


NEW YORK CITY BOARD OF EDUCATION
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HANDS-ON: A GUIDE TO USING VIDEO AND MULTIMEDIA PRODUCTION IN PROJECT-BASED WORK

In the process of making videos or multimedia presentations children learn how to do research, to conduct interviews, to write a variety of styles, to work collaboratively, to make informed decisions and give oral presentations – the list goes on. And because it is produced for an audience – whether sitting in front of a TV in the classroom or on the World Wide Web – the work feels authentic to students, in ways that typical "schoolwork" often does not.

Educators recognize the value of projects as tools for teaching and learning, as evidenced by the New York City Board of Education's 8th Grade Exit Projects in Science and Social Studies. Among the mediums available for creating such projects video is certainly one of the most exciting. This guide, prepared for the New York City Board of Education's Office of Instructional Technology, provides a brief introduction to creating classroom media productions. It offers a basic introduction to Hyperstudio and iMovie. To create the video clips and still images for the Hyperstudio projects we used the Mavica camera because it allows for the creation of short video clips right on a standard computer disk or CD-R. We also provide some ideas for assessment of media projects, including several rubrics which can either be used as-is or modified. We usually develop rubrics with our students because it encourages them to reflect upon their learning and allows them to have input into the evaluation process.

Junior High School Student Map Of Multimedia Project.

In the process of making videos or multimedia presentations children learn how to do research, to conduct interviews, to write a variety of styles, to work collaboratively, to make informed decisions and give oral presentations – the list goes on.

GETTING STARTED : FIRST STEPS

USING A VIDEO CAMERA

It's not hard to learn to operate video equipment. A camcorder is user-friendly, a lot like a car. Most of us don't know how a car works but we can drive one with no problem. All we have to do is get over our initial fears, read the manual and practice. From there on, it's easy. There's only one problem with video equipment, as with a car - once you teach your kids how to use it you'll have to fight to get your hands on it again. And you must stress safety; tell students never to leave a video camera on the edge of a table or unattended.

These are the essential features to outline:

- Power Button
- Holding the camera
- Charging Battery
- VCR/Camera Function
- Inserting Tape
- Internal Mic
- Record/Pause
- Zooming In/Out

PLANNING YOUR SHOTS

In order to produce a video project, some time needs to be given to learning about basic camera operation and camera shot language terminology. Practice the different shots and camera movements from the *Shot Sheet*. When you are ready to shoot your video, decide what type of setting, shot and camera movements you are going to include. Use the storyboard handout to plan this:

What environment do you want to use, and what background do you want to see?

A particular setting can immediately tell your viewer something about the interviewee or protagonist - whether it is an office, a classroom, a hospital, a home, a park, etc.

What kind of shot do you want to start with?

If you are shooting interviews, do you want to see the interviewer, or just the interviewee?

Keep in mind that even if the audience doesn't see the interviewer, they will hear the interviewer, so the audience will be aware of all of the interviewer's questions and comments. Some video producers start with a wide shot where the audience will see the interviewer, interviewee, and the environment that the interview takes place in. You can plan your shots using the *Shot Sheet* and *Storyboard Sheet* in this packet.

A camcorder is user friendly, a lot like a car.

AVOID SHOOTING INTO A LIGHT SOURCE

Shooting any camera into a light source like the sun will silhouette the subject. This is called the backlight effect. To avoid this, never place the subject in front of a window or bright light. Sometimes even placing the subject in front of a white wall will have the same effect. The camera light meter reads the amount of light on the white wall, or the sunlit sky as too much light and it automatically shuts down the iris to decrease the amount of light. As the light meter cannot decrease light on the background without decreasing it on the subject as well, the subject often ends up poorly lit and even silhouetted.

TIP: If you have to shoot into a light, zoom in on the subject as much as possible to shoot a close up. This will minimize the light in the background and therefore minimize the *backlight effect*.

USE A TRIPOD

In order to avoid a shaky shot, it is best to use a tripod. Think about the angle that you want (refer to the shot sheet) and set the tripod to the proper height. If you set the tripod to its maximum height, you will probably get a high angle shot. If you want an eye-level shot, start with the legs low, even the shortest leg-length possible and adjust the tripod height up and down with the handle.

If you don't have access to a tripod, keep in mind that the closer your shot is, the more the camera shake will be noticed. If you are shooting without a tripod and you want to avoid shaky shots, try shooting wide and medium shots and avoid close-ups.

Of course, nowadays hand-held, sideways and even upside-down shots are used in music videos and mainstream TV, so you may choose to shoot without a tripod. The key word is intention... if you are getting shaky shots, make sure that is what you are going for.

USE AN EXTERNAL MICROPHONE

For most school projects, using the camera's built-in microphone will be inadequate. If you are shooting interviews, it is difficult to get the camera close enough to the subjects for the volume to be high enough. Often there are street noises or loud school background noises that will compete with the subjects' dialogue. With skits, assemblies, speakers and other performances that involve an audience, it is also difficult to get the camera close enough to those being videotaped.

Almost all video cameras have a small microphone input—usually a "mini" input, which a microphone cable will plug right into. Most microphones have a three-pin XLR connection (microphone-male, XLR connection-female) and a male XLR to male mini cable will attach the microphone to the camera. (See Figures 1-1 and 1-2)

With an external microphone, the sound quality will be vastly improved. The street and school sounds that were so distracting before will now only add character and a sense of environment to your videotape, without rendering the talents conversation inaudible.

Depending on the microphone's pickup pattern, the direction the mic is pointing could be very important. A unidirectional mic will ONLY pick up sound in the direction it's pointing in, while an omnidirectional mic will pick up all sounds nearby, regardless of where the mic is pointing. It is safest to point the mic in the direction of the person talking, 6-12 inches from her/his mouth.

When the interviewer asks a question or makes a comment, the mic should be pointed toward her, and when the interviewee answers, the mic should be gently tilted away from the interviewer and toward the interviewee. We suggest that the interviewee always hold the mic in order to control these slight but very important mic movements.

Lastly, remember to always use headphones to monitor your sound. Look for the headphone input on your camcorder (usually a "mini" input). Even Walkman headphones will do.

If you don't get sound in the headphones STOP: you will not be recording sound on your tape! Check your microphone; it may be switched to "off", or the batteries may be dead; check your cable - it's good practice to always have a spare cable as a backup. Finally, check your headphones; you can do this by unplugging the external mic and check to see if you hear sound through the headphones when using the camera mic, which is more likely to be working.

TIP: Mic cables and inputs are fragile. Be careful not to step on mic cables or exert pressure on the mic input on the camera. Once the mic input on the camera loosens - the mini jack connector will not fit snugly into the plug which means you will have difficulty recording sound successfully using an external mic. Unfortunately, a loose external mic connection is an expensive repair so you want to avoid it.

Figure 1-1
XLR Plug

Figure 1-2
Mini Plug

With an external microphone, the sound quality will be vastly improved.

GET YOUR EQUIPMENT & STUDENTS READY

Before you introduce your students to the equipment, be sure to charge your batteries fully and test all your equipment and cables. Nothing is more frustrating than having a classroom full of eager faces and a desk-full of inoperable equipment. It is important that your students learn how to operate the camera and get used to working in their crews, so always allow at least one practice session before the real shoot.

TIP: A camera typically takes a few seconds to begin recording once the record button is pressed. To avoid missing anything, be sure to start recording at least 5 seconds before an action begins. This is why the director says "Roll Tape", then counts down 3 seconds before saying "Action".

ROTATING CREW ROLES

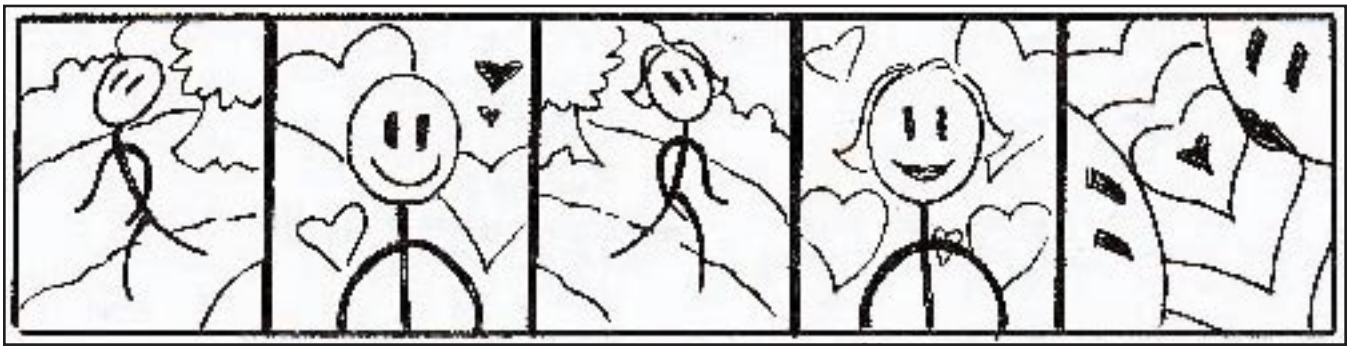
At EVC, we have students rotate crew roles frequently, so that even within one shooting session several students get a taste of the different jobs on a crew. This way more students have the opportunity to actively participate in the class and to try each position on the crew. We have found that without crew role rotation, students tend to gravitate to one job and never try another; they do that which is easiest for them, and lose the chance to find a hidden talent such as public speaking or operating the camera. How often you have students rotate is up to you. When shooting a skit, you might have students rotate crew roles with every shot change. In an interview situation, the rotation can occur after every interview segment or less frequently, depending upon how much time you have. Refer to the *Crew Roles & Responsibilities* sheet we have included for you in this guide, for a description of the different roles you can assign your students.

At EVC, we have students rotate crew roles frequently, so that even within one shooting session several students get a taste of the different jobs on a crew.

TIP: When using an external microphone (especially when taping interviews or narration), the director can stand right next to the camera person and quietly whisper directions. This way the director can call the shots without being heard on the video tape.

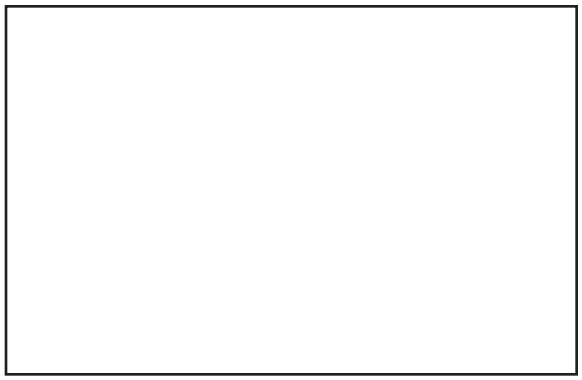
STORYBOARDS

Creating a storyboard is a good way of ordering your ideas for how a video might look. It usually takes the form of a series of blank boxes with space underneath to note down the type of shot you want to record, the action that occurs and what sound will be heard. Below is a sample storyboard from the “EVC YO-TV Production Handbook”. We have included a storyboard template for you in this guide that you can print and use with your students.



WIDE SHOT: Boy walks down path	MEDIUM SHOT: Boy sees girl	LONG SHOT: Girl walks down path	MEDIUM SHOT: Girl sees boy	CLOSE UP: Boy and girl meet

STORYBOARD



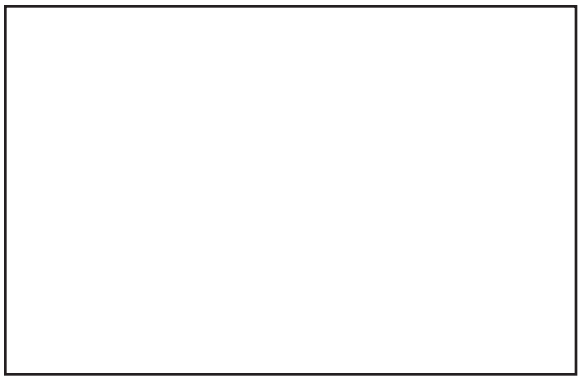
SHOT: _____

ACTION: _____

_____

AUDIO: _____

_____



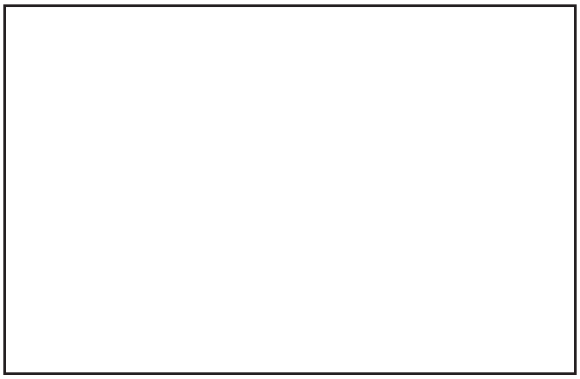
SHOT: _____

ACTION: _____

_____

AUDIO: _____

_____



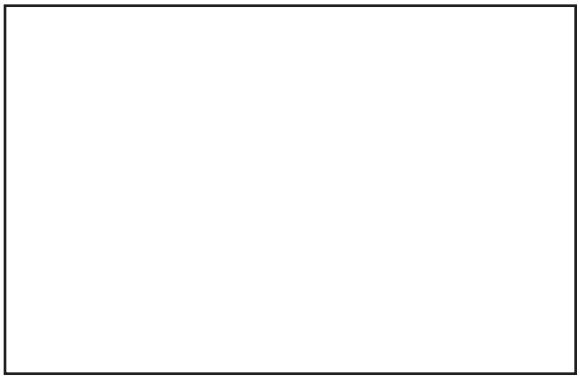
SHOT: _____

ACTION: _____

_____

AUDIO: _____

_____



SHOT: _____

ACTION: _____

_____

AUDIO: _____

_____

CREW ROLES & RESPONSIBILITIES

DIRECTOR:

The director organizes the set, decides where to put the camera, lets the camera operator know how the shot should be framed and decides when to start/stop shooting.
At the beginning of a scene or interview the director says:

- Is the camera ready? (Camera person answers yes or no)
- Is the sound ready? (Sound person answers yes or no)
- Is the talent ready?
- Quiet on the set!
- Roll camera (camera person starts recording)
- 5, 4, 3, 2, 1…..(talent gets ready)
  Action! (talent starts talking)

At the end of the scene or interview, the director says:

- Cut! (camera person stops recording)

CAMERA PERSON:

The camera person sets up the camera and shoots the scene.
When the director says, "Roll camera," the camera person presses the record button. When the director says, "Cut," the camera person stops recording.

SOUND PERSON:

The sound person sets up the microphone and monitors the sound using the headphones. If the sound is inaudible or there are sound interferences, the sound person signals or whispers to the director, who will yell, "Cut!"

TALENT:

The “talent” are the actors, interviewers, interviewees, narrators or reporters in a skit, documentary, or news show. They start speaking or moving when the director says, "Action," and they stop when the director says, "Cut."

NOTE TAKER/SCRIPT SUPERVISOR:

The note taker jots down observations on each take of a given scene or shot. They note down misspoken lines or lines said particularly well. Additionally, they identify what they believe to be the best take or the best "bite" or portion of an answer in an interview. This will help in the editing/decision making process on what to include in the final video later on.

SCOUT:

While shooting interviews, the scout will try and line up several interviews so that when an interview ends, the next interviewee is ready to go.

OTHER CREW ROLES:

If there are students left working in a group that need a crew role, the following roles can be assigned: Assistant Director, Assistant Camera person, Prop Person, Production Manager.

ORGANIZING THE SHOOT

Shot /Scene# _____

Talent: _____

Director: _____ **Camera person: _____**

Sound person: _____ **Notetaker: _____**

Shot /Scene# _____

Talent: _____

Director: _____ **Camera person: _____**

Sound person: _____ **Notetaker: _____**

Shot /Scene# _____

Talent: _____

Director: _____ **Camera person: _____**

Sound person: _____ **Notetaker: _____**

Shot /Scene# _____

Talent: _____

Director: _____ **Camera person: _____**

Sound person: _____ **Notetaker: _____**

Shot /Scene# _____

Talent: _____

Director: _____ **Camera person: _____**

Sound person: _____ **Notetaker: _____**

MAVICA MULTIMEDIA PRODUCTION WORKSHOPS

As mentioned at the start of this guide: in the process of making videos or multimedia presentations students learn how to do research, to conduct interviews, to write a variety of styles, to work collaboratively, to make informed decisions and give oral presentations. Recognizing this, The Office of Instructional Technology arranged for the Educational Video Center to provide professional development for teachers on the use of the Sony Mavica camera and the multimedia presentation program, Hyperstudio through the "Mavica Multimedia Production Workshops".

Participating teachers were provided with research materials on the subject of immigration (as an example of what could be studied) so that they could develop an essential question or problem, and then plan, shoot and edit a short project that addressed it. This served as a model for teachers to follow when they returned to their classes to facilitate projects with their students. Teachers learned how to guide students through the process of planning, implementing and assessing short technology-based projects. As teachers engaged their students in this initiative they would practice using digital media to formulate a question, research, gather and organize information, and present their findings.

The immigration-themed activities/handouts on the following four pages (Scavenger Hunt, Creating Questions for Street Interviews, Choosing and Developing an Essential Question and Mapping Out an Essential Question), were used by teachers in the Mavica Multimedia Production Workshops and can be used as templates for students to follow in structuring their own projects. Teachers should use the rest of the guide as a resource covering indepth interviewing skills (whether they are using a digital still camera such as the Mavica which takes short two minute video MPEG clips, or a regular digital video camcorder), the different types of camera shots to explore, classroom management techniques and assessment methods.

CHOOSING AN ESSENTIAL QUESTION

The purpose of an essential question is to focus our thinking on a topic or curriculum. It should force us to think about what it is we want to say and do and keep us on track.

An essential question should stimulate thinking and discussion and encourage thinking outside the box and consideration of other points of view.

An essential question can have more than one answer, can promote learning and may even lead to social action.

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An essential question can have more than one answer, can promote learning and may even lead to social action.

SCAVENGER HUNT

As a group, you will go on a scavenger hunt using your Mavica camera. You will try to capture still images and video clips. Here is a list of the things that you should bring back from your hunt:

Still images

- A piece of clothing from another country or culture
- Money from another country
- A symbol or image from another country that has been Americanized
- 2 pictures of an ethnic restaurant
- Something written in a language other than English (and its translation)
- A religious artifact

Video

- Interview 2 recent immigrants and find out why they came to America
- Record someone who will sing the national anthem of another country
- Record how to say hello or goodbye in 3 different languages
- Record a love song from another country

Remember…

If you have the Mavica FD90:

- *you can record only 1 minute of video on each disk.*
- *For the still images, make sure that you select 640X 480 for image size so you have do not fill you disk too quickly.*
  Go to Menu, click on File > Image Size > select 640X480.
- *In order to record 60 seconds of video, set the image size to 160X112.*
  Go to File> Image Size> 160X112.

If you have the Mavica CD 200:

- you do not have space limitations but by recording smaller images you will be able to fit more on the CD - refer to you manual for image size specifications.

CREATING QUESTIONS FOR STREET INTERVIEWS

1. As a group, discuss whom you would like to interview in the street and why (e.g. age group, gender, ethnic background).

2. Have each member of the group write 3 questions that they would like to ask in your street interviews.

3. Share all your questions.

4. As a group, select 6 questions from this new list of questions
(Note: you might need to eliminate redundant questions or to reword some questions)

5. Order the questions from the most general to the most specific.

QUESTIONS:

1) _____

2) _____

3) _____

4) _____

5) _____

6) _____

CHOOSING AND DEVELOPING AN ESSENTIAL QUESTION

1. As a group, review all the material you have collected from your scavenger hunt.

2. Based on your initial exploration of the topic, is there anything that you would like to learn more about? (each member of the group should write down a least 3 questions).

3. In your group, go around and share two questions that you would like to explore in a project.

4. Are there similar questions that come up?
   Eliminate questions that are redundant or impractical and combine similar questions.

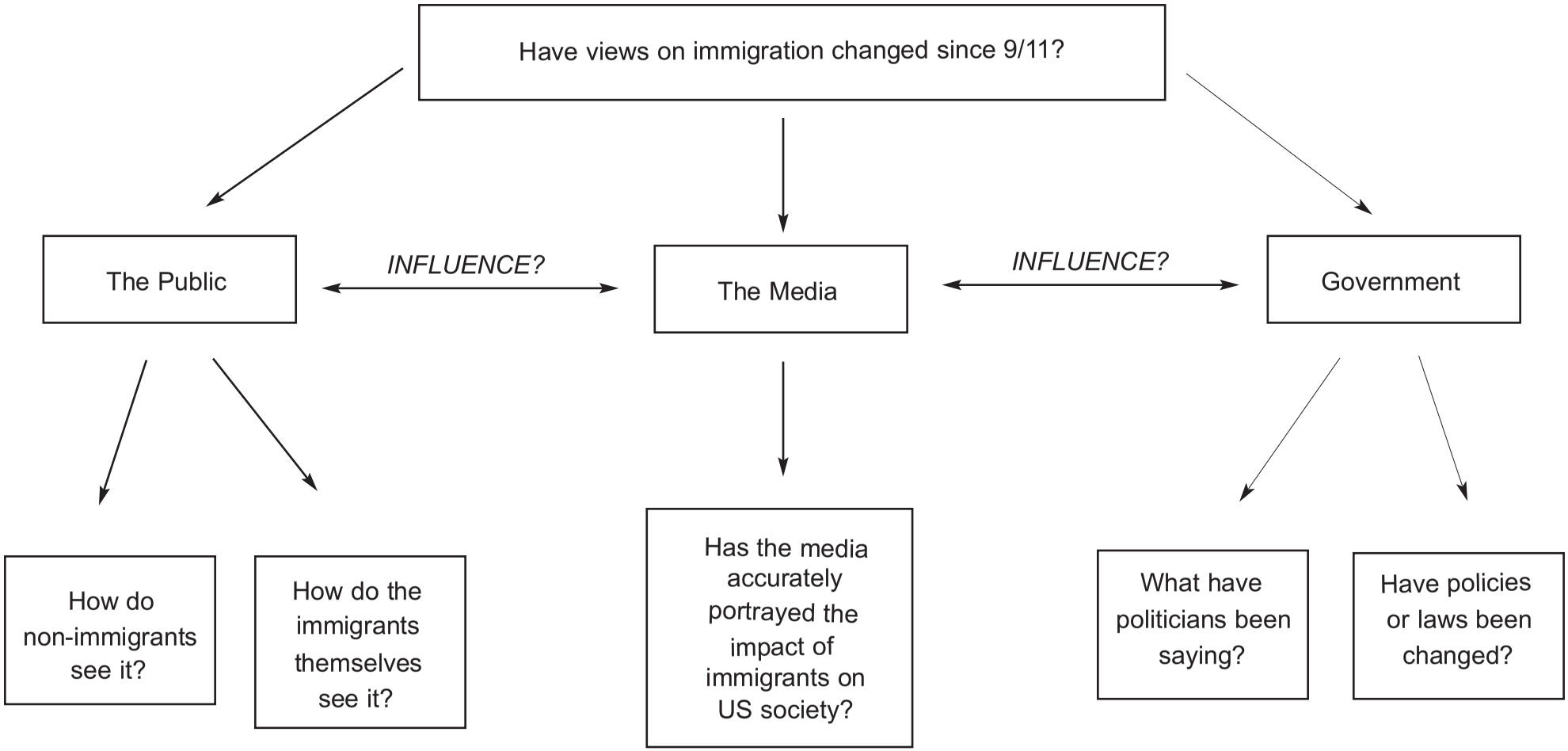
5. Read your questions again. Choose one question from the list that your group would like to explore. This will become your “Essential Question”.

6. Once you have your Essential Question, map the different topics/and or questions related to it.

   (Note: use the mapping out questions diagram on the following page as a guide.)

MAPPING OUT AN ESSENTIAL QUESTION

Once you choose your essential question it might help to map out the different areas of inquiry to which your question might lead you. Below is an example of a map diagram for the question: “Have views on immigration changed since 9/11?”



USING THE MAVICA FD90

TURNING IT ON

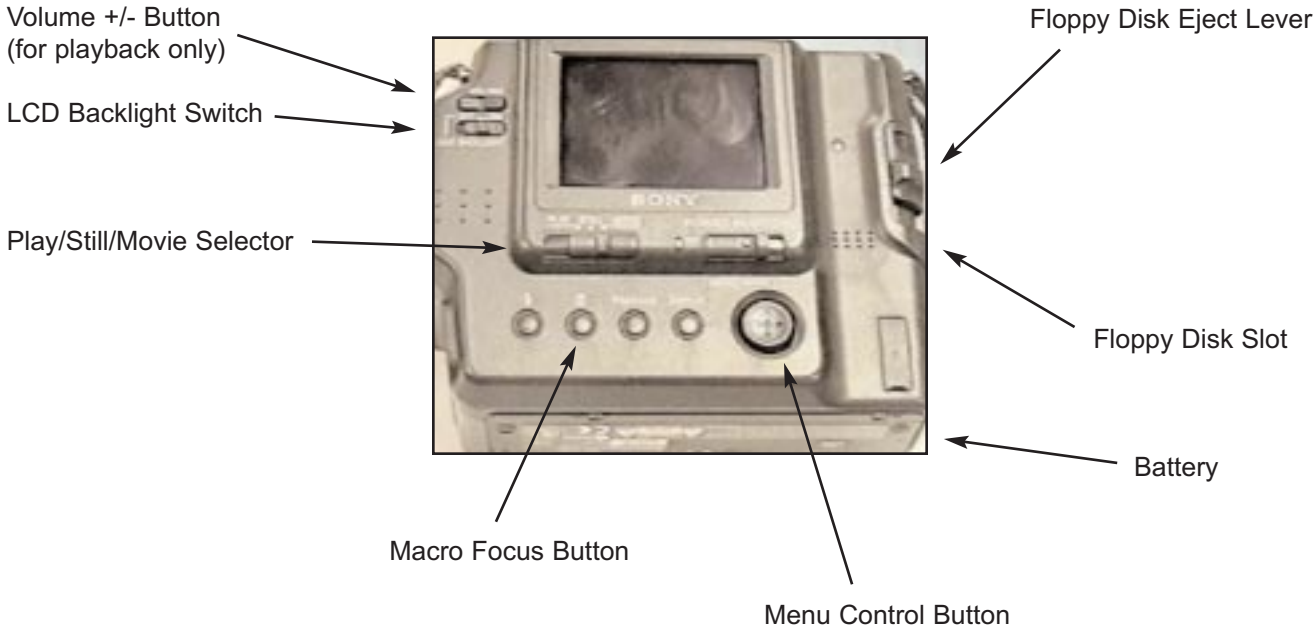
Slide the power switch to the right to turn on the power.
A green light turns on.
Insert a floppy disk into the floppy drive until you hear it click.

Note: The following is intended as a basic guide only. For more specific information on how to work the Mavica FD90, refer to the manual that came with your camera.

TO RECORD STILL IMAGES

Still images are recorded in JPEG format.

1. Set the **PLAY/STILL/MOVIE** selector to **STILL.**
   To record 30 images on a floppy disk go to the menu, click on File>Image Size, select 640x480.
   A 1024x768 Image size will only record 10 images on a disk.
   The higher the Image Size (resolution) the more space it takes up on a disk.
2. Zoom in and out according to how you want to frame your picture.
3. Press and hold the shutter button halfway down and check the image.
4. Press the shutter button fully down.
   The shutter clicks and the image is recorded onto the disk.



RECORDING MOVING IMAGES

Moving images are recorded in MPEG format

1. Set the **PLAY/STILL/MOVIE** selector to **MOVIE**
2. *In order to get up to 60 seconds of video you have to set the image size to 160 x 112.*
   Go to the Menu, click on File>Image Size and select 160 x 112.
   If you set it to 320x240 the maximum recording time is 15 seconds.
3. Press and hold the shutter button fully down until you want to stop recording.
   "REC" appears on the screen, and the image and sound are recorded on the floppy disk
   Be careful - if you let go of the shutter it will stop recording.

TO VIEW STILL AND MOVING IMAGES

1. Set the **PLAY/STILL/MOVIE** selector to **PLAY**. The last recorded image appears on the screen.
2. Press on the control button to display the menu bar on the screen.
3. Select the desired still image or video with the control button and then press the center.

If you want to view the video on your computer, install the software on the CD ROM that came with your Mavica, put in the floppy disk and click on the JPEG or MPEG file you want to open. We recommend, however, that you copy the file to the hard drive and then open it as it is easier to open and view files on a hard drive than on a disk. You will need QuickTime to play back an MPEG file. QuickTime is a movie player program designed by Apple that allows you to view movies. It's already installed on all Macs, but if you don't have it or if you have a PC you can download it for free from: http://www.apple.com/quicktime/download

NOTE: It is possible to perform very simple edits of your mpeg files using a basic editor that is included on your Mavica CD ROM. While it won't give you fancy feature film transitions - it will allow you to cut and paste your short clips together.

A NOTE ABOUT THE MAVICA, MPEG FILES AND iMovie

Just in case you were thinking "Great - I can shoot some short video clips using the Mavica and then import and edit them in iMovie...," think again. We hate to be the bearer of bad news - but you can't. Yes, the Mavica records short movie clips as nifty little MPEG files but iMovie only recognizes DV files.

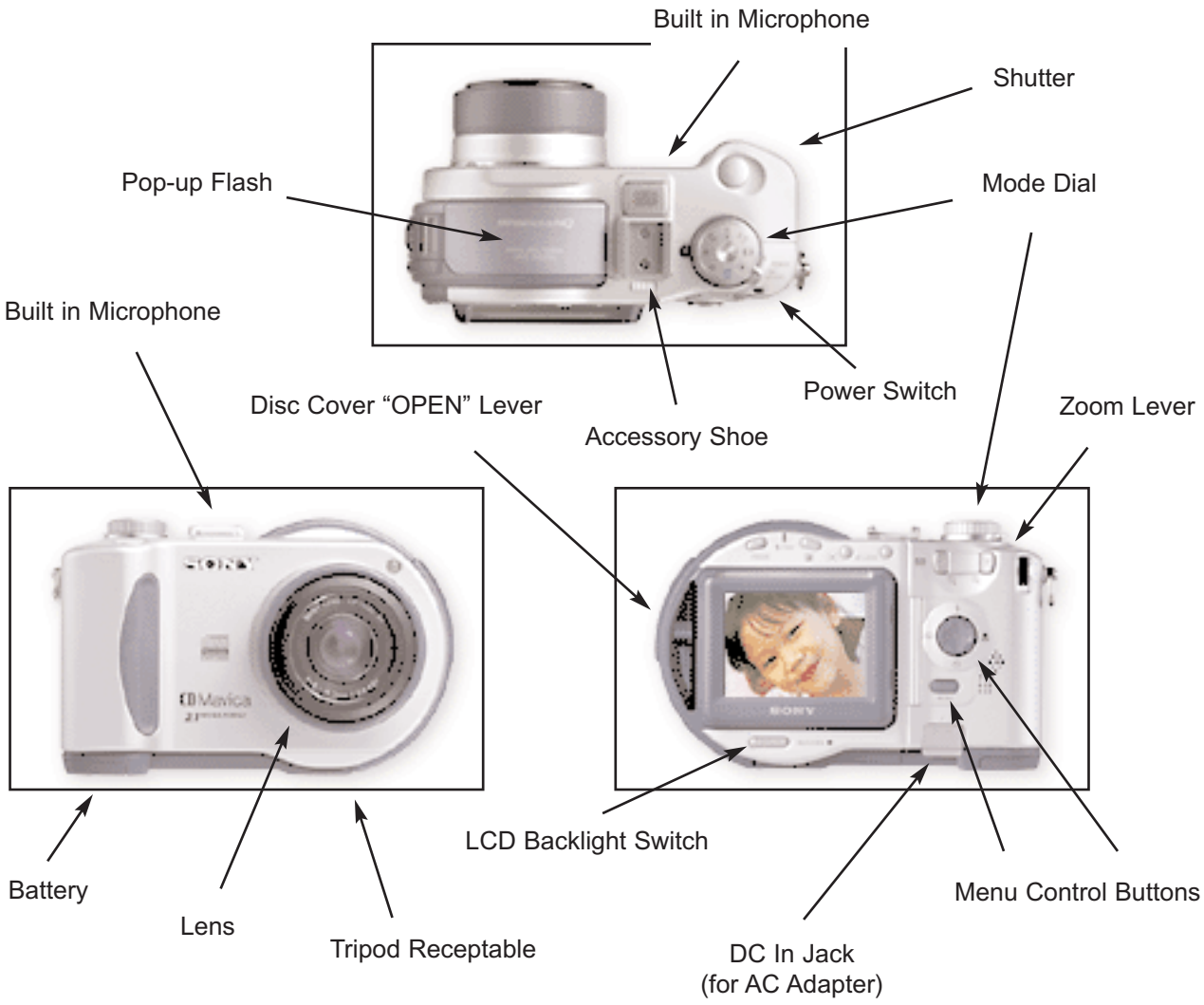
There is an upgrade to the freeware QuickTime that you can buy online from Apple for $30. It's called "QuickTime Pro", and among other things it enables you to convert QuickTime files into DV Stream files, (a file that iMovie will import) *but* - there's a catch. Just because you view your MPEG file in the QuickTime player - it's not really a QuickTime - it's an MPEG.

When you convert your MPEG movie to a DV Stream movie and then import it into iMovie - you won't get any sound. This is because the MPEG movies have the video and audio on the same track and QuickTime has no way to extract the audio and make it a separate track during the conversion process. This means the audio just disappears. Apple has said it hopes to change this in future editions of QuickTime but even their latest edition, QuickTime 5, hasn't solved this problem. It's not a bug or anything - it's just a feature for which there was never any real need - until fairly recently, and it's not one easily added. Perhaps the more people that start using digital still cameras that record MPEG's - the more pressure Apple will be under to fix the problem for us; either that, or fingers crossed that iMovie 3 (whenever that release may be) will allow us to import MPEG files.

If you don't mind losing the sound from your movie clip/MPEG file when you import into iMovie and you're happy to add music or narration to mask the silence - then you should go ahead and purchase the QuickTime Pro upgrade so you can do this.

Losing sound is NOT a problem in Hyperstudio. You can import as many MPEG's into your Hyperstudio Project as you like and it will happily play them.

USING THE MAVICA CD200



For specific information on how to work the Mavica CD200, refer to the manual that came with your camera.

Note: The following is intended as a basic guide only. We have not rewritten the manual but have listed some of the things you should look out for when using the Mavica CD200 camera, along with the relevant page numbers of your camera manual to refer to for more information.

TURNING IT ON

Slide the power switch up to turn on the power.
A green light turns on.
Insert a 3” CD-R or RW disc into the drive and close the disc door (refer to pg.16 of your Mavica CD200 manual).

INITIALIZING A DISC

When you use a new disc you need to first ***INITIALIZE*** it using the initialize menu function, before you can use it (refer to p.18 & 32 of your Mavica CD200 manual for instructions of how to do this).

TO RECORD STILL IMAGES

Still images are recorded in JPEG format.

1. Set the **MODE DIAL** by turning it to the camera icon. The camera icon should be next to the raised dark grey plastic insert which lies between the *Accessory Shoe* and the *Mode Dial* (refer to p.20 of your Mavica CD200 manual if you need more information).

2. Press and hold the shutter button halfway down. The camera adjusts to the right exposure and focus and if you press all the way down the image is recorded onto the disc. You will see the word “RECORDING” appear on the LCD screen - once it disappears your image has been saved to the disc and you can take your next picture.

*NOTE:There are other settings you can use to record still images such as **S**, **A**, **M**, or **SCN** For an explanation of these refer to pg.45 of your manual.*

If you will be resizing and compressing images afterwards using a program like Photoshop, it is possible to record an image as a GIF or TIFF format to avoid the image deteriorating; see p.44 of manual.

RECORDING MOVING IMAGES

Moving images are recorded in MPEG format

1. Make sure your camera is set to **MOVING IMAGE** and **MPEG MOVIE** by following the instructions on p.26 of you manual. Once you’ve checked this, set your camera to the movie icon on the **MODE DIAL**.

2. Press and hold the shutter button fully down until you want to stop recording.
"REC" appears on the screen, and the image and sound are recorded on the CD.
Be careful - if you let go of the shutter and press it down again it will stop recording.
The most you can record on a single CD is 4 mins at 160x112, the lowest “IMAGE SIZE” setting; p.53 of the manual explains how to set the image size.

The number of still images (jpg’s) or time-based clips (mpeg’s) you can record on a 3” CD varies depending on the image size you select. For example, the higher the image size (resolution) the more space it takes up on a disc. Still images taken at a 1600x1200 fine resolution will fit 132 images on a disc, whereas if standard quality is selected, you will fit 237 images. A lower resolution of 640x480 at fine quality would get you around 663 images on a disc and at standard quality you would get 1300 images.

Your camera manual has a handy table of these numbers on p.54, along with the amount of mpeg files (seconds) you can record. We suggest you photocopy this page and keep it in your camera bag as a reference and to help you keep a track of how much space you will take up on a CD before you record anything.

PREPARING TO VIEW IMAGES ON A COMPUTER

You will need to use the black plastic adapter ring that came with your camera to view the 3” CD on a computer. This can prove a little tricky at first - but with a little practise you’ll get the hang of it. Once you place the CD inside the ring, use one tab at a time to ease and click the CD into place. Refer to p.31 of your Mavica CD200 manual to see diagrams showing how to do this.

FINALIZATION

You need to finalize your CD before you can view any images on a CD ROM drive. **You will not be able to view anything unless you finalize the CD.** Finalization takes up 13MB of space, so try not to do it after you have taken only a few images unless you need to - it is best to do it after you have taken a batch of images.

To finalize a disc:

1. Set the **MODE DIAL** to **SET UP** and select **DISC TOOL** using the control button arrow keys.
2. Select **FINALIZE** and then **OK** using the arrow keys.
3. The camera needs to be kept still during this process or it will not work (p.33 of the manual also includes this information).

VIEWING IMAGES USING A COMPUTER

The instructions in the Mavica CD200 manual for viewing images using a computer are extensive and vary depending on which operating system your computer has and whether your computer has a CD ROM drive, a CDR/CD-RW drive or a USB connection. We suggest you find the section which is appropriate to you and read through it carefully. Instructions start on p.35.

The important thing to remember is that if you will be viewing images on a PC/Windows environment which does not have a USB connection and only a CD-ROM drive, you will need to finalize the CD and use the adapter ring.

If you will be viewing images on a PC/Windows environment which does have a USB connection, you will be able to use the USB adapter cable that came with the camera (after you install the USB diver on the supplied SVPD-006 CD, p.38) and you will NOT need to finalize the CD to view images.

If you want to view images on a PC/Windows environment that has a CD-R/CD-RW drive (and not use the USB adapter), you will *NOT* need to finalize the CD to view images but you *WILL* need to install the software DirectCD that came with the camera (p.36, 41).

***** A NOTE TO MACINTOSH USERS *****

As Mac users we're used to always having to do things differently - it comes with the territory of using such a great machine! We do not have the option of viewing images on a Macintosh computer by using the USB adapter cable (p.36) - but that's ok - we don't need it.

FINALIZE your 3" CD, install the driver "Adaptec UDF Volume Access" CD that came with your camera, pop your 3" CD into the adapter ring and view your images (p. 41).

ERASING A CD

You CANNOT erase a CD-R.
Whatever information you record on a CD-R is permanent and cannot be deleted/written over.

You can ONLY erase a disc if it is a CD-RW disc.
To delete information on a CD-RW disc you will need to **FORMAT** the disc.
This process takes approximately 7 mins.

1. Insert the CD-RW disc into your camera.
2. Set the **MODE DIAL** to **SET UP**.
3. Select **DISC TOOL** and then **FORMAT** using the arrow keys.

NOTE: Check to make sure there isn't anything on the disc before formatting it - once you start the process, there's no turning back - you'll loose whatever information you have on the disc. Refer to p.82 of the manual for more information.

GETTING READY TO INTERVIEW

One of the primary skills for doing research for inquiry-based projects is the ability to conduct an interview. A good interview is a type of guided conversation, in which the interviewer leads the interviewee in a certain direction, and tries to get the answers to predetermined questions. A masterful interview has something more—an element of surprise, a revelation, an unexpected connection between the two participants.

'OPEN' VS. 'CLOSED' QUESTIONS

Good interviews start with good questions. Questions that elicit the stories and information in a compelling manner are key to good interviews. "Open " questions are questions that begin with "how," "why," "describe" and "explain" - the kind of questions that get people talking. Students conducting their first interviews often ask "closed-questions," questions that can be answered with yes-or-no answers. Questions such as "Do you think drugs are bad?" or "Are you happy to be at this school?" will elicit less talking than "What are your views about drugs?" or "Describe your feelings about this school"

ACTIVITY: REPHRASING QUESTIONS

Below is a transcript of a student interviewing a teacher. Have your students, either individually or in small groups, rephrase these questions to be 'open':

Q: Are you a teacher?
A: Yes
Q: Do you like teaching?
A: Yes
Q: Did you ever teach before you came to this school?
A: Yes
Q: Did you like school when you were a teenager?
A: No.

Sometimes students ask questions that are really several questions rolled into one. Some are tempted to ask long, complicated questions that reveal more about their own ideas about a topic than bring ideas forth from the interviewee.

Here is an example of a long confusing question. Have your students either individually or in small groups, rephrase it into several open questions.

Q: When you first started teaching did you immediately like what you were doing or did you have regrets that maybe you should have tried some thing different that might have made more money and did you always want to be a teacher when you were in college or did you study many things?

A: Could you repeat the question?

One of the primary skills for doing research for inquiry-based projects is the ability to conduct an interview.

ACTIVITY: BRAINSTORMING INTERVIEW QUESTIONS

At EVC, we get the entire class prepared for an interview, and each student is involved in creating questions. In this activity, the whole class will create one list of 10 questions for interviews on the street.

Assign the class a topic or have the class brainstorm and vote so that one topic is chosen. Each student should write 3 interview questions on the topic. Write all the questions on the board or type them up & xerox them. Repetitious questions are acceptable if they are phrased differently. After all the questions have been written on the board, read them aloud.

Ask students to combine similar questions - find differently worded questions that have the same ideas, and cluster them together. Either as a whole class or in small groups, have the students combine and rephrase the cluster of questions into several 'open' questions. If the students identify one or two questions that encompass all their ideas, they can use those questions instead of combining and rephrasing the entire cluster.

During a subsequent class, the questions will have to be ordered. The questions should go from more general ones at the beginning to more detailed ones later; questions about problems should precede questions about solutions, and finally, personal questions, if asked at all, should be saved for last, once the interviewer has established a rapport with the interviewee. For example, "what do you think about the drug problem in New York City? is a good opening question, rather than "describe your own experience with drugs."

LEARN TO LISTEN ACTIVELY

The greatest skill of a good interviewer is one that may not come to mind right away – it is the ability to listen. The great television interviewers like Bill Moyers and Barbara Walters always show extreme interest in their subjects by listening intently. Everything about one of these skilled interviewers – the facial expression, their body language, the position of the chair – conveys the impression of intense listening. In this way they make the interviewee feel like talking and they can react intelligently and sincerely to what their subject says. They are active listeners - they listen so that they can respond.

The questions which we carefully prepare before beginning an interview are really just a departure point. Often there is no way to anticipate the answer to a question, so good interviewers learn to think on their feet. They formulate new questions as they go along, based on the responses to previous questions. This type of give and take is interviewing at its best – a vibrant conversation that the interviewer guides and directs. This takes practice, but it is by no means beyond the reach of students; we have seen many dynamic interviews conducted by young people. In fact, interviewing can be an excellent way for students to improve their listening skills.

TIP: Instruct your student interviewers that if they don't understand an interviewee's answer, rather than pretending they did, it is better if they ask the interviewee to explain his or her answer in a different way because they didn't understand it the first time. Chances are that if n one student doesn't understand something, neither will others.

MAKE EYE CONTACT

Nobody likes to talk with someone whose eyes are wandering. If you don't look at the person you are speaking to, he or she will feel you have no interest in what they are saying, even if you do. Maintaining eye contact with an interviewee is one of the most important skills of a good interviewer but it can be difficult for beginners. At first, many students stare at their list of questions, terrified of losing their place or making a mistake. The interviewee feels lost and confused and may cut the answers to the questions short because the interviewer doesn't appear to be interested.

One of the most exciting ways to gather research with the video camera is to conduct vox-populi or man-on-the-street interviews.

Making eye contact requires a certain amount of assertiveness and self-confidence, and conducting interviews can help students develop these qualities. In fact, all the interviewing skills – active listening, preparing good questions, thinking on your feet – can increase students' faith in themselves and make them more active learners.

MAN-ON-THE-STREET INTERVIEWS

One of the most exciting ways to gather research with the video camera is to conduct vox-populi or man-on-the-street interviews. Here information is collected from chance encounters with people in the neighborhood who are all asked the same question or series of questions. Their opinions provide a kind of Greek chorus, an overview of popular feeling about an issue or event or even recent history. One of our most memorable man-on-the-street interviews was conducted by a class studying World War II. The student interviewer asked an elderly man what he remembered about the war; he turned out to be an American Jewish veteran whose platoon had liberated one of the German concentration camps, and when he began to talk about his experience tears came to his eyes. Through his interview the war came to life for these students in a most profound and moving way.

It might seem daunting to take your class onto the sidewalks with a video camera, but the best advice is simply to plunge in. Taking the whole class at once can be difficult, but if you can bring more than one camera and corral another adult to go along you should have no problem. Divide the class into crews of four before you leave the school and be sure each

crew knows who will take the roles of camera operator, director, interviewer and point person. The director will call the shots and the point person will approach people to be interviewed. It is important to go over with the students a protocol for asking people if they would like to be interviewed: “Hi, we’re from the local middle school and we’re doing a project on community gardens. May we ask you a few questions?”

As you proceed the groups should rotate crew roles as we discussed in the earlier section *Rotating Crew Roles*, with each group interviewing one or two people. With a class of thirty and one camera this would be only seven rotations. We have found the process to be so interesting to students that they don’t mind watching the other groups, and they learn a lot from each other’s attempts.

A FEW TIPS FOR SHOOTING THE MAN-ON-THE-STREET INTERVIEW:

- Always use an external microphone if possible -your sound will be much better
- Keep the questions short and simple
- Don’t use a tripod. This is a journalistic mode, it doesn’t matter if the camerawork is a little shaky
- Try not to shoot against the sky or a very bright wall in order to avoid the backlight effect.

SIT-DOWN INTERVIEWS

Interviews for which you have set up an appointment, perhaps with an expert in the field, or the principal or a parent, are more controlled and controllable situations than the vox populi. In this kind of interview it is best for both the interviewer and the interviewee to sit down and for the camera to be on a tripod. A quiet location should be designated and the subject should be made to feel relaxed and comfortable. This kind of interview is much more conversational than the man-on-the-street variety so the environment should be conducive to talking and listening.

The background is important here. Remember to avoid the backlighting effect – don’t seat the subject in front of a window. However, a window to one side, just out of the shot, might provide a nice natural lighting effect. Avoid having anything in the background that might be distracting, such as a clock or a very strong graphic, unless you have a good reason to include it.

One question students often ask is, “Where should the interviewee look – at the camera, or at the interviewer?” Although either one is acceptable, generally the audience feels more comfortable if the subject looks at the interviewer; if the interviewee looks directly at the camera he appears to be staring directly into the eyes of the person viewing the tape. This can be disconcerting and distracting.

To set up so that the subject speaks to the interviewer, the interviewer should sit close to the camera but a little to one side. It is important not to sit too far to the side so that the interviewee is not shot in profile. Ideally we should see as much of the interviewee’s face as possible.

How to set up the microphone will depend upon whether you want to hear the interviewer’s questions in the final tape. If you do, the interviewer should hold a microphone and tilt it back and forth as they speak. If you do not want to preserve the interviewer’s questions, a lavalier microphone is ideal. This is a small mic that hooks onto the interviewee’s lapel and picks up the voice of that person very clearly. A lavalier can be purchased for around a hundred dollars and is a great tool to add to your equipment list.

When student crews are preparing to shoot an interview, the director must decide on the type of shot they want to record before taping begins.

TIP: When student crews are preparing to shoot an interview, the director must decide on the type of shot they want to record before taping begins. Do they want the interviewer and interviewee to be sitting or standing? Are they facing each other? Is the audience looking over the interviewer’s shoulder, so that they get a nice close up of the interviewee if the camera zooms in, but don’t see the interviewer’s face?

Alternately, is the interviewer/interviewee facing each other so the camera records their profiles, but neither are excluded from the shot? Once these decisions are made the director should go over shot with the camera operator to ensure they are on the same page.

TYPES OF INTERVIEW SHOTS

There is no one way to shoot an interview, but there are several kinds of shots that are preferred. As we mentioned in our previous tip, the important thing is for the director to decide upon the kind of shot they want before setting up for the interview and communicating this to the camera operator. The worst thing to come away with is a video in which the camera is swinging back and forth between the interviewer and the subject or zooming in and out every time a different person speaks.

SIDE - ANGLE

In this shot we see both the interviewer and the interviewee, sitting next to each other. This is a good shot to use if you want to keep the interviewer's questions in the video. Try to frame it so that it is as tight as possible while still fitting both people into the frame.

MEDIUM SHOT

Here we see only the interviewee in a shot that includes the head and shoulders. This is the most commonly used shot in documentary videos and films.

OVER-THE-SHOULDER

In this shot, most often seen in news programs, the camera is right behind the interviewer, so that a bit of the interviewer's head and shoulder can be seen.

EVALUATING YOUR INTERVIEWS

Students can greatly improve their interviewing skills from interviewing each other on videotape and watching and critiquing the interviews (refer to the section headed *Building Critical Viewing Skills*).

The following is a sample list of interview "Do's and Don'ts" that a group of students wrote after viewing and discussing their interviews. The same activity could be done after students watch a mock interview between the teacher and a student where the teacher purposely exaggerates a lot of poor interviewing skills.

STUDENT SAMPLE: "INTERVIEWING DO'S AND DON'TS"

- **DO** make eye contact with your interviewee
- **DO** make the interviewee feel comfortable
- **DO** listen carefully
- **DO** ask follow-up questions when appropriate
- **DO** ask open-ended questions

- **DO NOT** read mechanically from your list of inter view questions
- **DO NOT** chew gum during the interview
- **DO NOT** ask closed questions (questions answered with a yes or no)
- **DO NOT** look bored or unexcited
- **DO NOT** ask complicated questions that are really two or three questions combined.

COMMON INTERVIEW CAMERA SHOTS

SIDE - ANGLE INTERVIEW SET-UP

OVER THE SHOULDER INTERVIEW SET-UP

MS: MEDIUM SHOT

CU: CLOSE UP

Shot Sheet

MS: MEDIUM SHOT

CU: CLOSE UP

ECU: EXTREME CLOSEUP

WS: WIDE SHOT

HIGH ANGLE

LOW ANGLE

INTERVIEW SHOTS

SIDE ANGLE INTERVIEW SET-UP

OVER THE SHOULDER INTERVIEW SET-UP

TWO SHOT

PUTTING IT ALL TOGETHER: FINAL STEPS

CLASSROOM MANAGEMENT

When students have finished shooting, the footage needs to be viewed & analyzed, ideas shared, and decisions made as to how the piece will be edited. Sometimes shy or quieter students have a hard time pushing their way into a discussion. To avoid this, we suggest that the students sit in a circle, or around a table in their small groups, and do a "go round" where each student talks in turn about one small section or "bite" that they really like. This encourages full participation, so that the quieter students don't get lost in a lively discussion of just a few voices. In a later go round they can share ideas for the final project and after those ideas are discussed, a final go round can take place in which students can state their preferences, second choices, etc. in order to come to work out an agreement with their group members.

ORGANIZING MULTI TASKS

Video editing is essentially a small-group activity. When students are putting their projects together at the computer or video console, the teacher should organize several other activities so that there aren't eight children huddled around one station. In that kind of a situation it is impossible to keep children on task. While 2-3 students are at editing, students can work in pairs tackling other tasks: doing book and article research, writing interview questions, creating related artwork. Some group members could also work on their individual writings and reflections, or text and narration for their projects. At the end of the period, the whole group can come back together, doing a "go round" of what each student accomplished during the class.

BUILDING CRITICAL VIEWING SKILLS

Unfortunately, good critical skills are not something you are born with: these skills need to be learned, and creating multimedia presentations like Hyperstudio and video productions using iMovie, can be a good way to teach them.

In our experience, students are initially overly harsh critics of each other's work. Before asking for their remarks, it is a good idea remind them that people take criticism better if they are told positive things first - for example, "I like the way you spoke," or, "Your acting was really convincing." Once there has been some positive response the students can continue to offer criticism, but in a more constructive way. Saying to a classmate, "You looked stupid" never helped anyone improve. But a comment like, "You sound good but you need to sound louder," is right on the mark.

The student audience should also critique the crew. For example, they might suggest to camera operator that she zoom in or out or pan at certain points, or that she shoot from a different angle. They might also give the rest of the crew feedback, such as "I couldn't hear the director" or, "The microphone was in the shot." Offered constructively, their remarks can improve the look of the shooting and thereby the overall quality of the scene.

... good critical skills are not something you are born with: these skills need to be learned...

RUBRICS, STANDARDS AND ASSESSMENT

What is the best method for evaluating students' work in media?
At EVC we have found that the authentic means of assessment – reflective journal writing, portfolio round- tables, exhibitions of student work and the development and use of rubrics – are especially effective in the appraisal of media-based student projects. Unlike a quiz or a paper, a media project is a complex assignment that progresses over time and relies heavily upon the development of critical thinking skills. As a result, a project of this sort can allow for significant growth in the metacognitive area, helping students to understand how they learn. But if this is to happen they need more feedback than a simple grade can give and they need to be participants in their own evaluation process.

JOURNAL WRITING

Unfortunately, ours is not a reflective culture; most of us tend to go about our daily affairs with little time set aside for contemplation. Our schools mirror this tendency, so that students rarely have the chance to think what they are learning or about their own learning processes. Keeping a journal is an excellent way for students to track and reflect upon their learning and for teachers to gain insight into their students during the course of a project; when the project is completed the journal becomes a document of how and what they have learned.

In order for journal writing to work well it requires practice and ongoing attention from the teacher. It is important to set aside a short time each day for the sharing of journal entries with the entire class, and for the teacher to read and respond to them on a regular basis. Entries should not be graded, as that can discourage candor on the part of the students; you want them to be truthful, not writing what they think you want to hear. By reading and responding to journal entries teachers can encourage growth and anticipate problems before they multiply.

As a practical matter, we have found it works best to keep journal notebooks in the classroom, in a folder of each students' work, and to provide time during class for writing in them. This way, no one leaves their journal at home, and journal writing can become a habit for the student -perhaps the first thing they do each day when they come into the classroom – as well as a means of cultivating reflective behavior. Likewise, sharing their entries with their classmates can promote understanding and collegiality among the students in the class.

Keeping a journal is an excellent way for students to track and reflect upon their learning and for teachers to gain insight into their students during the course of a project

DEVELOPMENT AND USE OF RUBRICS

We have included rubrics for three areas of media project development with this guide: media production, interviewing and research skills. Unlike some rubrics, these are designed around objectives, activities and outcomes rather than levels of quality because we wanted to focus broadly on the steps required for skills development. We have also tied each of these outcomes to the Middle School English language Arts standards. An extension of these rubrics would be to add the qualitative element, describing levels of quality for each outcome. As we mentioned earlier, we like to develop rubrics along with our students, so that they are participants in the assessment process. This way, a rubric becomes part of the instructional strategy - students understand what is expected of them - and the distinctions between instruction and evaluation begin to break down.

At what point, then, should a rubric be created? How can students develop an assessment tool before they have learned the subject matter? One possibility is to create a series of rubrics as you go along, after the introduction of specific skills. For example, after the camera is introduced the students reiterate what they need to know to operate a camera, in the form of a rubric. Later, as their skills improve, they can add higher-level outcomes to the list. When it comes time for the teacher to give them a grade, they have a solid understanding of what a letter grade actually signifies.

PORTFOLIO ROUNDTABLES

At the end of each semester at EVC students must defend their work to a panel of teachers, parents, guidance counselors and media producers in the form of a portfolio roundtable. It's impressive to see these young people standing in front of a group of adults explaining what and how they have learned; they back up their statements with a portfolio of their writing, storyboards and videotapes, and field difficult questions about their skills and the form and content of their projects. Afterwards, the panel gives them feedback and suggestions for improvement, and their instructors talk with them about grading.

The roundtable is the culminating event of a semester's worth of project-based learning and is based upon evidence collected and saved since the projects inception. The students prepare for the roundtables by going over the work they have done and selecting for the panel items that best demonstrate the progress they have made. Thus, they might screen an early interview and a later one to show the improvement of their interviewing skills, or pass around drafts of a script. It is incumbent upon them to analyze and evaluate their own learning.

Assessment of this nature, while it is more work for both students and teachers than simply applying a letter grade, ties evaluation to learning in ways that are manifestly clear to students.

Students who recognize that they are making work for an audience, and who have taken part in shaping the assessment of their projects have a deep investment in their own learning.

EXHIBITION OF STUDENT WORK

One of the most exciting aspects of project-based work is that it results in a product that can be exhibited to an audience. This is perhaps especially true for media projects which are, after all, created with the tools of communication. To create work with the understanding that it will be presented to an audience upon completion ties the classroom to the real world, making learning more meaningful for students.

When we have screenings of student work at EVC we take them very seriously and make an effort to gather a sizable, diverse audience; we invite parents, school personnel, media producers, funders and the press. We also give the students ample opportunity to answer questions after the screening. All the student producers stand in front of the audience after their work is screened and make themselves available to respond to questions from the audience. Answering for themselves in this way is part of the learning process for these students; as every teacher understands, you don't really know if you know something until you try to explain it to someone else.

Media projects created in schools can and should be exhibited for an audience, whether it is the class next door or the international audience of the World Wide Web. The important thing is for students to have pride in their work and to know that it will be seen by others. Students who recognize that they are making work for an audience, and who have taken part in shaping the assessment of their projects have a deep investment in their own learning.

MEDIA PRODUCTION RUBRIC

OBJECTIVE	ACTIVITY	OUTCOME	STANDARDS
To understand the visual language in still images, film and television.	Students analyze and deconstruct films, photos and TV clips for shots, camera moves, and composition.	Students gain a working knowledge of film language, composition and lighting concepts.	E3d - Student makes informed judgments about film, TV and radio.
To set up a shot for maximum effect.	Students practice setting up shots, applying knowledge of film language, shot composition and lighting.	Students can effectively apply what they know about the visual language of moving and still images.	E3d - Student makes informed judgments about film, TV and radio.
To operate a video camera with intent.	Students participate in hands-on video production workshops.	Students are able to use a video camera independently and convey intended effect; they demonstrate that they know basic camera moves and shots.	E3d - Student makes informed judgments about film, TV and radio.
To care for and recharge batteries.	Students receive training in the care and recharging of batteries	Students are able to care for batteries and recharge them as necessary.	
To use a tripod correctly and with understanding.	Students review and practice use of tripod.	Students know when to use a tripod and how to operate one correctly.	
To use microphones correctly and with understanding of the technology.	Students review types of microphones and practice recording with them.	Students know differences between types of micro-phones, how to use them.	
To work as a member of a production team.	Students learn crew roles and practice rotating them.	Students understand the importance of teamwork and are able to assume all production roles.	E3b – Student participates in group meetings.
To prepare for an edit and create an edit plan.	Students learn to log video tape and create a paper edit.	Students understand the need for logging and planning and can prepare a comprehensive paper edit.	E4e – The student demonstrates familiarity with functional documents, produces work.
To operate a video editing system with intent.	Students learn and practice editing techniques and esthetics.	Students can create edited videos that exhibit reasoned intent in content and compo-sition and present central themes in a concise and compelling way.	E2a – The student produces a report that engages the reader, develops a controlling idea, creates an organizing structure, etc.
To understand and construct the functions of specific multimedia and Web software.	Students learn to use multi media and web software and incorporate audio, video and still images.	Students are able to design and construct an esthetically pleasing, coherent multimedia project or website.	E4c – Student reads and comprehends informational materials; produces written or oral work.

INTERVIEWING RUBRIC

OBJECTIVE	ACTIVITY	OUTCOME	STANDARDS
To distinguish between a good and bad interview.	Students watch and analyze a range of professionally produced interviews. Students review and practice use of tripod.	Students understand that a good interview is a conversation about a specific subject, conducted with intent.	E3a – The student participates in one-to-one conferences with a teacher, etc.
To develop good interview questions.	Students study the distinction between open-ended and closed questions.	Students are able to formulate open-ended questions and follow-up questions.	E1c - Student comprehends material, produces work.
To prepare a well-ordered set of interview questions.	Student analyze their interview questions and learn to arrange them in a meaningful order.	Students create a sequence of questions moving from general to specific and from problems to solutions.	E4b – Student analyzes and revises work to clarify and make it more effective.
To develop good interview skills.	Students practice maintaining eye contact, listening, handling the microphone and speaking clearly..	Students are able to put an interviewee at ease, speak clearly and listen carefully to answers to questions.	E3a – Student participates in one-to-one conferences with a teacher, etc.
To shoot an interview successfully.	Teacher models and students practice three camera set-ups: over-the-shoulder, two-shot, one-shot.	Students are able to direct the three camera set-ups and understand the purposes of each.	E3d - Student makes informed judgments about film, TV and radio.
To conduct an in-class interview.	Students pair up, develop interview questions and conduct interviews.	Students become adept at setting up and using good interviewing skills.	E3a – Student participates in one-to-one conferences with a teacher, etc.
To conduct a man-on-the-street interview.	Students prepare topical questions to ask the public and conduct interviews in the school neighborhood.	Students gather a range of opinions on issues and have the experience of conducting interviews outside the school.	E3a – Student participates in one-to-one conferences with a teacher, etc.
To conduct an interview with an expert on the interview topic.	Students locate experts on the interview topic, gather background information. Develop questions, set up an interview with expert(s).	Students conduct a successful interview with at least one expert in the field.	E3a – Student participates in one-to-one conferences with a teacher, etc.
To critique an interview for technical aspects.	Students view tapes, noting technical aspects.	Students can critically evaluate video footage for quality of sound, framing, focus, lighting.	E3d - Student makes informed judgments about film, TV and radio.
To analyze an interview for content.	Students view tapes, noting informational aspects.	Students can evaluate value of viewpoints expressed, how they relate to evidence.	E3d - Student makes informed judgments about film, TV, radio
To log an interview for editing.	Students view tapes, noting relevant points.	Students select segments for use in final project.	E4b – Student analyzes and revises work.

MEDIA PROJECT RESEARCH SKILLS RUBRIC

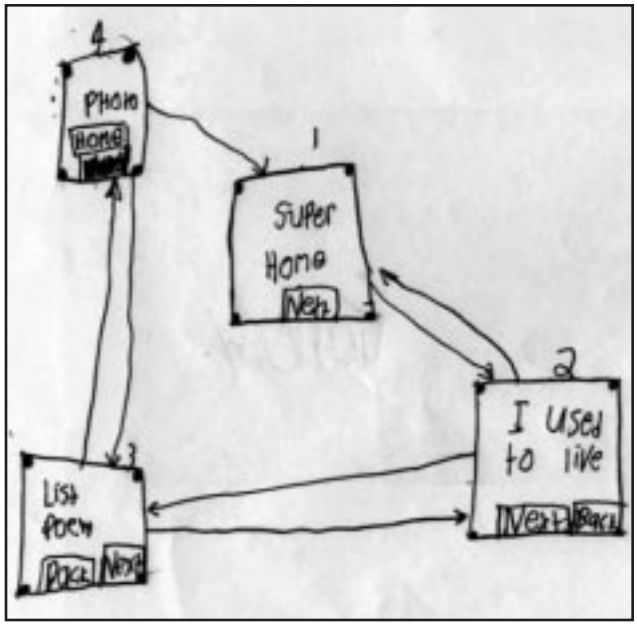
OBJECTIVE	ACTIVITY	OUTCOME	STANDARDS
To find personal connections to research topic.	Teacher facilitates guided free-write about curriculum-related questions of interest to students.	Students develop questions based on interest and prior knowledge and pitch them to the class.	E2e - Student produces a persuasive essay.
To determine topic of the project.	Students review questions and prioritize to finalize topic of project.	Students decide what their project will be about.	E3b - Participates in group meetings.
To determine audience for completed project.	Students evaluate potential audiences for the project.	Students identify a specific audience for the project.	
To determine objective of completed project.	Students evaluate audience and topic to determine project objective.	Students can articulate a specific objective for their project.	
To create a research agenda.	Students make a list of potential research sources.	Students identify research sources including interview subjects, written and visual documents, media and the Internet.	E1e - Student demonstrates familiarity with functional documents, produces work.
To conduct interview-based research.	Students practice interviewing, based on *Interviewing Skills Rubric*.	Students are able to conduct videotaped interviews that elicit factual information that relates to other evidence gathered and that are of a high technical quality.	E3a – Student participates in one-to-one conferences with a teacher, paraprofessional or adult volunteer.
To conduct research using written documents.	Students locate relevant documents and information contained therein.	Students gather relevant information from written documents which is either quoted or paraphrased.	E1e – Student demonstrates familiarity with functional documents, produces work.
To conduct research for images.	Students locate sources for images and determine ways to import them into project.	Students are able to illustrate their project using still images from a variety of sources.	E1e – Student demonstrates familiarity with functional documents, produces work.
To conduct research using the Internet.	Students search for relevant websites and examine them for information.	Students can find relevant websites, distinguish credible sources from unreliable ones and either quote or paraphrase them.	E1d – Student demonstrates familiarity with a variety of public documents, produces work.
To organize, evaluate and summarize research data.	Students use graphic organizers and discussions to synthesize data.	Students are able to determine the most useful aspects of their data and summarize it.	E1d – Student demonstrates familiarity with public documents.
To incorporate research data into the project.	Students create project outline with storyboards, other graphic organizers.	Students integrate the results of research into their project.	E1d - same as above

HYPERSTUDIO

Hyperstudio is a multimedia authoring program.
It works and looks a lot like a website in that "buttons" can added to your working page which once "clicked" can take you in all sorts of different directions.

Keep in mind therefore, that a Hyperstudio stack is not linear like a slide show - it is a good idea to map out your stack before you begin - much like planning out the base of an essay or drawing out the route you would take if you wanted to get from point A to point B.

Refer to your Hyperstudio manual for more information on what you can do with this program.



GETTING STARTED

1. Click on New Stack. Your first card will automatically appear in the screen.

2. Drag the *Tool's* and *Color Palettes* from drop down menu and put to side of screen

TO CREATE A CARD

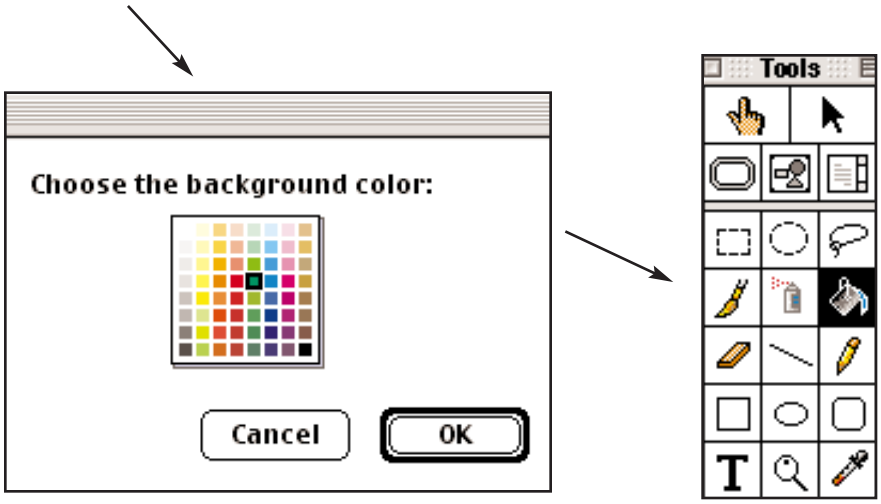
1. Select New Card from Edit menu
2. Continue adding cards until the stack is complete
   To move between cards go to the *Move* menu on the above menu bar and select the card you that you wish to go to.

TO SET A BACKGROUND COLOR

There are two ways to pick a background:

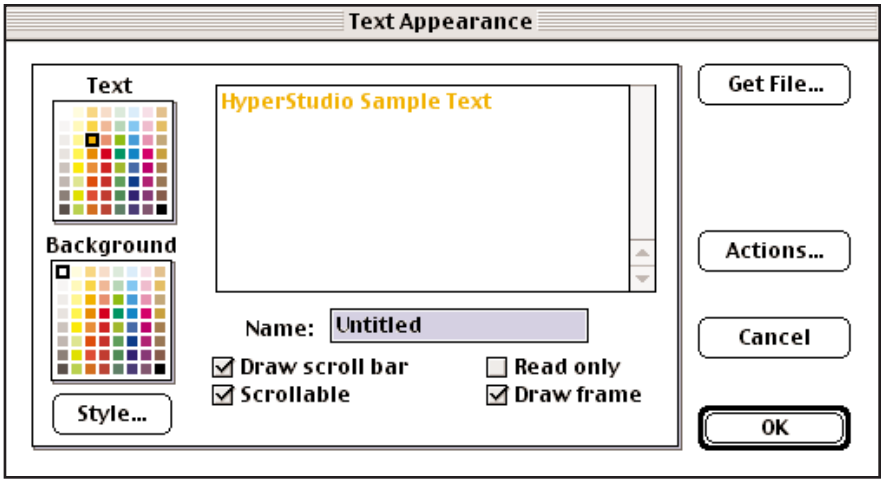
1. Go to Edit > erase background color. Click on the color you want to choose, click OK.

2. Select a color or pattern in the color palette.
   Click on the bucket in the tools box and Click on the card.



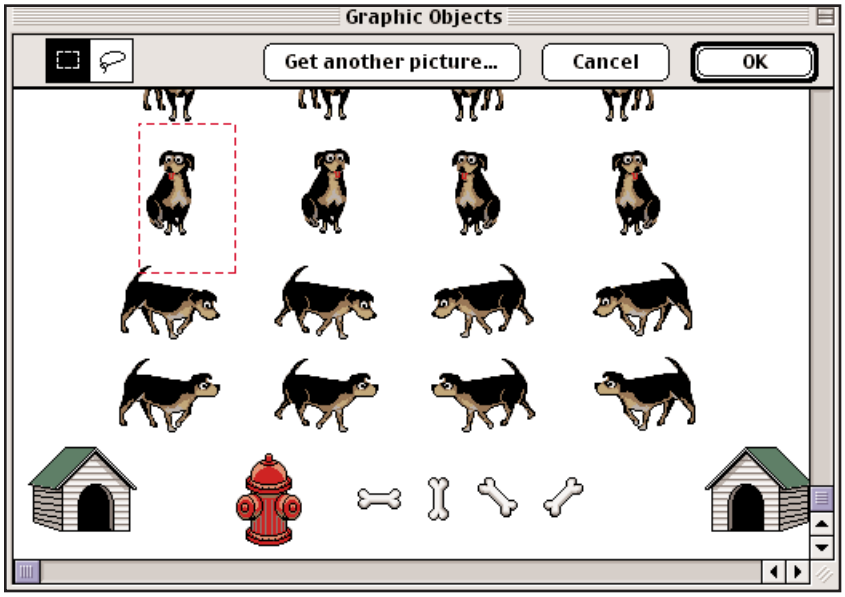
TO ADD TEXT

1. Go to Objects > Add a text object
2. Locate the box where you want the text to appear.
3. Click outside the text box in the white area.
4. Select Text Color.
5. Click on Style to select font, size and style.
6. Click OK.
7. Type text.
8. If you don't want to see a scroll next to the text box or have a text border, make sure that the "draw scroll bar", "scrollable" and "draw frame" boxes are not checked.



ADDING A GRAPHIC

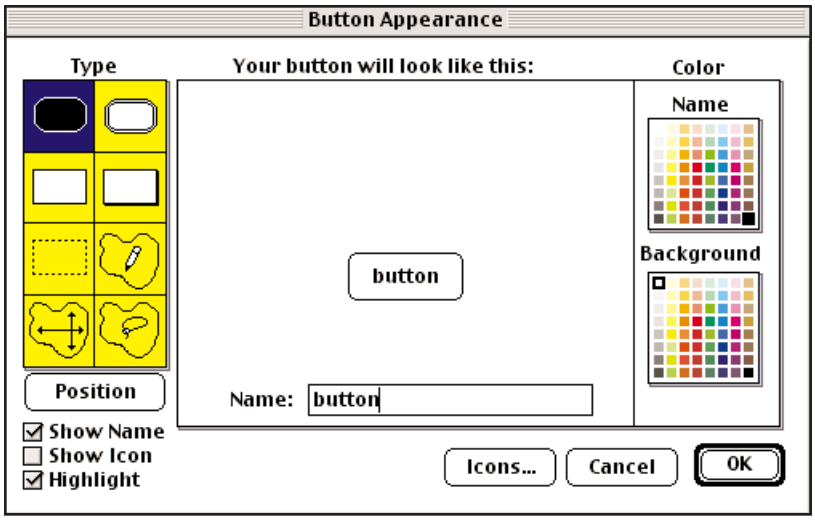
1. Go to Objects menu > Add a graphic object.
2. Select disk file.
3. Draw around picture until flashing red dashes highlight the desired area



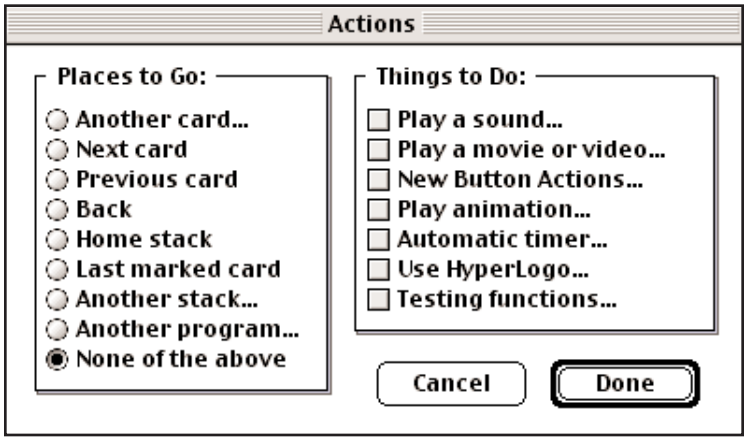
4. Click OK.
5. Place picture on card by dragging it,
6. To make changes, select the picture icon from Toolbox and then click on graphic that you want changed.

ADDING A BUTTON

1. Go to Objects > Add a Button.
2. Choose Type and Color.
3. Type in Name and click OK.



4. Place button on the card and click on the card. A new window will appear:



5. Select an action and or a place to go (another card or a link).
6. Click OK.
7. If you chose a place to go pick a transition, change speed to medium, and click OK.
8. To make changes select button shape on toolbox and double click on button on card.

TO ADD A VIDEO CLIP

To add a video clip to a card you have to first create a new button and position it.

1. In the Action dialog box, click Play movie or video.

2. In the movie video source choose disk file and press OK.
3. Find a video file in your computer and press open.
4. Position the video in the screen and resize it if necessary and click outside.

NOTE: Movie files must only be run from the computer's hard drive. If you have something saved on a disk - move it to your hard drive first. Movie files can be Quicktime, MPEG, MOV or AVI format.

5. Choose from the different options from the QuickTime Movies dialog box and click OK.

WORKING WITH iMovie

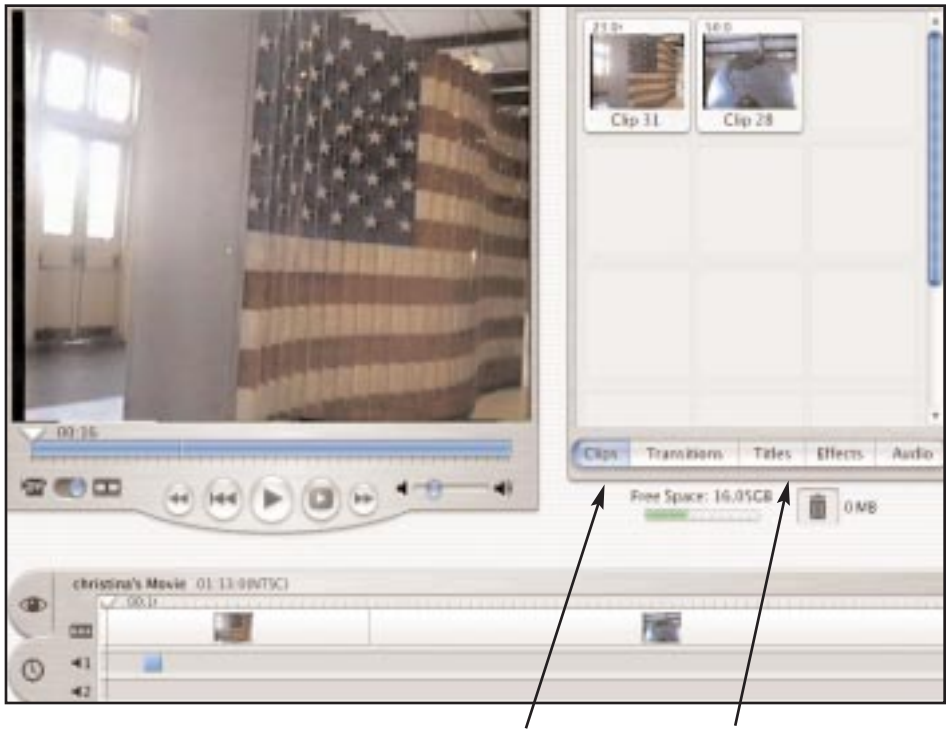
iMovie is video editing software that comes pre-installed on all Apple DV computers (it can also be purchased separately from Apple for $50). iMovie uses high-quality "DV" digital video format. The best thing about it is that it is a dream to use : you just plug in a compatible DV, miniDV or Digital 8 camcorder and click on an icon to launch the program. iMovie enables you to edit digital video, add music, narration or sound effects to your film project's soundtrack and gives you the choice of adding various transitions between each of your clips - like the wipes and dissolves we see in films. iMovie also lets you export your film back to tape or save it as a QuickTime file which you can use in other multimedia programs or use to send in an email over the web.

Apple recently released iMovie 2, which among other things, allows you to split soundtracks. Although still a basic editing program - the ease with which you can use it (ensuring of course, that you have a compatible camera) far out-numbers it's limitations. The steps we have included for you below assume you will be using iMovie 2 and Mac OS 9. They are intended to be a brief introduction - we recommend you use the iMovie help menu within the program or consult with an iMovie manual should you require any more information.

IMPORTING DIGITAL VIDEO FROM A VIDEO CAMERA

1. To import video, connect a fire wire cable from the video camera to the computer.
2. Point your mouse to the DV camera icon just under the imovie screen  and select it to import your video. If all is well the iMovie monitor will turn blue and display the words “Camera Connected”.
   If you don’t see these words - something isn’t right - go over the steps again or trouble shoot using the iMovie help menu from within the program.
3. If you are in camera mode you can now use the computer to control the camera. Click on the DV import icon again when you want to stop importing.

When you import your footage, into iMovie, each clip you import appears on the clip shelf. The shelf can hold as many video clips as your drive can capture.



EDITING YOUR MOVIE: BUILDING THE MOVIE TRACK

The movie track (eye icon) is like a storyboard. Both the first frame of the clip as well as it's length are displayed.

Drag the clips from the clip shelf to the onto the movie track at the bottom of the screen in the order that you want them in your video. You can change the order at any time by dragging a clip from one part of the Movie Track and placing it elsewhere — between any two clips, at the beginning of the movie track, or at the end. On the track, you can delete clips by highlighting them and then hitting "delete" on your keyboard or you can move them back on the shelf if there is room.

IMPORTING STILLS FROM THE MAVICA

To import JPEG image stills from the Mavica, simply take out the disk from the camera and place it in the disk drive of the computer.

1. Click on File > Import > File
2. Select the Jpeg image you want to import
3. Click on Import

SPECIAL EFFECTS AND TRANSITIONS

Creating special effects such as making your movie look sepia-toned, or giving your clip a watery look, has never been easier. Simply click on effects.

Highlight the portion of the movie track that you want to change and then click on the effect. You can do the same with transitions - going from one film clip to another. For example, you can fade in, fade out, dissolve, wipe or transition in numerous other ways from one clip to another.

TIP: If you change your mind after you apply an effect to a clip, or feel you've made a mistake, you can magically restore video clips to their original form using the "Restore Clip" button. iMovie also has multiple levels of "undo". This means that you can go back quite a few steps in the process and undo things you've done.

CREATING TEXT AND TITLES

To create titles or longer text pages click on the title button under the clip shelf. Type your titles in the lines that appear on the screen and then choose a title style. Click on “preview” to see how your title will look. You can change the color by clicking the tiny square marked “color”. A palette will appear with colors to choose from. Click on your selection.

You can adjust the size of the letter(s) by dragging and clicking the mouse in the area of the small "A" or large "A." If you check the "over black" box your text will be over a solid black background. : If you don't check the "over black" box, your text will appear superimposed over your video clips.

If you want to make any changes such as color, letter size, speed, etc., make the changes and then click on "update." To adjust the speed at which the text effect comes in, adjust the “speed” and “pause” slides. Don’t forget to click on “update,” after making the changes.

When you are ready to include the title in your movie, drag the little screen with text from the preview area and place it in the Movie Track, where you want the title to appear. If it is text over black, you drag it in front of a clip, or in between two clips. If your title is superimposed over video, drag it on top of the clip you want it to appear over. You’ll see the first frame of the title in the movie track, just like one of your other clips.

TIP: Although many people prefer to superimpose their text over video, white text over a black background has a very professional look and is a very readable text in iMovie.

Shortening a Clip & Inserting a Title or Another Clip Inside a Clip

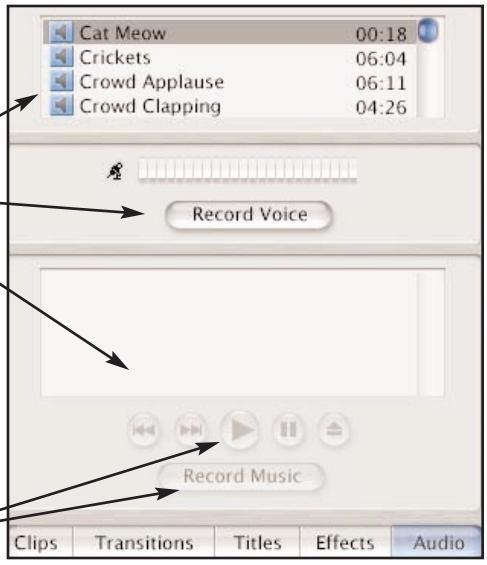
There are several ways in iMovie to shorten a clip. One way is to use the “Split Clip at Playhead” command, which is also used to insert another clip or text inside a currently existing clip on your Movie track.

TIP: In order to make titles with fancy effects such as “flying letters” as readable as possible, without having to leave them on screen for an interminable amount of time, try shortening the “speed” slide as much as possible, and lengthening the “pause” slide as long as you need so the title can be read more slowly.

1. Click on the clip to select it—click above the Scrubber bar.
2. Drag the playhead along the top of the Scrubber bar until you find the spot where you want your clip to begin or end, or where you want to insert a title or another clip.
3. Click on Edit > Split Clip at Playhead.

Where you had one clip before, you will now see two clips — two separate boxes with the first frame of each one on the Movie Track.

NARRATION, SOUND EFFECTS AND MUSIC



iMovie, allows you to add music from a CD over the audio from your clips, narration, or sound effects. Click on "Audio". You can then either select "Record Voice", "Record Music", or a specific sound effect. To select a sound effect, drag it from the list down to the track. As you do this, the Movie Track converts to a Timeline Track and the audio tracks appear. Place the sound effect on either audio track 1 or 2, under the picture where you want the sound effect to be heard.

If you want to record music, drag the playhead in the Timeline Track where you want your music to begin. There are check boxes on the far right , next to each track, to isolate the track you will place your music in. Put in your CD and find the song you want. When you are ready to record, click on "Record Music" and then on the play button. While recording, "Record Music" will convert to "Stop." You will see the appropriate track highlighted in yellow as the music is recording. Your music will record until you click on "Stop."

Recording narration is more or less the same process. If you have an iMac, the computer has a built-in mic above the computer screen. If you don't have a built-in mic, you'll need to plug in a computer mic in order to record narration. The back of every computer, has a mic input (look for the mic icon). Place the play head in the Timeline Track where you want your narration to begin, click "Record Narration" and begin speaking. Click on "Stop" when you're finished. If you are having problems recording check your computer settings. Go to the apple menu on your desktop (top left hand corner), select Control Panels > Sound. Click "input" in the list on the left; and either Built-in or Internal CD as the device -depending what you are recording. You will also need to select your "input source" as either "Built-in Mic", "External Mic" or "Internal CD" from the drop down menu.

TIP: Depending on what you will include, designate your tracks for one type of sound. For instance, if you are having music throughout, designate one track, track 2 for example, just for music and make track 1 for narration and sound effects. Or, if you very little music, then you might use track 2 for both music and sound effects, and save the other track for narration only.

NOTE: If you have an older iBook you may not be able to find a microphone input. Mac were cheap with their earlier models and didn't put one in - what were they thinking! Thankfully they've corrected this with newer model iBooks.

EXPORTING YOUR MOVIE

You can export your movie to a digital tape or as a QuickTime.

To transfer it to videotape, set your camera to "VCR" mode, and cue up the tape in your camcorder. Make sure you use a blank tape so you don't record over something important ! Accidents do happen.

Click on File>Export Movie. Select "Camera" as the "Export to" option. To give your movie a clean and polished beginning and end, add a few seconds of black before and after the movie. Once it is on digital videotape you can dub it to VHS for easy playback.

To export to QuickTime click on File > Export Movie. This time select "QuickTime" from the drop down menu instead of "Camera". This will give you a number of "Formats" options. If you're planning on exporting your movie into a Hyperstudio project then select the "Web Movie, Small" option. This compresses it into a smaller file so it takes up less memory in your project. Refer to the iMovie help menu for a description of each format and it's uses.

Educational Video Center's (EVC) Teacher Development Department prepared this guide for the New York City Board of Education's Office of Instructional Technology. EVC can be reached at:

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