

Let's Make a Movie!

Did you or your students ever want to make a movie? Here is an outline of the movie making process and equipment needed. This process was completed over three weeks (15 days) with 1.5 hours a day contact time. This includes a day for school/ community presentations as well as one to three days cushion for unexpected school wide schedule changes (unexpected assemblies, snow days, late starts, etc.). While it is not possible to include every detail of the process, any teacher who is comfortable with project-based learning will be able to resolve most issues that arise.

This process was used successfully with 4th and 5th graders in Taos, NM public schools. Although the better products came from 5th graders, with appropriate props and backdrops 4th graders can be just as successful. The younger students will need more help in focus, design and getting others to “see” their imaginative products as they do.

Before introducing the project, be sure there are permissions for all students involved to appear in the film. When finished, the movies can be uploaded to DropBox.com, YouTube (and other social sites) and tweeted out to the world and/or shown to your school and community. Copies of DVD's can be created and handed out to Board members, principals, teachers and parents. Charging \$3 per DVD can assist in raising \$ for future film projects.

Producing a movie consists of three basic parts: Pre-Production, Production, and Post-Production. These are not necessarily exclusive to one another. Often in the final stages, something will be thought of or discovered that requires a second visit to the Production phase that resolves an issue or creates a new scene that propels the story in a more emphatic or clearer way than before. Be prepared to move between the three stages until the deadline is too close that changes jeopardize the project's completion.

Pre-Production:

The Pre-Production process is critical to the focus and success of the movie. Sometimes students spend two days or more coming up with their topic(s) and then fine tuning the focus. The process is not an easy one, but is key to success. Often students don't get why they should narrow the focus. Sometimes, the focus is split and two distinct messages get combined. For example, “Don't Drink and Drive” by 5th graders also included “Don't Drink Underage.” This could have been anticipated when thinking that 10/11 year-olds were the actors.....but didn't arise in one specific film until the final editing was nearly completed. Luckily, we were able to include a clip of a student saying “Don't Drink Underage!” and that brought the two topics together as well as they could have been.

This first process is also where students come up with the names of their production companies. As they brainstorm topics, identify concerns, and by consensus determine the topic they want to work with, the production company name will be easier to select as it will often reflect the topic itself. “Paws Productions” made a movie on animal abuse. “Dos Mundos (Two Worlds) Productions” created a movie about how immigration laws affect children in their movie, “Families and Borders.”

Pre-Production: The Story Board

Detailing the scenes of their movies is the next step of Pre-Production, and centers around the storyboard, props and shot locations. Some students will belabor the drawings, but the emphasis should be on simple stick figures rather than detailed art work.

The Shots

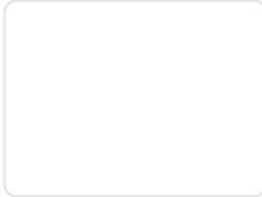
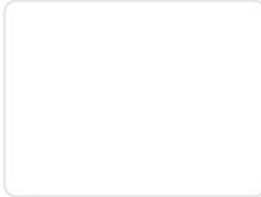
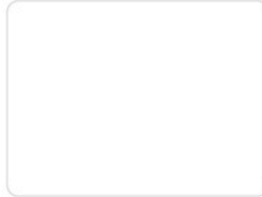
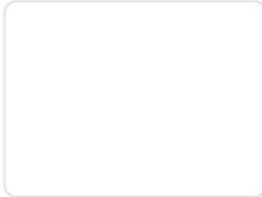
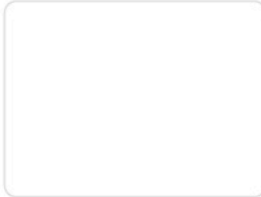
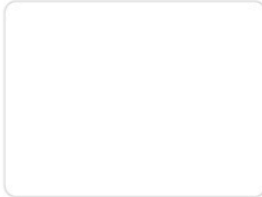
What students need to understand is that “shots” or “clips” should not be more than 10-15 seconds. One group I worked with insisted on filming 1-1/2 minutes of their story with no change in camera angle. It took two weeks to get them to think of short clips sewed together.

Shots need to be short. Changing camera angles from a two shot to over the shoulder shot, or two cameras from different angles filming the same dialog and later swapping between during editing helps a lot in getting an interesting to watch movie.

The elements of a storyboard include the type of shot, any dialog used, any sound files to be added, the location of the shot, any props used, and any action that takes place. It also should include the number of seconds the writer feels is needed for the shot. There are many different forms for storyboards. Here's one:

iPad 9:51 AM 46%

	Client		Title	The Door Scene 2
Storyboard The Door Scene	Spot	< 90 sec		Surprise Ending
Criteria:				

		
Shot 7:	Shot 8:	Shot 9:
		
Shot 10:	Shot 11:	Shot 12:

Students need to know that it's alright to revisit the storyboard as they progress, especially as they experiment with different camera techniques.

Production

The production phase of movie making consists of using the camera, the remote mics, the talent, the props at the selected locations for filming with lines held high on large paper for the talent to read.

That all sounds pretty straight forward, but there are some things that will come up in each shot that will be a challenge, that won't be in the storyboard, and that will pose a problem for the group to solve.

Just before production begins is a good time to select the camera person, the director and the talent knowing that these positions are fluid and most likely the teacher will need to make some changes. In my experience, students often make these changes on their own. What needs to happen is for the teacher to coach each through the responsibilities of the job. Here are the high points:

All: work on story board; one can do the broad strokes; rest can fill in scenes.

Writers: write the script

Director: tells the talent and cameraman what to do

Cameraperson: operates the camera and monitors the sound; need to hear talent

Lighting: ensures a consistent and appropriate lighting; no shadows on faces

Talent: actors who need to know their lines and their marks (where they stand)

Prop Manger: collects the props and delivers to the location

Scout: determines the best location for each shot

And here are a few details of each "job:"

Director:

This person knows the script thoroughly. The director tells the camera person what shots to take, what angles to use, and herds the talent. He/she will learn how sound and lighting need to work.

Talent:

These are the actors/actresses. The talent has lines to learn. Teleprompters holding iPads will help, but large format paper held up by the prompter is also viable. Doing so can be cumbersome for smaller students and outside on windy days.

Younger students voices are often faint. These folks need to be coached in projecting as loudly and naturally as possible.

If the take is a keeper except for the sound, the editors can do a voice over requiring the talent to repeat their lines as a separate sound file attached to the footage or text can be added that explains what is happening.

It's also hard for them to be waiting quietly until their turn comes up. So be prepared for some extra "sound" during the shoot.

Camera Operator:

When using the camera, there are a few techniques and “rules” that should be followed:

The 10 Second Rule:

Director says: “Camera” (camera rolls, then counts down from 5 showing fingers to all talent) then points to talent, then films the action, then waits 5 seconds after done before saying “cut to stop camera.”

Specific Camera Techniques: these should be practiced before doing actual filming:

Angles: high, low	Zoom: when and when not to use
One Shot, Two shot, etc.	Inside shots
Walk in, walk out of frame	Framing shot
Linking shots	Frisbee
Rack Focus	Over the shoulder

Equipment:

Camera:

Your footage will be stored on built in media. While there are different types, the most common is the SD card. This card type is supported by one model of the MacBook Air, but the card can also be read using a USB card reader just for the SD card. There needs to be at least two SD cards per film group or “production company.” With two SD cards, CameraA and CameraB can be used for different perspectives on the same scene. We used [Canon VIXIA HF 500](#) cameras. These gave great quality product.

Camera Batteries:

It’s critical to have an [extra set of camera batteries](#) for each camera. There are different capacities for each extra battery ordered. Many original ones are for 30 minutes; however, extras lasting up to an hour can be purchased. The ones linked here come with a separate charger.

Camera Cases:

Get a [soft carry case](#) for the cameras. It’s a great way to keep all the chargers and cables with the cameras. There are many types, and the fewer pockets the better.

Pelican Carry Case:

A large, hard shell [“Pelican Case”](#) on wheels with a retractable handle is the best way to move a set of 6-8 cameras and tripods around from room to room. This case is also the best way to safely store the equipment. Only chargers with extra batteries are ever outside it when the equipment is not in use.

Pelican SD Card Case:

This [hard shell case](#) holds 12 SD cards within foam cut outs. It’s sometimes hard to get the cards to stay within the cut outs, but having all the cards labeled with the production company’s name and #1 and #2 (if two cards), is an easy way or organizing things.

USB Card Reader:

These [USB card readers](#) are inexpensive but essential if the device the film editors are using does not have a SD card slot built in. One model of MacBook Airs has this, and makes video editing much easier not having to find and use the reader.

Tripod:

[Tripods](#) are best used for scenes that need a consistent point of view. But you will find that just holding the camera in hand works just as well. The one time the hand held approach can be cumbersome is when the lavalier mic is being used. The mic has a separate bracket that the camera mounts on: that bracket then attaches to the tripod's shoe. Try it first without the tripod, and you'll get some unexpected quality results.

If your groups are making claymation films, then an [Animation Tripod](#) is a good resource. These are 6" tripods for desktop use and they provide a consistency of camera angle, critical for such filming.

Lighting:

Consistency:

Shooting a major scene on a sunny day only to do a retake on a cloudy day will really show up in the final product. Viewers will wonder what happened to the weather! This is especially important in doing step animation where lack of lighting inconsistency really affects the 120 frames taken over several days when making a 10 second movie.

Direct/Indirect

Use some lighting from [Home Depot](#) or other building suppliers for direct lighting. A desk lamp will sometimes work.

For indirect lighting and color additions, try [Foils](#) or a [collapsible reflector](#). It's best to have a direct light source when using foils as window light alone will probably not be enough to brighten a face.

Faces:

Faces need light. Backlighting, that is, positioning the subject against a window on a bright day, will silhouette the talent, and the face will be in shadows. Have the light come through the window directly on the subject's face.

Sound:

Important notes about sound:

Not being able to hear the talent is the single most frustrating situation viewers, directors and editors face. Built in camera mics are good, but this is only for closeups with the camera. The Azden, a [Lavalier](#) Mic, is the better choice for a good quality wireless mic at a reasonable price.

Each Lavalier Mic is capable of broadcasting/receiving on two channels, A+B. So it's possible to have two cameras, Camera A and Camera B, on the same scene each using a wireless mic and being on separate channels. Editing is later done by switching back and forth between the two camera's clips of that same scene.

When recording the scene, check the playback to be sure that each talent in the scene is heard equally well. If the mic is not positioned carefully, one voice will be really loud, and the other will be much softer.

The camera operator can also use headphones to hear the voices through the wireless mics and then make adjustments if needed.

A “sound boom” can also be used with the Lavalier set up by mounting the sending unit on a light weight pole (plastic pipe or aluminum conduit) and hanging it over the talent. The trick here is to keep the boom from being seen by the camera.

Wind screen protection may be important depending on the weather, and most mics have a small foam cover to reduce wind noise.

These mics [need their own bracket](#) that mounts between the camera and tripod.

Green Screen

[Using Chroma Key Green](#)

This is what the weatherperson uses on the 6 PM news. We see the announcer pointing to a screen behind, when really they’re looking at a monitor. Behind them is a back drop with “Chroma Key Green” color. As long as the announcer does not wear any color approximating that specific color, their image can be placed on any other image. iMovie does this in editing, but this can also be done while filming if there is a chroma key green backdrop.

Importance of bright, consistent lighting when using chroma key green cannot be overstated. There can be no shadows. Spot lights on a suspended beam in front of the green drop cloth/wall is the way to go.

Post Production:

The Post Production process takes all the footage planned and shot, and it weaves them together into the final movie product.

Using transitions (like flips, wipes, iris, fade in and fade out and Ken Burns), the editors using iMovie have a great deal of control over how the final product appears.

Using iMovie requires a separate set of lessons, but there are some general practices all should be aware of.

1. The iMovie files are all stored on the one account used when logging into the laptop/desktop. If other students have access to that device and that one account (like “student” for example, then it is possible to see some hard work disappear. It isn’t a simple thing to copy all the pieces on a separate drive. So the best thing to do is to have the device’s administrator create a separate account for each production company using it, keeping track of the log in name and passwords. That way, no other users will have access and accidentally make changes. It’s also a good idea to keep a record of the devices that are being used.

2. Editing your footage in iMovie:

There are books for this, and I recommend you do some searching on YouTube to answer specific questions you’ll have when using iMovie. Additionally, you should be thinking about what you can and can not do regarding copyrighted material, specifically music and images from the Internet. It is my contention that as a school and

for the non-commercial purposes of the project, you may have a wider latitude than you think.

iMovie features:

- Connecting the camera and adding your footage

- Adding GarageBand music sent to iTunes: USB drive to transfer

- Adding photos sent to iPhoto

- Advanced Options: Must turn on iMovie/Preferences/Show advanced tools
 - picture in picture (no text or transitions in the PIP)
 - green screen effect

- Rotate: Click+"C" key to bring up rotation of entire video/still clip 90°/180°

(This came in handy when one creative camera person tilted the camera 90°. It's an all or nothing feature for the clip....not the entire project, so split the clip if needed)

- Transitions:

 - fade in/fade out

 - jump cut

 - wipes/iris, push/pull, blinds, and more

 - using the globe

 - Ken Burns and others

- Text Overlays

- Timing of clips, transitions, text and audio

- Splitting clip at playhead: Why do this?

- Using the built in iSight camera on the Mac

 - why would I use this?

 - where does this movie go?

 - what effects can I use?

- Sound (always the LAST thing you edit/include):

 - using built in sound effects (Foley)

 - including iTunes files sent over from Garage Band
 - ducking

- Voice over and text to resolve audio issues

3. Garage Band:

- Creating new tracks

- Identifying the track's end and re-setting the stop point

- Shutting off the metronome

- Stretching and shrinking tracks

- Looping

- Foley: what it is and when/how to add it.

- empo: what it is and how to modify it.

- Searching for loops and how to add them

- Importance of using tracks of similar tempo

- Selecting built in tracks per key/tempo.

- Exporting the sound track from GarageBand to be accessible in iMovie

Share to iTunes

If on same device, sound file appears in music library or on iPad sent to existing or new movie project

If on different device, drag iTunes file to USB stick and bring into iTunes Library on movie editing device. Appears automatically in media library.

4. **Burning to a DVD** using iDVD and making copies:

This was a pretty simple process using iDVD (which is not being developed further, but still functional if you have a copy of iLife '11 install DVD).

Each editor exports the movie to quicktime, largest file size possible. It doesn't matter if streaming is turned on or not: that is a function of the web page these may get hosted on, so nothing special needs to be done to accommodate that.

Some films take a long time to process to the desktop, so plan on 15-30 minutes for that to complete. When these have finished, use a USB drive to grab the files.

Next step is to copy them to your device's desktop. Burning will be faster if they are all on the local drive.

I found that iDVD will support up to 12 separate "buttons" or movie titles on the main screen, so plan to make a sub menu(s) if you have more than 12 and/or need to group them according to grade and/or school.

Once the first DVD has been created, it gets ejected and iDVD is ready to burn the next one. It's then a much faster process as the first one has items cached.

Animation:

Animation is a fun option, and the film makers don't have to work with any difficult talent personalities. Everything else is the same except it takes much longer to do the filming as these are simply individual photos. I would limit any claymation project to 30-40 seconds.

Frames per second should be at least 15. A 20 second film would have 300 photos.

[Claymation](#)

[Gumbi](#)

[Wallace and Gromit](#)

Using toys (ask around the neighborhood if you don't have any)

Lego creations: self-building lego project(timelapse)

Using a camera with desktop tripod

Importance of lighting consistency cannot be overstated.