticine proofing the floor and providing a good range of colours is the key to success. By sitting around one big table, students can assist each other and see how others approach this task.

Creating characters

Each student should have at least one character that they are responsible for. Modelling a particular character can lead to an attachment or ownership of that character which will help the continuation of the project.

Building the set

Creation of the set depends a great deal on the setting for the story. In general however, it needs to have three removable walls that can be supported, and a base that can be decorated. The best size is about 1 x 2 metres to enable the characters some range of movement, and it needs to be set up at table height as the students will be standing and bending over it for long periods and back ache can result from this. Access to power is necessary for the laptop, camera and lights.

You will need

Plasticine

Plastic modelling tools such as picnic knives and forks or play dough tools

Paper towel & cleaning materials

Vegetable oil

Drop sheets

Photos of animals or objects that are to be modelled

Laminated instruction sheets (optional)

Materials for set - could be chipboard, thick cardboard or laminex - needs to be freestanding and able to be moved easily

Stage 2 Instructions Creating with clay

- Set up the room so students can work at one large table if possible.
- Set out tools and plasticine.

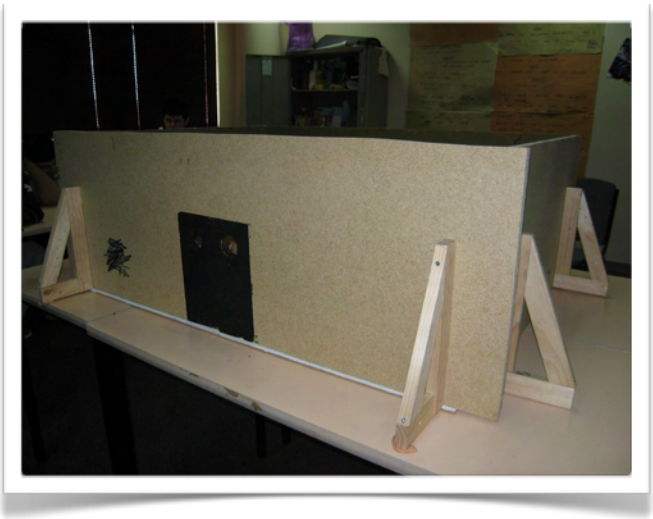
Teaching point: This session works best through a clear use of the phases of instruction. These are included in the instructions below.

- *Orientate* -by the end of this session all the characters will be made.
- *Activate prior learning* - who has played with play dough or some such before?
- *Demonstrate slowly* in small steps e.g. rolling a thin line, creating an orb, making features by adding other colours, making sure colours don't get mixed together (result is mud coloured plasticine).
- *Guided practice* - students practice each step under supervision; all students receive positive feedback.
- *Corrections and feedback* -provide process feedback to hesitant learners and sustaining feedback clues and reteaching where required.
- *Independent practice* with active supervision.
- *Review* - a chance to admire each others' handiwork.

Considerations

During the modelling session it is useful to steer the conversation around the relative sizes of the characters to each other and to talk about how the students picture the animation working.

If the models cannot be completed in one session they can be stored until the next time. Note: the oil is used to create a smooth surface on the models at the end of the process.



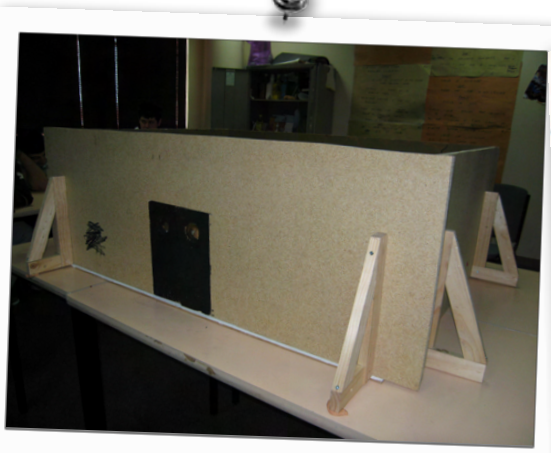
Set design

Building the set may need particular tools, skills and talents depending on the kind of setting demanded by the script. In a fairytale for instance, a plastic doll sized castle might be used. All members of the team can source props or create parts of the set from found objects. The set in this case was built from chipboard in a 1m x 0.7metre rectangle. Each wall had its own support triangle behind it and could be removed if necessary to allow the camera to take a picture from any side of the 'room'.

Work with your art department, woodwork or other trades areas to maximise the possibilities. Assure them their names will be on the credits!

Stage 2 Tips & tricks

Make sure figures have the ability to move in some way - to bend, roll or twist so that they can 'move' in the animation.



Invite the woodwork or carpentry department to be part of the project & help with the set!

Put figures beside each other to see proportions and try to imagine how characters will interact.

Stage 2 Slips & trips

Include ALL models whether expert or beginner - there will be variation in appearance.

Keep everyone fully occupied - plasticine throwing fights are a temptation.

Think ahead how you might deal with creative responses to the topic.

Stage 3 Creating

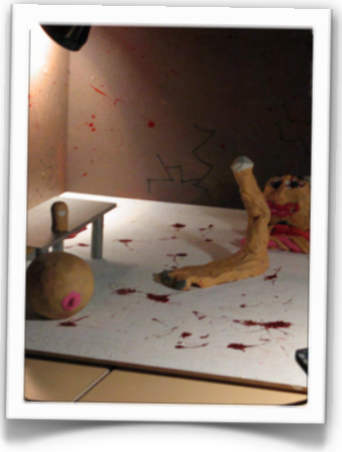
Filming at last!

This is where students begin to see how the film will look. Make sure you do the first part as a whole group, even though only three team members at a time will be involved in capturing the images. Completing a very short sequence and then playing it back and adding voices and possibly music will help them see how the process will work. They need to be very engaged at this point as this section takes patience and persistence.

Appreciating the genre

After students have experienced their first 'go' they will be more appreciative of the efforts of others and realise the work behind the scenes. This could be a chance to show them the animation made by other students, available on the Safe-T1 website (Lonely Parts Club) and to have a short discussion about how it was made.

Working in teams



This stage requires teams of three or four - two people to move the characters, one to direct by telling the camera operator when to take the shot and a camera operator. This is only interesting for the people actually involved in doing the work, so plan ahead and make sure the rest of the group has other work to go on with. This could be designing the credits, composing the music or other work unrelated to this project. Teams should rotate after each sequence is finished to prevent boredom and make sure everyone has a turn at the different roles.

You will need

Blackout curtains for the room

Lights- for example table lamps with high wattage globes X 3

Digital camera, film camera or webcam

Tripod

Laptop or computer

Data projector

Capturing software- see resources page in Appendix

Editing software - see resources page in Appendix

Recording device such as inbuilt microphone

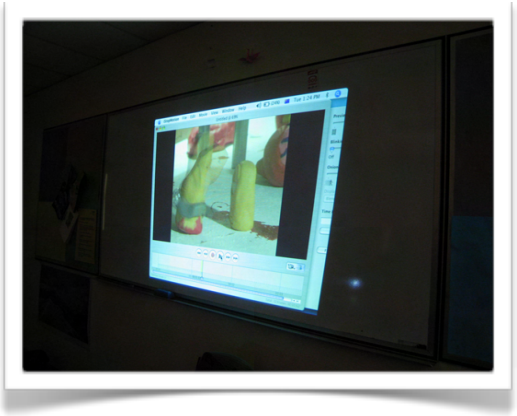
Stage 3 Assets

Using a shared language will help the group understand how the film is put togther and what part they are respinsible for. You could create teams who are ultimately responsible for each asset. This table shows the three elements of a film that are collectivley known as assets.

Image	Sound	Text
Captured stills from camera (shots)	Music	Titles
Editing process to shorten or lengthen shots	Character voices Narration	Credits
Sequence of scenes	Sound effects	Sub-titles

Teaching point: Remind students about group skills and teamwork before you start- the group may need this if conflict arises.

Stage 3 Technical instructions

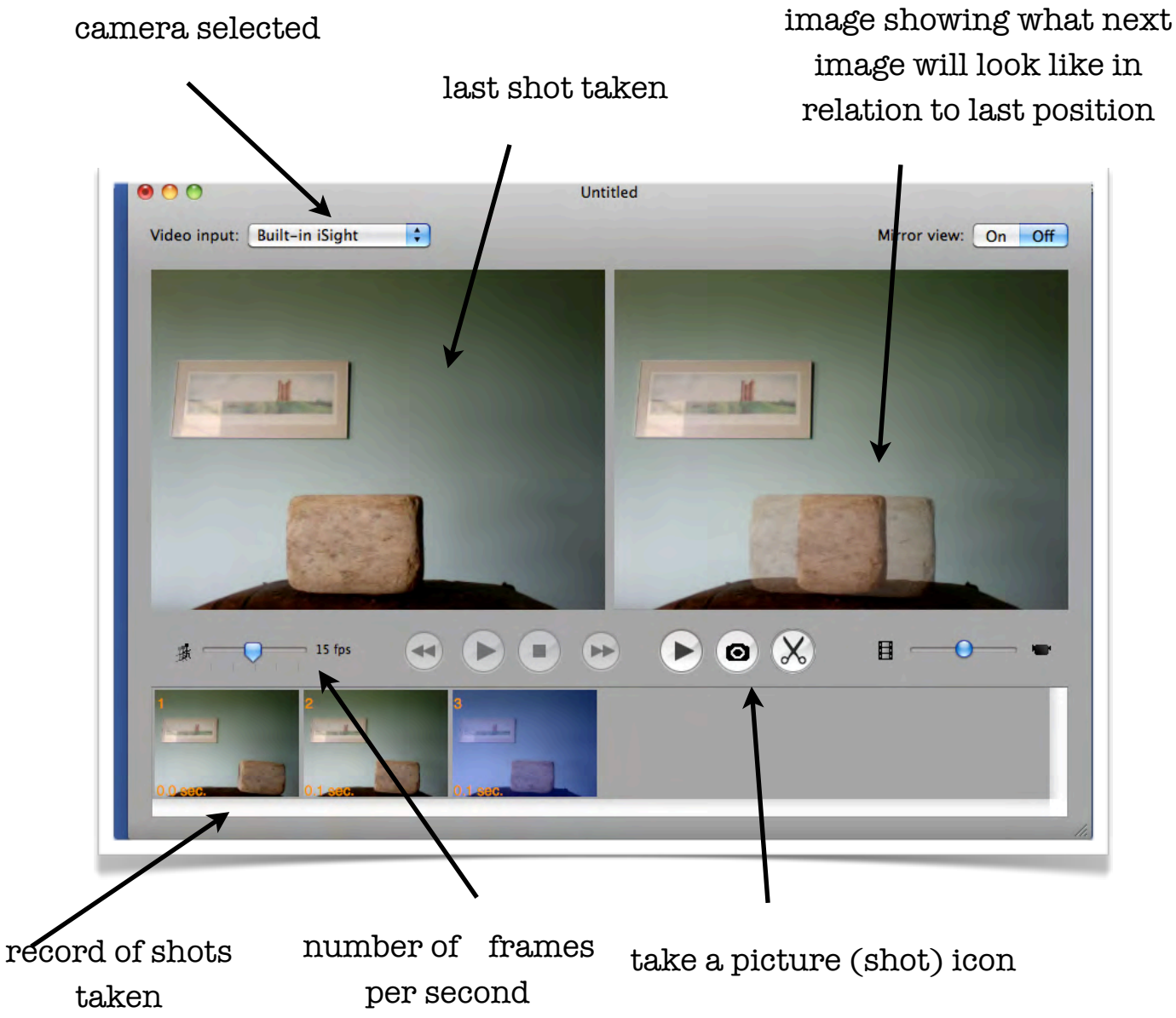


- Mount the camera on a tripod to prevent any movement. The camera needs to be focused on the set so that the desired picture fills the whole frame.
- Connect the camera and the data projector to the laptop and open the animation software. This means that a larger image of the work is shown so that the whole group can see the progress of the work and learn from the first attempts.
- Explain that most stop motion films are filmed at 25 frames a second. It is best to work in at least 15 frames per second for this project.

To see a ”how to“ movie of this step, that explains more about frames, enter the topic *How to make a clay animation* at www.youtube.com

Stage 3 Part 1 Capturing

- Capturing the images means taking still shots of the characters in their poses and storing these images in the computer in sequence. Most software programs that help you do this will enable you to take a picture with the connected camera whenever the spacebar is touched.
- The software will generally display two images on your computer screen . These might be side by side (mirroring) or appear as a shadow on the one screen. The reason for this is that you need to be able to see how far to move the model before taking the next shot, and the software helps you do that by showing the last picture you took, and what the next picture you take will look like. See the screen shot on the next page for a visual explanation. The software used for the example was Frame by Frame on a Mac computer.



- One way to make this work with students is to call for a volunteer who likes to tell people what to do. This person will have the role of Director. The other roles are Camera and Action-makers (2-3 depending on characters and script). A description of the roles follows.

Director: keeps an eye on the image being created and the image in the camera. Tells the camera person when to take the shot by giving a pre-arranged signal, (traditionally 'Action!').

Camera: waits for directions from director. In charge of the camera, lights and the controls at the laptop. If someone's hand is in shot the camera person may have to delete that image.

Action makers: move the models in the required way according to the script and the director's instructions. They are responsible for ensuring that they remove their hands from the set as quickly as possible after each change.

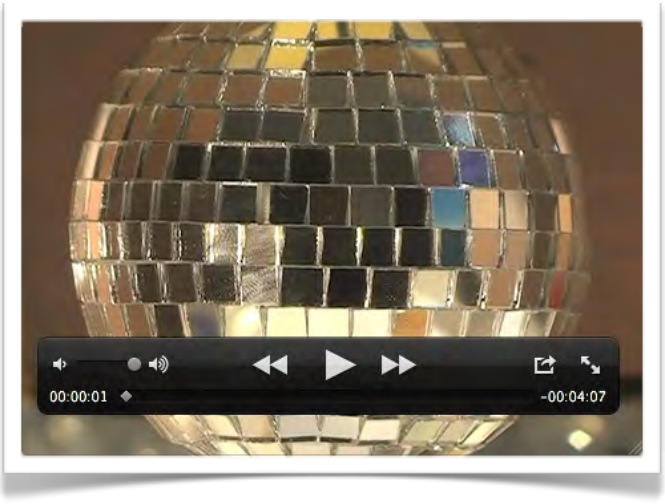
- All the raw footage or sequences of images will need to be captured in this way, saved and exported from the capturing software to the editing software before proceeding to the next step of editing.

Stage 3 Part 2 Edit

- Editing is the process of cutting and pasting sequences together to help tell the story the best way. Editing software will allow the editor to select a sequence and make it shorter or longer, and by selecting and moving it, change the order in which it will be viewed.
- Allow your student editors time to 'play' with the software package you are using, perhaps with a copy of the original work so mistakes will not mean lost or damaged footage. Hopefully, if the script has been followed as much as possible, hours of editing will not be required.
- Adding sound, voices and effects is also part of the editing process. To record the voices of the characters, students will need to be able to watch the animation sequences a few times after they have been edited into the right order. This will help them get a feel for the speed and timing of this delivery. Recording works best if it happens as the vision is playing.
- Any software that enables the recording to be converted into an mp3 file will mean it can be added into the editing software and matched to the correct section of the film. It is advisable to use original music where possible, for reasons of copyright law, but also as an extra area for creative input. Narration, sound effects and transitions from one scene to another are all areas that can be the responsibility of teams, just as in the film industry.

Stage 3 Part 3 Credits

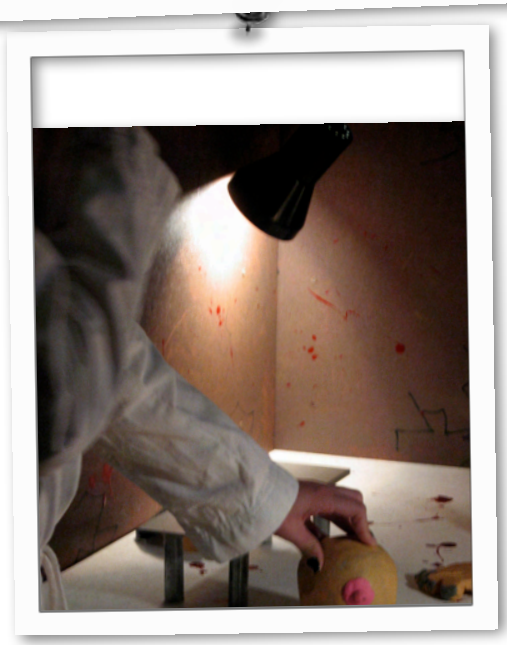
- The opening titles and closing credits are important and a particular area where spelling and titles of organisations must be correct.
- Once again, the post production phase will require small group or teamwork, depending on how many characters are on screen at one time. The beginning and end credits contribute to the way a film is received and the mood of the audience. Watch some sample credits from block busters to start discussion.
- The credits can also be animated using paper cut outs and often students who are not interested in the clay will find this challenge more to their liking.
- See the SafeT1 animation for inspiration. Other examples are available on youtube including Breakdance Claymation (14 secs) .
- The last thing to do is convert, export or save your film to a format that can be watched or opened on many computers, such as Quicktime (see example to the right).



Stage 3 Tips & tricks

Divide the group into teams of three to five for best results. Other groups can work on the credits using paper animation.

Show the small team of three the section they have done so far - it's the best feedback!



Encourage experimentation by using rolling, twisting and turning movements to see what effects can be produced.

Stage 3 Slips & trips

Watch out for shadows cast by the lighting before you start - it will look odd if the light has to be moved halfway

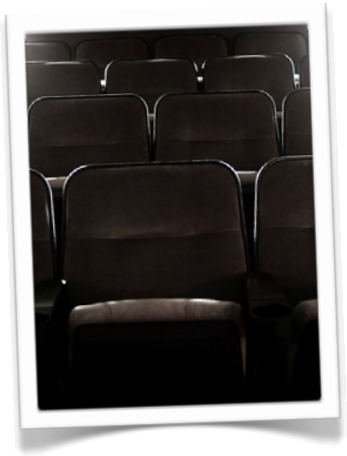
Make sure all filmmakers are aware of each others' movements -hands in the shot means that shot can't be used.

The director's word is law! (Just like Hollywood!) Watch out for abuse of power -it can go to the head!

Stage 4 Presenting & evaluating

Sharing

Once the film is finished, it is time to share it with an audience. Being short, it may be able to be part of a larger focus such as a expo, or a parent, teacher, student conversation night. Celebrating the end of the project is important no matter how you organise it, and enables students to feel a sense of achievement. If you have kept a record of their progress (which is also useful evidence for assessment), it can form part of an overall display about the project.



Film festival

You could create a mini film festival within the school. The Armed and Dangerous section of the St Kilda Film Festival showcases works from young filmmakers and these are available from http://www.armed-and-dangerous.tv/home.html

Using a selection of these and your students' work could make your festival an instant hit - especially if the students are in charge of organising it.

Peer evaluation

Even if you are showing the film to the class, make sure that this is a time when students can practise their skills in giving positive feedback to each other.

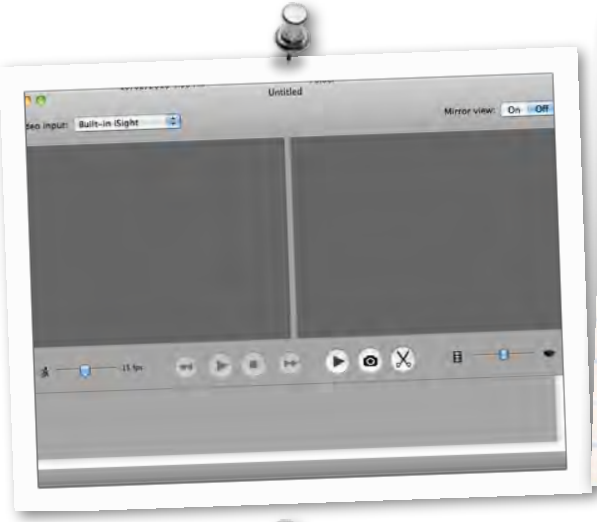
Stage 4 Instructions - Sharing

- Organise for student work to have recognition within the school.
- Create varied opportunities for the film to be seen.
- Use collected evidence to create a digital story. It could be a behind the scenes look at the making of the animation.
- Negotiate with the group about what level of public access they feel comfortable with.

Feeding back

- Enable positive and supportive feedback by reminding students of ways of communicating this, or assisting them with stem sentences such as: *I noticed that you did a great job when you* ...or *One thing that worked well was...*
- Encourage students to build on what they have done here to go on to a more complex task.
- Explicitly connect the skills developed here with how these might be used in other classes or on other projects.

Stage 4 Tips & tricks



Inform your audience about the technicalities of what they are about to view so they can appreciate the work behind the scenes.

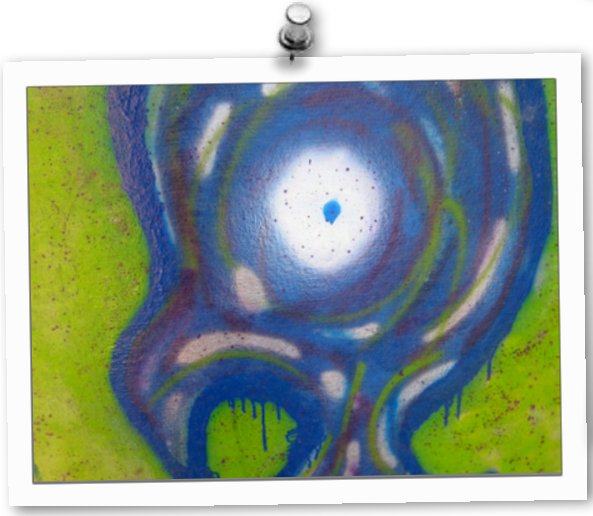
Include the work of other students from different programs to create a mini festival.

If the group agrees, upload your work to youtube or teachertube.

Stage 4 Slips & trips

Be aware of situations where peer feedback may be negative and avert them.

Don't try to do too much the first time - an in class viewing with a small food based celebration may be enough.



Leave the door open for future projects - hopefully student inspired and led!

Assessment and curriculum alignment

The activities in this unit are designed to support student learning but may also be used for assessment purposes. The activities support the learning outcomes listed in the table below but may not cover all the elements. If the activities are to be used as assessment tasks, teachers should check the relevant curriculum document, e.g. the VCAL Curriculum Planning Guides, to ensure all the elements are covered and the activity is consistent with the unit purpose statement.

While documentation from undertaking the activities in this unit can be collected to build a portfolio of evidence to be used for the assessment of relevant learning outcomes, students will need to demonstrate competence of a learning outcome on more than one occasion and, wherever possible, in different contexts, to ensure the assessment is consistent, fair and equitable.

Stage	VELS	VCAL	E5
1 Design Narrative Writing in different formats	Interpersonal development Communication English	Literacy PDS	Engage Explore
2 Make Discussion Measurement	Interpersonal development Communication English	Literacy Numeracy PDS	Explore
3 Create Communicate	Interpersonal development Communication Teamwork	Literacy PDS	Elaborate
4 Present Explain Organise	English	Literacy PDS	Explain Evaluate

Appendix

Capture and Editing Software for Macs

- Framebyframe is free and simple capture software to use with a webcam or a digital still camera

www.framebyframe.com

- iStopMotion (demo download/shareware/or purchase) is capture software to use with a webcam.

http://www.istopmotion.com/

- iMovie is editing software for editing and adding music and voice-overs -comes as included software with Mac computers

http://www.apple.com/imovie/

Capture and Editing Software for Windows

- Stop Motion Animator is free capture software to use with a webcam

http://www.clayanimator.com/english/stop_motion_animator.html

- Windows Movie Maker (works with Windows XP) is editing software for editing video, adding music and voice-overs

http://www.microsoft.com/windowsxp/moviemaker/

- GIF Construction Set Profession is animation software to use with a digital still camera - available for purchase - more complex

http://www.mindworkshop.com/alchemy/gifcon.html

Sample storyboard template

Storyboard Name	Client		Title	
	Spot		Job #	

Shot 1:
Music:

Shot 2:
SFX:

Shot 3:
Music:

Shot 4:
Music:

Shot 5:
SFX:

Shot 6:
Music:

Glossary

Term	Description
animation	The process of creating the illusion of motion by creating individual frames, as opposed to filming naturally-occurring action at a regular frame rate.
assets	Image, sound and written information contained in a film.
claymation	Animation of models constructed from clay or plasticine.
cut	A change in either camera angle or placement, location, or time. "Cut" is called during filming to indicate that the current take is over.
directing animator	The animator responsible for creating the key poses or key frames of an animation.
editor	A person who performs editing (in consultation with the director) on a movie. This term usually refers to someone who does visual editing.
fade fade to black, fade in, fade out	A smooth, gradual transition from a normal image to complete blackness (fade out), or the opposite (fade in).
frame rate Frames Per Second FPS	Movies are created by taking a rapid sequence of still pictures (frames) of action. By displaying these frames at the same rate at which they were recorded, the illusion of motion is created. *Frame Rate* is the number of frames captured or projected per second. The human eye can only capture pictures 18-20 times per second; so having a faster frame rate than this deceives the eye into seeing motion. Most modern motion pictures are filmed and displayed at 24 fps.
FX	Effects- shorthand used to show sound or visual effects on a script
PAL Phase Alternating Line	The standard for TV/video display in Australia which delivers 625 lines of resolution at 50 half-frames per second.
prop	Anything an actor touches or uses on the set; e.g. phones, guns, cutlery, etc. Movie animals and all food seen or eaten on set/screen are also props.
scene	A continuous block of storytelling either set in a single location or following a particular character. The end of a scene is usually marked by a change in location, style, or time.
screen ratio or aspect	A measure of the relative sizes of the horizontal and vertical components of an image.
script	A general term for a written work with details of the story, setting, and dialogue.
set	An environment used for filming. It can be artificially constructed to make filming easier but still appear natural when viewed from the camera angle.
stop motion	A form of animation in which objects are filmed frame-by-frame and altered slightly in between each frame.
sound effects sound FX	Sounds added or highlighted in a film to create an atmosphere
visual effects visual FX	Alterations to a film's images during post-production.